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# In the Name of Development? Geopolitics of Irrigation in Uganda

Charlotte Torretti

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Université Bordeaux Montaigne

École Doctorale Montaigne Humanités (ED 480)

THÈSE DE DOCTORAT EN GÉOGRAPHIE HUMAINE

# **In the Name of Development?**

## *Geopolitics of Irrigation in Uganda*

Présentée et soutenue publiquement le 25 novembre 2019 par

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# Abstract

Since the 20<sup>th</sup> century, irrigation technology has played an ever-increasing role in global food production. In a context of climate change and the return of the concept of food sovereignty after the 2008 world crisis, irrigation development is back at the top of donors' and governments' agendas, especially in Sub-Saharan Africa. This thesis analyses how, in Uganda, an east African country in the upper Nile basin, technocratic and infrastructure-heavy government-led irrigation schemes have developed over the last few years, continuing projects begun in the 1960s but that had quickly collapsed. We explore this particular orientation of public involvement in irrigation through the geopolitics of land-use planning. We thus propose to study the revival of irrigation by contextualising coping mechanisms observed on the ground, relating to access to, and use of, natural resources, with the Uganda-specific, neo-patrimonial approach to public involvement in irrigation. We have chosen a bottom-up approach to analyse how actors' strategic logics contribute to determining which technical solutions are promoted and how irrigation schemes are implemented and appropriated. The empirical-inductive methodology, exploring irrigation schemes from both low- and high-level perspectives, led us to mobilise various frameworks such as common-pool resources, political ecology and agronomy, and Science and Technology Studies. Besides contributing to this literature, this thesis offers new perspectives on the strategic issues relating to food production, and on understanding irrigation schemes as land development projects.

Key words: Africa, Uganda, agriculture, irrigation, geopolitics, land-use planning, common-pool resources, land, water, political ecology, STS

# Résumé

Depuis le 20<sup>ème</sup> siècle, la technologie de l'irrigation joue un rôle toujours plus important dans la production agricole mondiale. Dans un contexte de crise climatique, et du retour du concept de souveraineté alimentaire suite notamment à la crise de 2008, le développement de l'irrigation est de nouveau dans les priorités des bailleurs de fonds et gouvernements – plus particulièrement en Afrique sub-saharienne. Cette thèse analyse comment, en Ouganda, pays d'Afrique de l'Est situé en amont du bassin du Nil, des schémas d'aménagement technocratiques pour l'irrigation ont été récemment développés par le gouvernement – en continuité des projets des années 1960, qui se sont rapidement effondrés. Nous explorons ce choix d'orientation technologique et d'investissement public à travers la géopolitique de l'aménagement du territoire. Nous proposons ainsi d'étudier ce retour à l'irrigation en contextualisant les mécanismes d'adaptation observés localement, liés à l'accès et à l'usage des ressources naturelles, avec le contexte spécifique ougandais, où l'action publique pour l'irrigation est marquée par des dynamiques néo-patrimoniales. Nous avons choisi une approche par le bas pour analyser la manière dont les logiques stratégiques d'acteurs participent à l'orientation technologique des schémas d'aménagement, et la manière dont elles façonnent leur mise en œuvre et leur appropriation. La méthodologie empirico-inductive employée nous a menées à mobiliser différentes grilles de lecture théoriques, faisant appel aux biens communs, à la *political ecology* et *agronomy*, ainsi qu'aux *Science and Technology Studies*. En plus de contribuer à cette littérature, cette thèse offre de nouvelles perspectives sur les enjeux stratégiques liés à la production agricole, et sur la compréhension des périmètres irrigués en tant que projets d'aménagement du territoire.

Mots clés : Afrique, Ouganda, agriculture, irrigation, géopolitique, aménagement du territoire, biens communs, terre, eau, *political ecology*, STS

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*To Paul*  
*Who means the world to me*

We cannot trample upon the humanity of others without devaluing our own.  
The Igbo, always practical, put it concretely in their proverb  
*Onye ji onye n'ani onwe ya:*  
'He who will hold another down in the mud must stay in the mud to keep him down'.  
(Chinua Achebe)

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# Glossary

‰: percent

AFD: Agence Française de Développement

AfDB: African Development Bank

ASHISCS: Agoro Self-Help Irrigation Scheme Co-operative Society

CAO: Chief Administration Officer

CCO: Certificate of Customary Ownership

CPA: Concerned Parents Association

DSIP: Development Strategy and Investment Plan

EIA: Environmental Impact Assessment

ERP: Economic Recovery Programme

ESIA: Environment & Social Impact Assessment

FIEFOC: Farm Income Enhancement and Forest Conservation

GATT: General Agreement on Tariffs and Trade

GDP: Gross Domestic Product

HSM: Holy Spirit Movement

ICC: International Criminal Court

ICG: International Crisis Group

IDB: Islamic Bank of Development

IDP: Internally Displaced People

IFDC: International Fertilizer Development Center

IFPRI: International Food Policy & Research Institute

IMF: International Monetary Fund

inh/km<sup>2</sup>: inhabitant per square kilometer

IRC: International Rescue Committee

IUCN: International Union for the Conservation of Nature

IWRM: Integrated Water Resource Management

JICA: Japanese International Cooperation Agency

km<sup>2</sup>: square kilometer

LC: Local Council

LEMU: Land & Equity Movement in Uganda  
LRA: Lord's Resistance Army  
LRPA: Lira Rice Promoters Association  
MAAIF: Ministry of Agriculture, Animal Industry and Fisheries  
MLHUD: Ministry of Land, Housing and Urban Development  
MWE: Ministry of Water & Environment  
MoFPED: Ministry of Finance, Planning and Economic Development  
MP: Member of Parliament  
NAADS: National Agriculture Advisory Services  
NACRRI: National Crops Resource Research Institute  
NAPA: National Adaptation Programme of Action  
NARO: National Agricultural research Organization  
NDF: Nordic Development Fund  
NDP: National Development Plan  
NEMA: National Environment Management Authority  
NERICA: New Rice for Africa  
NGO: Non-Governmental Organisation  
NRA: National Resistance Army  
NRDS: National Rice Development Strategy  
NRM: National Resistance Movement  
NURP: Northern Uganda Recovery Programme  
NUSAF: Northern Uganda Social Action Plan  
OSRIP: Olweny Swamps Rice Irrigated Project  
OWC: Operation Wealth Creation  
PEAP: Poverty Eradication Action Plan  
PMA: Plan for Modernisation of Agriculture  
PRDP: Peace, Recovery & Development Plan  
PRSP: Poverty Reduction Strategy Paper  
RAP: Resettlement Action Plan  
REDD: Reduction of Emissions from Deforestation and Forest Reduction  
SACCO: Savings & Credits Cooperative Organization  
SIDA: Swedish International Development Agency

STS: Science & Technology Studies  
UGX: Ugandan shilling  
UNFCC: United Nations  
UNLA: Uganda National Liberation Army  
UPDA: Uganda People's Democratic Army  
UPDF: Uganda People's Defense Force  
UPDM: Uganda People's Democratic Movement  
USA: United States of America  
USAID: United States Agency for International Development  
USSR: Union of Soviet and Socialist Republics  
US\$: United States dollars  
WTO: World Trade Organisation  
WUA: Water Users Association

# Some Vernacular Terms

*Adwong*: leader of a group in Leb-lango

*Alulu*: in turn in Leb-lango

*Iteso*: adjective related to Teso

*Joro*: inside land, irrigated land, wetland; term used in the Agoro sub-county

*Kaka* (pl.: *kaki*): lineage in Lwo-Acholi

*Karimojong*: adjective related to Karamoja

*Langi*: adjective related to Lango

*Muganda* (pl.: *Baganda*): inhabitant of the Buganda kingdom, adjective related to Buganda

*Page*: hand-made, crafted dam blocking water flow for irrigation in the Agoro sub-county

*Rwot* (pl.: *rwodi*): head of *rwotdom* in Lwo-Acholi

*Rwot kweri* (pl.: *rwodi kweri*): in charge of managing a *kaka*'s land in Acholi

*Woko*: outside land, dryland; term used in the Agoro sub-county

# Introduction

Since the middle of the 20<sup>th</sup> century, irrigation has played an ever-increasing role in world agricultural production and food security. For example, according to the Food and Agriculture Organisation, irrigated agriculture represents nearly half of the world's food production and a fifth of cultivated land. Moreover, with the recent return of agriculture as a major priority for donors since the 2000s, irrigation is also gradually being promoted once again among international actors. This is particularly highlighted in Sub-Saharan Africa, where the "Green Revolution" did not take root as elsewhere, leading agricultural policies to focus mainly on increasing productivity. More particularly, irrigation technology is perceived as having the potential to considerably boost production in a continent where most crops are rain-fed and the level of mechanisation is low (Lançon 2012). This only highlights the strategic potential of irrigation development in a context of high population, unprecedented pressure on resources, the climate crisis and the return to food sovereignty.

In many societies and countries, large-scale irrigation has been a central element of economic and social development (Kuper 2011). Characterised by high levels of investment, large-scale irrigation was often developed by centralised political powers. The amount of investment, concentrated in limited areas of intensive agricultural production has been used to justify, to a varying degree of political control of the population. Karl Wittfogel (1957), for example, linked large-scale irrigation to the exercise of total power in the form of oriental despotism. In the 20<sup>th</sup> century, large-scale government-led irrigation schemes developed at an unprecedented scale, especially after technocratic management of land and water using large-scale infrastructure emerged out of the Asian "Green Revolution" (Jamin *et al.* 2011). In Africa, such schemes became widespread, mostly in the 1960s, in developmentalist states, in the context of recurring droughts in Sahelian Africa and food crisis (Barbier *et al.* 2011).

Although irrigation schemes were later removed from the public agenda in the Global South after macro-economic events led to the introduction of structural adjustment plans, the 2008 food crisis once again made irrigation a priority for states and donors alike. Large-scale

irrigation technology was indeed considered to be the best means of increasing food production while adapting to climate change (Rosegrant & Cline 2003, Lançon 2012, Torretti 2017). Since the 2000s, irrigation has thus returned to the top of states' and donors' agendas especially on the African continent, where government-led schemes once again play a major role, marking a return to infrastructure-heavy, large-scale irrigation (Barbier *et al.* 2009). By this time, land use had reached such levels of intensification, leading to reorganisation of land tenure systems, that irrigation schemes can be considered as pioneer territories introducing more intensified uses of resources (Landy 2006). They are seen as technocratic development projects, characterised by large investment in infrastructure, designed by centralised bodies and often left for local populations to use.

As in most Sub-Saharan African countries, irrigation technology was unknown in Uganda prior to colonisation. It was mostly introduced in the 1960s by the Chinese technical cooperation teams in the form of government-led schemes with an average area of 600-1,000 hectares, which, however, quickly collapsed. Recently, these schemes have been at the heart of a rehabilitation programme. This initiated renewed public action for irrigation in which large-scale schemes plays the major role, carrying on from the earlier Chinese influenced programmes. This goes, for example, against the recommendations of the International Food Policy Research Institute (IFPRI), which advocates the technical and economic suitability of small- rather than large-scale irrigation in the East African zone (You *et al.* 2010), questioning the political objectives of such policies. In the light of the resumption of global interest in irrigation, our research aims to explore the relationship between geopolitics and contemporary irrigation schemes in Uganda, a country located at the boundary between the Great Lakes region and the Horn of Africa.

## 1. A GEOPOLITICAL APPROACH TO IRRIGATION SCHEMES: WHY AND HOW?

The geopolitical approach is rarely applied to agriculture. Geopolitical studies focusing on irrigation are even rarer, and more often conducted in the context of state-level conflicts over access to water, particularly in arid areas such as the Middle-East, where irrigation has long been used. Although there are few geopolitical studies of agriculture, they follow a common

approach which has for a long time put states and conflict at the core of the analysis. Uganda's position at the upper end of the Nile basin means that traditional geopolitics would indeed tend to explore water for irrigation as an object of tensions and conflicts between states. While we do not wish to diminish the importance of that approach, this thesis sets out to demonstrate the importance of internal geopolitics by analysing the strategic reasons for using irrigation in Uganda. This called for a new analysis of the geopolitical approach.

### 1.1. The relevance of and need for a geopolitical approach to agriculture and food

Irrigation aside, agriculture and food have often made history, and are thus highly geopolitical since “the first, without which the second could not exist, is by its very nature related to territories (geo) and both find themselves at the heart of power-related strategies and rivalries (political), from the local to the international scale”<sup>1</sup> (Blanc 2017: 2016). For the philosopher and sociologist Henri Lefebvre, land is political, and agriculture is a major activity that shapes it. Nevertheless, questions relating to agriculture and geopolitics are usually explored from the economic or agronomic viewpoint. Power struggles and geostrategy are thus often neglected in trying to understand what links them (Cannon & Müller-Mahn 2010). Meanwhile issues relating to land, water and climate remain compartmentalised, leading their agricultural dimension to be ignored (Tardieu 2011). For example, when discussing the issue of water shortages, it is usually necessary to recall the vital role of agriculture, since irrigation remains the main use of water. However, after having been neglected in the 1980s, agriculture found itself once again centre stage in the light of the 2008 food crisis. As it is more and more widely accepted that conflict, rather than insufficient food production, is the main cause of malnutrition and hunger in the world, a geopolitical approach to agriculture appears to be increasingly relevant.

Based on these observations, Pierre Blanc has sought to explore the geopolitical facet of agriculture (Blanc 2018, Purseigle *et al.* 2017). He started by analysing the development of geopolitical science itself, highlighting how it has changed from how geography serves power

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<sup>1</sup> Translated from the French.



to the geography of rivalries between powers (Blanc 2012, 2017). Geopolitics emerged at the end of the 19<sup>th</sup> century, when political geography perceived land as an object to be controlled. Pierre Blanc supports this view in the light of contributions by Friedrich Ratzel, Karl Haushofer, Alfred Mahan, Rudolf Kjellen and Carl Schmitt in which agriculture proved to be essential. This was highlighted for instance in the concept of living space – *Lebensraum* – developed by Friedrich Ratzel (Ratzel 1988), which contributed to justifying Nazi Germany's territorial expansion into countries such as Ukraine, a major cereal producer. Pierre Blanc (2017) also highlights Carl Schmitt's contribution during the Second World War, when he conceptualised the end of states as sole geographical areas and their advent as areas of domination (Schmitt 2001).

A new approach to geopolitical science then appeared, more remote from political power and more academic; Pierre Blanc articulates this with agricultural matters (Blanc 2012, 2017). Particular emphasis is placed on physical geography as a decisive element in how a state projects itself outside its territory, as illustrated by Pierre-Marie Gallois (1990) and Saul Cohen (1964). Pierre Blanc (2017) also quotes Robert Kaplan, pointing out how globalisation often ignores such geographical considerations, despite their relevance (Kaplan 2014). Finally, Yves Lacoste contributed to the development of geopolitical science by focusing less on the state, a prominent actor in international relations, and more on the dimension of conflict, allowing him to take infra-state actors into account. To Pierre Blanc, Yves Lacoste therefore highlighted the fact that in rivalries between powers over territories, conflicts are determined less by physical geography or historical perceptions than by how these are represented by those in conflict. In this light, Yves Lacoste reformed French geopolitics, producing analysis that first aimed to understand these representations. Pierre Blanc sees these various new approaches to geopolitical science as complementary, particularly where agriculture and food are concerned. Indeed, agriculture, closely linked to land, is at the core of politics, since a state's security also relies on its ability to guarantee food supplies for its population – a fact that remains valid today despite the globalisation of the food industry. According to Yves Lacoste, agriculture, by virtue of its numerous functions – obviously food-related, but also political, social and economic (Bonneuil 2000, Brondeau 2011, Cabalion 2014) – is at the heart of power balances at every scale from local to global. Moreover, geopolitics is also involved when power struggles do relate directly to agricultural matters, for instance in the resistance mechanisms,

sometimes including violence, developed by peasant farmers when their land resource is affected.

Agriculture can thus be approached in other ways than through geo-economy, in which Edward Luttwak, writing in the 1980s, described the continuation of war using economic tools such as subventions and tariff protection. This is illustrated for instance by the inclusion of agricultural issues in the last round of the GATT (General Agreement on Tariffs and Trade), which led to the creation of the World Trade Organisation (WTO). Indeed, within the WTO, agriculture appears to be increasingly structured by power relationships and conflicts, which can be related to the new concepts of food security and sovereignty at the heart of new state strategies (Pouch 2012). While food security does not appear to be mutually exclusive with economic liberalisation, the concept of food sovereignty that emerged in the 1990s is. Indeed, liberalisation led countries whose domestic production was not competitive enough in world trade terms to rely on imports in order to ensure their food security, leading them to become dependent on the markets. Food sovereignty should be seen as a political concept and viewed from a national rather than an international perspective, with agriculture as a primary function of the state (Pouch 2012: 60-61). The renewal of interest in food sovereignty also appears to relate not only to legitimate governments and states, but also more broadly to some countries' ability, at the international level, to influence the world order through their food exports (Lançon 2012, Jamin 2008). This control, described as a food weapon, fully demonstrates the reality of the contemporary geopolitics of agriculture. In this sense, the dominant theories, such as comparative advantage, have shown their limits. Meanwhile, agriculture and food issues shed light on power struggles in a changing, multipolar world, which produces unprecedented levels of wealth and food on the one hand, and poverty and hunger on the other. Sébastien Abis and Pierre Blanc (2012) consider that hunger and rural exclusion are two significant, explosive processes that highlight the geopolitical nature of agriculture. Moreover, they consider that these trends will be exacerbated in the context of the growing world population and the climate crisis. In some regions, the consequences are expected to be of major geopolitical importance, with agriculture and rural populations being affected first.

These agricultural trends thus accompany the return of resource geopolitics. For instance, water, considered as a major issue for the 21<sup>st</sup> century, is above all related to agriculture, and should therefore be approached from the angle of food insecurity. On the one hand, while irrigated cultivation produces half of the world's food today, the climate crisis will further impact regions already lacking water. The irrigation question – and more particularly its geopolitical aspect i.e. its potential to generate conflict – thus appears to be significant. On the other hand, cultivable land is both unequally distributed throughout the world and limited. The contemporary dynamics of large-scale land acquisition by international actors such as states or multinational companies, illustrate the increasing, and unequal, competition for land. Nevertheless, this should not lead us to neglect the symbolic dimension of resources such as water or land, which tends to be missed with a purely economic framework. Indeed, the attractiveness of a territory cannot be assessed only in rational economic terms, but more broadly, for example, as a set of representations related to history, culture and religion (Charvet & Sivignon 2014). Finally, in the light of these observations, it appears that an approach based on power and struggles to achieve it can provide an accurate, relevant reference framework for the realities of agriculture and food. Questions such as whether the world can feed its population lead to the development of many scenarios and models, which might however lack sense if they are not also grounded in geopolitics. In this light, the better question might not be whether we are able to feed the world's population, but rather whether we are politically willing to do so (Dufumier 2014).

Indeed, while the growing global population and the climate crisis justifiably raise considerable questions, these processes illustrate how technologically-orientated analyses are often preferred, to the detriment of an understanding of strategies relating to power. As pointed out by Josué de Castro (1952), overpopulation does not lead to hunger, but hunger rather leads to overpopulation. This author thus highlights the role that must be played by the redistribution of natural and technical resources in order to deal with food insecurity. This appears to be highly challenging, in the already existing context of acute competition for water, land and energy. In this light, understanding the geopolitical dimension of agricultural and food questions is not only relevant, but essential. This thesis contributes to providing such an understanding.

Our research subject is 600-800 hectares irrigation schemes located in Uganda where the return to public involvement in irrigation takes the form of reviving existing, and promoting new irrigation schemes, in the name of “development”, to enable rural areas to deal with climate instability. This adds another layer of originality to our approach, since there are few geopolitical analyses of technological solutions to agricultural issues, here represented by the choice of government-led schemes (Griffon 2012). However, studying irrigation schemes calls for an approach that not only explores the geopolitical dimension of irrigation, but also the public development plans that constitute the vehicles for the agricultural technology being promoted. Indeed, the schemes are products of a particular land-use planning model, which needs to be questioned. One of its particular characteristics is that it brings into the same confrontation zone a multiplicity of actors, logics and processes, developing at different levels. However, an analysis based on agricultural geopolitics alone cannot easily encompass such a diversity of multi-levelled processes. Indeed, in his book focusing on power, land and water in the Middle-East (2012), Pierre Blanc outlines the main geopolitical functions of irrigation. It is worth noting that the technology he studies tends to refer to large-scale irrigation, usually understood in terms of onerous development planning which requires the public authorities to organise and supervise the infrastructure. In the Middle-East, such projects have become deeply enmeshed in state development. Consequently, the geopolitical functions that Pierre Blanc identifies are seen from the viewpoint of the state and conflict, for example the manner in which irrigation can become, for the ruling authorities, a cause of political (in)stability, a tool helping to provide legitimacy or significant influence or, on the contrary a means to exclude some regions by not promoting it. Moreover, cultivable land and irrigation are also geopolitical functions inasmuch as such resources and technologies feed into balances of power, involving various state actors.

However, as noted by Julie Trottier (2004), the social sphere of water is not a Hobbesian environment in which power balances involve high-level actors, such as states, alone. She points out that internal geopolitics should not be ignored, since the importance of groups – irrigators, locally based producers or villages for instance – aiming to obtain access to water resources is significant. Pierre Blanc also highlights the importance of internal geopolitics, as he concludes by considering that particular attention should be paid to such analysis in research into irrigation politics. Indeed, there are few studies of the geopolitics of irrigation,

and most of them approach irrigation from the viewpoint of state strategies, often in the context of arid countries such as those in the Middle-East, in which control over water is indeed a factor creating a high degree of tension between states. Consequently, studying the geopolitics of irrigation schemes in Uganda called for a new geopolitical approach that takes into account these “internal geopolitics”, more relevant to highlighting the diversity of actors, logics and strategies in irrigation.

This appears to be of particular interest since, during the last two decades, many countries have shown a renewal of interest in irrigated agriculture, in order to reduce food dependency. This revival of the trend towards irrigation is closely linked to the “Green Revolution”, emerging over the same period in the context of a paradigm of modernisation, in which technology transfer plays a leading role (Cornilleau & Joly 2014). In Asia, this was directly related to the transformation of irrigation to an industrialised and technocratic mode of production (Torretti 2017). In the growing development sector, irrigation has to some extent taken the form of government-led schemes, as previously defined: technocratic, top-imposed, based on intensive agrarian practices, and enabled thanks to large-scale infrastructure intended to introduce technical management of land and water wherever it was implemented. However, as shown by contributions from development studies and geography, there are significant gaps between the official objectives and the actual impacts on the ground.

## 1.2. The contribution of development studies: going beyond the “peasantry” and the “state”

Rural development studies appeared with colonialism, of which land development was a major policy – “development” has thus been interwoven with the issue of land since then (Le Roy *et al.* 2016). In this thesis, the study of irrigation schemes also contributes to some extent to development studies, as we highlight logics that can be found behind the concept of “development” – a rather polysemic or portmanteau term. By exploring development projects – in this case irrigation schemes – from their conception at the highest levels to their appropriation at the local level, our analysis reflects Gilbert Rist’s sociological definition of “development”:

“Development” consists of a set of practices, sometimes appearing to conflict with one another, which require – for the reproduction of society – the general transformation and destruction of the natural environment and of social relations. Its aim is to increase the production of commodities (goods and services) geared, by way of exchange, to effective demand. (Rist 2013: 13)

Nevertheless, the contribution of development studies to our research is not limited to the definition of the “development” concept, also including various topics that were explored in the field, which we will briefly address.

Historically, rural development, understood as an ideology and an institutional arrangement, appeared with colonialism. On the one hand, territories were often indirectly administered, providing the opportunity for indigenous institutions to reinvent themselves, including with respect to the significant issue of land. This has been a focus for anthropologists, particularly from the 1930s (Schumaker 2001). On the other hand, the ideology of rural development created categories which were to become the normative frameworks of the development sector, that anthropologists and sociologists would later inherit – categories such as the village, community, peasantry, urban/rural areas or formal/informal (Chauveau 1994, Scott 1998). Indeed, with the advent of modernisation as a paradigm after the Second World War, the technocratic approach became predominant, reducing the contribution of social sciences to the development sector. In formerly colonised countries, the new developmentalist states focused on the development of infrastructure and planning. Irrigation schemes spread, especially in Sahelian Africa where they represented unprecedented technology, crops and land-use. Wet lowlands were thus particularly targeted by policies aiming to transform them: many were thus drained at this period in order to introduce new crops, such as rice, vegetables or fruit (Lavigne Delville & Camphuis 1998). The productive objectives were then the extension of cultivable land, and the securing of production through irrigation and other intensive practices, in a context of population growth and recurrent droughts (Berton 1988).

However, in the 1980s the contribution of anthropology and sociology became of renewed interest in debates about “development”. While agriculture and rural development were not initially part of their focus, due to the dominance of agronomists and economists in the 1960s and 1970s, such topics attracted renewed interest in the light of the failure of many development programmes to achieve their stated objectives. Indeed, the mixed results of the

“Green Revolution” led to awareness of the complexity of introducing technical innovations. Coupled with the failures of structural adjustment plans, which ended a comprehensive approach in rural development prevailing in the 1970s (Cernea 1991), this resulted in anthropologists and sociologists taking a renewed interest in local agrarian knowledge and practices, and their return to the development sector as experts (Olivier de Sardan 1995, Chauveau *et al.* 1999). In Sub-Saharan Africa, for example, structural adjustment plans led to the abandonment or privatisation of the irrigation schemes implemented mostly in the 1960s and 1970s, the latter being considered too costly in view of their lack of productive achievements (Torretti 2017).

The importance of applying a historical perspective to such understanding was quickly highlighted (Cochet 2011). The prevailing technical reductionism was slowly abandoned, reinforcing the shift in development studies from the solely technical perspective to include a social dimension. Significant studies conducted in the 1980s (Coward 1980, Uphoff *et al.* 1985) highlighted the essential role of infrastructure maintenance, conflict management and water allocation in optimally self-managing irrigation systems. These analyses were then explored in depth in the work of Elinor Ostrom. By studying how sustainable institutions manage natural resources, she developed the concept of common pool resources and institutional characteristics that make possible sustainable governance (Ostrom 1990). In this way, collective management of irrigation systems does not appear as an intuitive system, but rather the result of an ongoing, inflexible process, which needs to be constantly stimulated (Ostrom 1992). This, alongside studies focusing on the land-related issues inherent to irrigation as a land-use planning model (Bouju 1998, Lavigne Delville *et al.* 2000), sheds light on the perceived failure of irrigation schemes previously introduced in Sub-Saharan Africa. Indeed, highlighting the importance of strong social structures, studied in indigenous irrigation systems, indirectly points out the disconnected nature of the externally-driven development projects on the one hand. On the other hand, these studies demonstrate the complexity of indigenous practices and institutions, which have often been reduced to homogenous categories such as “peasants” or “local communities”, therefore requiring an in-depth understanding of the bottom end of the scale.

This need has been increasingly emphasised since then in various topics explored in rural development studies, to which this thesis also contributes. Pierre-Yves Le Meur and Philippe Lavigne Delville identify four main topics prevailing in the field (2009). The first continues to explore how populations and societies are integrated at higher economic and political levels, both by studying new subjects and re-examining old ones in more detail. There is thus a particular focus on “forms of integration of the state, market penetration and globalisation of the flows of people, resources and ideas”<sup>2</sup> (Le Meur & Lavigne Delville 2009: 81)<sup>3</sup>. A second topic questions the relationship to the natural environment and its resources, increasingly explored in the context of growing environmental concerns and the climate crisis<sup>4</sup>. Another topic focuses on indigenous knowledge in relation to agrarian practices and natural resource management. This topic focuses in particular on how development projects can influence local practices and know-how and their visibility, as demonstrated in a major contribution by James Scott. This author for instance highlights the fact that “formal schemes or orders are untenable without some elements of the practical knowledge that they tend to dismiss” (Scott 1998: 7)<sup>5</sup>. Lastly, a fourth topic analyses development action itself, which is described by Jean-Pierre Olivier de Sardan as an approach involving the interweaving of social logics<sup>6</sup> (Olivier de Sardan 2001). The political microsociology of “development” generated by such approaches is thus focused on one project’s daily life (Bierschenk 1988), resolutely empirically-based and exploring actions, discourses and actors’ representations in order to go beyond a simple impact assessment. Among other things, this sheds light on the dynamics of re-appropriation of development projects by various actors, as well as widening the analysis to strategies of legitimisation, instrumentalisation, co-construction and contradiction between the project and rural politics. This is for instance illustrated by the 23 articles compiled in the double issue of the French review *Cahiers Agricultures* (Jamin *et al.* 2011), dedicated to the issues of contemporary irrigated agriculture.

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<sup>2</sup> Translated from the French.

<sup>3</sup> See for instance Ferguson 1994, Bayart 2004, Mosse 2005, Moore 2000, Agrawal 2005.

<sup>4</sup> See for instance Chauveau & Richards 2008, Lund 2008, or Kohn 2013, Haraway 2016 about the present debate on the Anthropocene.

<sup>5</sup> See for instance Pottier *et al.* 2003 or Bicker *et al.* 2004.

<sup>6</sup> Translated from the French.



Finally, irrigation schemes have been studied in geography, as objects representing a model of land-use planning. Indeed, development of land by public authorities is a topic that has been increasingly explored in geography, especially since the 1950s when countries affected by the Second World War were focusing on both reconstruction and modernisation. In France, some geographers thus decided to develop the field of land-use planning, in order to provide the state apparatus with applied analysis dedicated to land-use planning perspectives and issues (Charvet & Sivignon 2014). The comparison of irrigation schemes, studied as development projects, with the areas in which they are implemented has therefore been explored in the light of territorial construction and state spatialisation strategy. In geography, territories are indeed considered as social constructions (Lefebvre 1974, Di Méo 1994), produced through a process of territorialisation. The latter is usually characterised in social geography by the formation of new and specific organisations and structures, over a given geographical area, by a social group (Ghiotti 2007). The contribution made by Pierpaoli Faggi (1990) is interesting with respect to our research, as he describes a process he defines as “hydraulic territorialisation”, which highlights the strategic dimension of irrigation schemes. According to Pierpaoli Faggi, the hydraulic territorialisation created by irrigation schemes in the Sudan-Sahel African region results from two distinct logics. One is productive, for instance illustrated by objectives formulated in terms of volume of food production. The second, often represented by an underlying political agenda, is dictated by issues of population and territorial capture by the state power. Pierpaoli Faggi used this theoretical framework to describe hydraulic territorialisation in Sahelian Africa, which started particularly in the 1960s with the introduction of large-scale irrigation schemes (Faggi 1990, Faggi & Mozzi 2000). Other geographers have developed his research (Zoungrana *et al.* 2003, Bertocin & Pase 2012).

While the concept of hydraulic territorialisation offers a framework to analyse the confrontation between indigenous orders and models imposed by the state and/or the dominant international paradigms, this focuses the analysis mostly on the role played by the state. Indeed, exploring irrigation schemes with a geographical, land-use planning approach tends to occult processes and logics not directly related to the public authorities, which are the main actors behind the schemes. Moreover, in the context of former colonised countries, new governments in the 1960s were facing significant legitimacy issues to which they responded by launching numerous development programmes. Consequently, studying the

strategic issues relating to irrigation schemes in terms of territorial construction mainly highlights state spatialisation strategies that try to increase authority by obtaining control over populations and land, and how this shaped water-dominated landscapes. This limits the analyses of state strategies to issues materialised in irrigation schemes, leaving out those that might be found at the highest level in the creation of such public policy and its implementation, while it implies a rather homogenous perception of the state as a single actor. Therefore, while irrigation and irrigation schemes have been explored in development studies or in geography, none of these approaches allows us to analyse the strategic issues related to these development projects in a manner that appreciates the complexity of actors, logic and strategies that can be encountered in both high- and low-level perspectives, and which will be defined in the methodology section.

In this thesis, we aim, however, to study irrigation schemes while avoiding reductionism with respect to categories of peasantry – as often found in top-level studies – or with respect to the state – more often encountered in studies exploring low-level dynamics. This calls for a new geopolitical approach to irrigation schemes, on the one hand taking into account both their agricultural and technological characteristics, and on the other allowing us to study their strategic dimension from their conception at the top to their impacts at the lowest level.

### 1.3. Beyond the traditional geopolitical approaches and traditional fields of irrigation studies

In order to produce a comprehensive geopolitical analysis of irrigation schemes, taking into account the diversity of actors who may be involved thus appears essential. Moreover, while various authors have pointed out that irrigation schemes can be tools to either legitimise the power of newly independent states, or to further consolidate such power by imposing the state's materialisation of land, it appears equally essential to think about the deployment of such domination strategies from both low- and high-level perspectives. Indeed, by studying the asymmetric power balance from the sole viewpoint of state-building, we tend to lose sight of a global and more comprehensive approach to strategic logics in irrigation schemes. As shown by Pierre Blanc and Pierpaoli Faggi for example, strategic issues for high-level actors are indeed significant in the geopolitics of irrigation. However, to fully analyse the extent of

such logics, it is also necessary to understand what they actually mean at the lowest level. In other words, to understand the geopolitics of irrigation, we need to study processes from the perspective of high-level actors, also taking into account the strategic dimension of scheme design, but also from the perspective of the people for whom this public action is intended. Looking at such a strategy from the lowest level as well as from the top should provide a qualitatively more accurate analysis of social order by focusing the analysis on “internal geopolitics”.

This directly resonates with the work of James Scott, according to whom studying power logics from the sole perspective of the dominant actor leads one to explore narratives about the logics serving its interests. Moreover, according to James Scott, researchers tend to think that subjected people merely resist domination. This would be due to the influence of what he calls the public transcript, meaning what is publicly said about power logics, corresponding to a self-portrait of dominant elites as they wish to be considered (Scott 1990). However, more complex relationships between the state and people involved with the irrigation schemes could be explored by adopting a lower-level as well as a high-level perspective. In this light, we need to consider processes carried out by lower-level actors not only in terms of adaptation, deployed in reaction to an imposed development project, but also in terms of strategic logics and power balances. The affected people may thus demonstrate coping mechanisms not only out of necessity, but also as actors instrumentalising the schemes in accordance with logics relating to power balances. The latter can refer not only to the relationship between scheme users and the state and its decentralised agencies, but also between different categories of scheme users and between them and people excluded from accessing and using the scheme. In a similar way, power balances should be explored at the highest level as well. Far from considering the state as a homogeneous entity sharing the same logics and interests, irrigation schemes can represent an entry point to understanding power struggles at the highest level, and how they influence scheme design and implementation.

This allows us to understand strategic logics in a more complex fashion than, for instance, the classic confrontation between “state” and “peasantry”. It links together diversity of actors, logics and processes, situated, and interacting with each other, at multiple levels. This goes beyond the usual limits of geopolitical science, often focusing on state and infra-state actors

– thus eliminating the importance of the lowest level – and which often focuses on conflict, usually in terms of physical violence. Such a geopolitical approach to land-use planning has not been much developed until very recently. The most significant contribution to the exploration of this field is provided by research conducted at the French Institute of Geopolitics (Institut Français de Géopolitique, University of Paris Saint-Denis), and more particularly by Philippe Subra. By studying land development schemes in France, and to a lesser extent in its neighbouring countries, he has conceptualised a new geopolitical approach to analyse how internal geopolitical factors play a major role in the way that populations are increasingly questioning land development schemes. Indeed, since the 1970s, opposition to land-use plans has grown in France for various reasons: the rising awareness of environmental issues, decentralisation policies that have empowered intermediate-level political actors and the end of the social consensus regarding what should be done by a rather interventionist central power in terms of electrification or infrastructure development (Subra 2008, 2018). Based on these observations, Philippe Subra has produced a theoretical model of “local geopolitics” to analyse and understand this land-use planning crisis (Subra 2016).

The relevance of talking about local geopolitics is not obvious at first sight. While geopolitics usually refers to conflicts, if not war, and is analysed at state level, the politics of land-use plans – implemented at the local level – were initially dealt with by the technical field<sup>7</sup>. In the context of post-war reconstruction in the 1950s and 1960s, this led to a generally technocratic approach to land development, eliminating the political dimension at the local level. This trend is also encountered in countries in the Global South, in which the influence of the dominant know-how and paradigms of the Global Northern countries is significant. As far as irrigation schemes are concerned, for example, Marina Bertoincin and Andrea Pase (2012) analysed how their failure to achieve the stated production objectives was caused by the external, technocratic vision imposed on local regions, considering the latter as under-used space until

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<sup>7</sup> As Philippe Subra has observed, the politics of land-use planning were indeed “traditionally” a matter for technicians, “in charge of practically the whole process, from the initial decision to introduce a planning approach to individual tenders: (...) the implementation of regional development policies (...): diagnosis of the region’s problems, planning of development operations (...), design and negotiation of the legal and financial package, and, finally, overseeing these same development operations and the management of facilities and infrastructure” (Subra 2016: 5, translated from the French).

“modern schemes” could develop them. Moreover, they pointed out that this lack of awareness remained prevalent due to the practices and norms of the development sector, in which territories are approached from high-level perspectives in technocratic terms, by drawing up many positive and reassuring pre-feasibility and feasibility studies. On the contrary, any risks are presented as either negligible or manageable, with data reporting local realities before implementation usually being incomplete and superficial.

To Philippe Subra, land-use planning, to which local opposition has been on the rise in France since the 1970s, thus has a geopolitical dimension in the sense that the main issue lies in how space is used – and, therefore, in control over land. Local geopolitics can thus be considered as a kind of “soft” geopolitics, characterised by a lower level of violence and mediatisation than when it is focused on international conflicts for instance, but which is not less geopolitical (Subra 2016). Indeed, following on from Yves Lacoste’s updating of geopolitical science, power balances over territories thus remain the core of the analysis.

This approach allows us to think of irrigation schemes as geopolitical objects, despite the absence of conflicts seen in the implementation of irrigation schemes in Sub-Saharan Africa, including Uganda. Indeed, this can be interpreted as a demonstration of such power asymmetry between states and populations that the latter would rather not enter into open conflict, thus allowing the dominant actor to impose its schemes. This has been pointed out in relation to irrigation scheme implementation in Sahelian Africa for instance, where Marina Bertoncin and Andrea Pase have demonstrated high, and multiple, levels of power asymmetry in such projects in Chad:

The strong actors, external and/or internal, those who have implemented and managed major irrigation projects, as bearers of heterocentric ideas and in reality foreigners, make alliances (horizontal relationship) and impose themselves on local actors (vertical relationship) taking advantage of areas of uncertainty (...) With respect to the social, economic and political power that those behind big projects were able to exercise, they interpreted the history of agriculture in the area according to their own rules and developed a territory marked by an overwhelming relational asymmetry with the weaker actors. (...) Local society (...) is unable to impose its social, economic and political norms, or at least have them recognised and thus there is confrontations in the seats of regional planning.<sup>8</sup> (Bertoncin & Pase 2012: 131)

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<sup>8</sup> Translated from the French.

Viewed in this light, the absence of conflict can be an object of geopolitical study as much as conflict itself, as such absence results from a highly unequal balance of power rather than from consensus. Finally, this highlights the importance accorded to actors, their logics and strategies in local geopolitics, on which we will thus focus in our methodology.

## 1.4. Research question and hypotheses

The geopolitical dimension of agriculture, and the relevance of analysing irrigation schemes are, therefore, at the centre of our analysis. Given the importance of irrigation in terms of production, and in the context of the on-going climate crisis, such analysis appears even more essential and relevant. Indeed, while concepts such as food sovereignty are coming back to the forefront, especially after the 2008 world crisis, there remain few geopolitical studies of agricultural questions, and even fewer geopolitical studies of the agricultural technology of irrigation. Indeed, the latter have generally been explored from the perspective of development studies or geography, thus tending to produce an incomplete understanding of the development politics of irrigation schemes. In this thesis, we thus aim to analyse the geopolitical dimension of irrigation schemes in Uganda, beyond the usual focus on international and conflict dynamics, and beyond the normative categories of “state” and “peasantry”. These are the original features of our general approach to irrigation. We thus aim to link low-level and high-level perspectives, in order to obtain an accurate understanding of the strategic logics deployed by actors situated at various levels. In this way, we provide an original, in-depth understanding of contemporary irrigation schemes, from the issues at stake during their conception to the impacts they have once implemented.

Consequently, our approach questions the political willingness to return to irrigation schemes, seemingly following the same model that was used in the 1960s and 1970s – a design which led authors to qualify the schemes as “mastodons, onerous, with little or no efficiency”<sup>9</sup> (Bertoncin & Pase 2012: 137). With respect to the very high levels of investment they required and their failure to achieve their stated production objectives – that are still valid today if they have not become even higher – it seems to be essential to understand the strategic issues at

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<sup>9</sup> Translated from the French.

stake, in a contemporary context of unprecedented pressure on agriculture and resources, as previously described. With this in mind, this thesis therefore seeks to answer the following question: In Uganda, **how do strategic logics contribute to contemporary irrigation schemes' design, implementation and appropriation?**

This question allows us to explore the geopolitics of irrigation not only by studying how strategic logics shape public action in such schemes, but also how their implementation brings advantages and disadvantages to regions at the local scale. Furthermore, this allows us to take into account a cluster of practices thanks to the complexity and diversity of actors, logics and strategies thus explored. From these statements, we can assume two main hypotheses:

- 1/ At the local level, implementing irrigation schemes remains a disruptive process nowadays, out of which coping mechanisms appear in the context of distorted social order. These reflect strategies guided by ever-increasing competition for access to and use of natural resources, whose exploitation is linked to booming cash crops such as rice.
- 2/ At the state level, the return of technocratic, onerous irrigation schemes contributes to state-building and the political survival of the ruling coalition, not only through the state's spatialisation strategy, but also by integrating public action for irrigation into patronage and clientelist networks.

This research question and the associated hypotheses called for a general approach to irrigation schemes through the identification and analysis of the actors involved, their logics and strategies, as well as an answer in two parts, each one testing each hypothesis and requiring a particular methodological approach.

## 2. METHODOLOGY

In order to answer the research question, low- and high-level perspectives are thus explored in two parts, each one testing a hypothesis. In this sense, the two parts appear as complementary facets, both required to provide accurate and qualitatively comprehensive understanding of the strategic logics at stake in contemporary Ugandan irrigation schemes. We have thus linked together various level of analysis through general concepts used

throughout this research, in the form of questions forming the underlying theme of our general field: who are the actors involved with irrigation schemes? What are their logics? Which strategies do they deploy?

## 2.1. Actors, logics and strategies as methodological tools

As we have previously mentioned, in our general approach focus was given to actors, logics and strategies, thus following the theoretical framework of local geopolitics developed by Phillippe Subra. Unlike in more traditional geopolitical studies, in which state actors are prominent, in the geopolitics of land-use planning actors are characterised by their number and diversity: not only do state actors play a significant role, with various ministries and national authority involved, but also decentralised agencies, consultants and construction companies, local politicians or associations of local users and/or groups of opponents to the project for instance. In the Ugandan context, we must also take into consideration international financial organisations, Non-Governmental Organisations (NGO), and cooperation agencies for example. Such diversity imposed a rather broad definition of what is considered as an actor in this geopolitical approach. Philippe Subra proposes that in such a study an actor should be defined as any legal entity or natural person who acts in the context of a given territory or territorial conflict: in other words, the course of action makes the actor (Subra 2016). In this sense, irrigation schemes are the underlying theme of our methodology, from which we have identified the actors involved in the Ugandan geopolitics of irrigation.

Such diversity of actors leads to another essential observation. Again, unlike in traditional geopolitical studies, in which actors aim to control land legally or militarily, having their sovereignty over it internationally recognised, in the geopolitics of land-use planning not all actors have such similar logic. Controlling an area such as an irrigation scheme means controlling how the area is *used*. Use leads to control, and control allows certain uses to dominate to the detriment of others. Indeed, in land-use planning various uses often co-exist or compete with one another. This is directly linked to a diversity of actors reflecting a certain diversity in their logics as well, which need to be explored, and their confrontation analysed. Indeed, economic, patrimonial, political and environmentally-friendly logics can for instance be found in competition for the same territory. An actor's logic could thus be defined by the



combination of its interests, goals, practices, culture and representations, from which its strategy results (Subra 2016). In our thesis, actors' culture can also refer to their professional environment in the case of public authorities, companies or institutions. For instance, understanding the strategic logics of the Uganda Ministry of Water and Environment (MWE) cannot ignore the way that engineering dominates the Water for Production Department, while the National Environment Management Authority (NEMA), established as a result of a process of greening politics, cannot be analysed without taking into consideration the prominence of the conservationist paradigm in its organisation. The role of such cultures is not only to legitimise their actions in the public domain, but also to produce cohesion within the body as well as reinforcing the consistency of the strategies it deploys.

Together, the actors involved in irrigation schemes thus form a system in the sense that they interact with each other through more or less conscious strategies. The latter stem from each actor's fundamental interests, influenced by its representations, and can be formulated in terms of goals that the actor aims to reach through various actions (Subra 2016). Understanding the system of actors connected with irrigation schemes in Uganda thus leads to the identification of such actors, and their characterisation in terms of their interests, goals, strategies, representations and relationship to the area transformed by an irrigation scheme. It also leads to an understanding of what kind of relationship they have to each other, as well as the issues that bind them together, and, finally, the power balances involved. This methodology implies approaching irrigation schemes by linking together the low-level and high-level perspectives, in the light of various contributions from geography and development studies.

Finally, it is important to note the major role played by representations (Claval 2010), defined as the combination of various ideas allowing an actor to apprehend reality, or share its approach to reality with other actors and with civil society. Some representations are thus inherited and unconscious, constituting an ideological framework in which an actor is situated. Other representations are, on the contrary, the product of conscious social construction, and thus serve strategies. Their success can then be assessed in the light of how they are perceived in the public domain not as representations, but rather as truths, obvious facts – becoming therefore unconscious representations – a process which has also been at the heart of many

analyses in Science and Technology Studies (STS). In geopolitical analysis, representations must thus be considered not as truths, but as ideas contributing to power balances: for instance, in the context of a general return to irrigation, we will especially focus on understanding which social construct resulted in irrigation schemes being considered in the public domain as a solution to adapt to climate change. Deconstructing what was obvious led us to explore various vehicles for representations, such as life stories, discourses, narratives or paradigms, in order to better understand the system of actors involved in irrigation schemes in Uganda.

## 2.2. The research process: an empirically inductive methodology

In order to analyse the actors, their logics and strategies in relation to irrigation schemes, we chose an empirically inductive methodological approach. In this sense, we decided not to base our approach on theory. Rather, our approach was guided by a first research question, elaborated in the light of six-months' fieldwork conducted in 2014 for our master's thesis in the field of Engineering of International Agri-development, coupled with a literature review and another short stay in Uganda in March and April 2015. This research question then changed step by step, in the light of several periods of fieldwork conducted while living in Uganda from January 2016 to June 2018: first in the Olweny swamps from March to April 2016, then in Agoro sub-county from August to December 2016, and lastly in Kampala city from September to December 2017.

We thus initially designed a research plan that was submitted in order to benefit from a three-year doctoral contract, which started in September 2015. In this proposal, we aimed to acquire a general understanding of phenomena and to formulate hypotheses. In this type of qualitative approach, data are considered as elements of reality, whose collection by the researcher objectifies them (Olivier de Sardan 1995). This methodology implies going back and forth many times between theory and empirical material in order to work on the research question. We thus resolutely attempted as far as possible to ground our analysis in the field, following the key idea of Grounded Theory developed by Barney Glaser and Anselm Strauss (1967). In this sense, we aimed to approach fieldwork without over-constraining theoretical

reference frameworks drawn up beforehand and, potentially, preventing the researcher from accurately analysing unexpected situations by relying on her own judgment. Moreover, this also implied that the researcher should be able to conceptualise unlikely possibilities (Becker 2002). Sampling is thus theoretical, as our case study should above all contribute to improving the theoretical framework used to apprehend reality, rather than being statistically representative. In Uganda, the reality we have explored is the strategic logics involved in contemporary irrigation schemes. Such case studies cannot be considered to be representative of the global return to irrigation schemes, nor do they aim to be. However, they provide a better grasp of the realities of such phenomena through their original contribution to the general theoretical framework used in traditional approaches to geopolitics and irrigation. We thus tried to remain open to discoveries made in the field, which had not always been previously anticipated (Bryman & Burgess 1994). The general research process has thus been an iterative one (Olivier de Sardan 1995). Indeed, the course of our investigations shows the prominent role played by successive findings in the field, which considerably influenced the research process.

Our research approach was developed initially after a six-month fieldwork period, in which we questioned how a population can adopt an irrigation scheme in a post-war context, with the Ugandan Olweny irrigation scheme as a case study. This work was part of a wider research programme called "Of Lands and Waters", funded by the French National Research Agency (Agence Nationale de la Recherche) under the supervision of Prof. Julie Trottier, and aiming to link studies of land and water. One of the main focuses of the research programme was thus to explore the mechanisms by which peasant farmers and agricultural production coped with global changes, such as the climate crisis, migration, or war for instance. In Uganda, located at the cross-roads between the Horn of Africa and the Great Lakes region, irrigation technology was hardly used before the implementation of the first irrigation schemes by a Chinese technical cooperation team in the 1960s. Four irrigation projects were initiated at that time and were implemented to varying degrees: the Kibimba and Doho irrigation schemes in the south and east of the country, established by the Chinese technical cooperation team, and the Mubuku (west) and Agoro (north) irrigation schemes, also subject to the Chinese influence of the period. The Olweny irrigation scheme (north), although initially designed by the Chinese technical cooperation team, was only implemented later, in 1999-2000, after nearly two

decades of stop and go and several re-designs. It is important to note that in this thesis, we chose to arbitrarily limit the scope of our focus to irrigation schemes covering at least 500 hectares. Indeed, since our aim is to explore balances of power at multiple levels, we argue that focusing on schemes that cover a certain minimum area favours highlighting the diversity of the actors, logics and strategies involved as site coverage is significant.



Map 1: Location of the first irrigation schemes in Uganda (Alfaut 2018)

Nevertheless, it appeared during the research conducted in 2014 that the political history of Uganda significantly influenced the spread, collapse and, finally, the recent revival of the irrigation schemes initiated under the FIEFOC (Farm Income Enhancement and Forest Conservation) programme in 2008. The first irrigation schemes in the 1960s were the result

of, on the one hand, the influence of the “Green Revolution” used by China to deploy soft power abroad and, on the other hand, the launch of many state programmes in newly independent Uganda to develop infrastructure (Torretti 2017). However, internal politics quickly led to a state crisis when in 1966, the socialist northerner Milton Obote, in power since Independence in 1962, changed the Constitution and declared himself President for life. The coup d’état carried out by Idi Amin Dada in 1971 was the start of an era marked by escalating violence and economic crisis, during which the management of the 1960s irrigation projects collapsed. Eight years later, when Idi Amin was overthrown by the Tanzanian army, the reinstatement of Obote as President after allegedly rigged elections sparked off a new conflict, the Bush War, characterised by guerrilla rebel movements seeking to take power. Finally, in 1986, southerner Yoweri Museveni took the capital, Kampala, and has remained President of Uganda ever since. While he initiated state reconstruction, introducing a new Constitution and embracing a neoliberal path by means of structural adjustment plans, war nevertheless began in the northern sub-regions from 1986 to 2006, opposing the rebel Lord’s Resistance Army (LRA) and Museveni’s government<sup>10</sup>. The manner in which this war affected the implementation of the Olweny irrigation scheme in 1999-2000, in particular preventing the local population from adopting the scheme in the intended way, was one of the main subjects analysed in the research conducted in 2014 (Torretti 2014).

However, a short stay in Uganda in March and April 2015, during which we conducted interviews with key persons, illustrated significant political issues relating to the rehabilitation process of the Olweny and Agoro schemes, leading us to question the relevance of focusing only on the local level<sup>11</sup>. Indeed, while highly disputed land titling processes showed a significant level of corruption and the importance of control of land at the highest level, the schemes’ rehabilitation process only raised further questions regarding the underlying strategic motives. We thus designed a research plan to explore irrigation schemes through local coping mechanisms, including a last fieldwork period in the capital, Kampala, in order to obtain a general picture of the high-level issues involved. This bottom-up approach significantly influenced the research process. The literature review highlighted the need to

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<sup>10</sup> See in annex the chronology of major events in Uganda.

<sup>11</sup> Seen in annex the list of interviewed people and questionnaires used in this research.

deepen the previously-conducted analysis of the Olweny irrigation scheme, in order to extend it to the household level and to actors who were excluded from the swamps due to the scheme's implementation. We then planned to conduct similar fieldwork in the Mubuku and Doho irrigation schemes, initially selected for their diverse cultural, social and ecological background as well as their distinct management structures. We finally choose to live in Uganda in January 2016, where we stayed until June 2018, to facilitate fieldwork planning and to access resources at the library of the University of Makerere in Kampala.

Nevertheless, it turned out that the fieldwork conducted in the Olweny swamps from March to April 2016, as well as exploratory interviews conducted in July 2016 in Agoro sub-county, significantly called into question the main analysis of our master's thesis, leading to profound reformulation of the research plan. Indeed, on the one hand, the fieldwork in the Olweny swamps highlighted the importance of taking into account long-term dynamics in the analysis in order to understand the high level of social differentiation encountered. On the other hand, exploratory interviews in Agoro sub-county showed the existence of indigenous irrigation practices since precolonial times. This clearly demonstrated that the irrigators had, despite displacement, the ability to conduct collective action. However, this area was affected for a much longer period by the war against the LRA, whose socially destructive nature was at the root of our previous analysis of the local population's failure to adopt the irrigation schemes. We thus chose to change our approach in order to produce a frame of reference that would provide an accurate understanding of the phenomena encountered, while re-designing the research plan to explore findings that appeared to be significant. Consequently, after the additional fieldwork in the Olweny swamps and some exploratory interviews in Agoro sub-county, we decided to abandon the idea of conducting fieldwork at the Mubuku and Doho schemes, in order to focus on Agoro.

This required living in the field from August to December 2016, punctuated by a few short stays in Kampala in order to use the University of Makerere library. After discussions with sub-county leaders and workers from the irrigation scheme co-operative society, we were allowed to occupy an empty room in one of the cooperative society's unused administrative buildings, located three kilometres away from the main village of the sub-county, where we walked twice a day for food. The remote location of the scheme made it impossible to commute

between the town and the fieldwork location: unlike the Olweny swamps, located 20km from Lira, the Agoro scheme is about 85km from Kitgum. On the one hand, this new form of immersion provided a better grasp of the interviewee's daily lives, requiring us to experience similar living conditions: mobility was reduced by the absence of a petrol station, leading to long daily walks; communication was random due to low network coverage and limited access to power. On the other hand, it affected our research, since organising a single interview or meeting could take a significant length of time – sometimes a few days. We thus chose to limit our local case studies to two rather than the three initially planned. Moreover, we also decided to extend our stay in Uganda. Indeed, the Agoro irrigation scheme only further highlighted the prominence of political issues in public involvement in irrigation. Consequently, we chose to move to Kampala from February 2017 to June 2018. During this period, we could vary activities between the literature review, writing and conducting the last fieldwork in the city, thus widening our research question so that finally it fully included high-level perspectives as they gradually appeared to us to be essential. In conclusion, the choice of an empirical-inductive methodology significantly influenced the reason why we eventually formulated two hypotheses, and why we chose to answer our research question in two steps, each testing one hypothesis. Indeed, this directly reflects the methodological approach we used during fieldwork. In this way, our analysis is grounded at the local scale, before being widened to include high-level perspectives.

Before introducing the theoretical frameworks and the methods of investigation used at these two levels of perspective, it is worth noting the contribution made by living in Uganda, which we did thanks to a three-year doctoral contract with the University of Bordeaux Montaigne, starting in September 2015. Our stay eventually lasted two and half years, encouraging immersion in distinct social worlds: first in Lira, a country town about 20km from the Olweny swamps, then in Agoro sub-county, a remote rural area and finally, in Kampala, a dynamic and cosmopolitan city, where the Ugandan middle and upper classes are found alongside foreigners, in great contrast to the slums scattered around the city. One undeniable advantage of such an experience is found in the opportunity to unconsciously enrich our analysis by developing cultural competency (Bonnet 2008), that Jean-Pierre Olivier de Sardan describes thus:

The field researcher also observes and interacts without otherwise paying attention, without having the impression of working, and thus without taking notes, neither during nor afterwards. Happily for him, he does not always feel that he is under orders. He eats, chats, jokes, flirts, plays, looks, listens, loves, hates. Just by living he observes, in a way despite himself, and these observations are 'recorded' in his subconscious, his subjectivity, his 'I', or whatever you want to call it.<sup>12</sup> (Olivier de Sardan 1995: 5)

The main illustration of the development of this skill was demonstrated in the field in Agoro sub-county, when we had the impression of being able to accurately interpret the data collected during exploratory interviews much more easily, quickly, in other words, "naturally", than in the fieldwork initially conducted in the Olweny swamps. This feeling was to some extent confirmed by Prof. Ronald Atkinson, a historian who has worked extensively in the sub-region, and with whom we discussed our research in Agoro sub-county on several occasions. However, living in Uganda also had an impact on the research process, in the sense that being disconnected from the field would have facilitated looking at the data with greater perspective. It also represented a something of a challenge with respect to the literature review, since the resources at the University of Makerere library were limited in some fields, although it was a rich source of regional studies essential to our research. Finally, we also wish to highlight the fact that, with the exception of these few difficulties, conducting research in Ugandan cannot be considered as arduous. On the contrary, the fact that there has been political stability since 1986 and the significant presence of, and investment by, international NGOs and economic actors contributed to making the research easier. Few people directly refused interviews, while in the field people level of participation in our research was significant, making fieldwork, during which we conducted a total of 95 interviews, considerably easier. Furthermore, we never found ourselves in a position in which accessing fieldwork would have been just impossible. Moreover, the Kampala-based Center for Basic Research (CBR), to which we were affiliated, also considerably facilitated access to the University of Makerere library. Alongside the Makerere Geography Department, they also supported our application for a student visa, and provided facilities for, and logistical help with, seminars to discuss our research findings. These are examples of the help we received that tempered the difficulties inherent in conducting research in Uganda, and contradict the

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<sup>12</sup> Translated from the French.



image of the heroic researchers who tend to dramatise the challenges they face, as depicted by Jean-Pierre Olivier de Sardan (1995: 2).

### 2.3. Exploring irrigation schemes: investigating low-level perspectives

As previously mentioned, fieldwork conducted in 2014 and 2015 coupled with a literature review highlighted the need to further the analysis in the Olweny swamps by obtaining an understanding of the dynamics at the household level as well as including people unable to access or use scheme land. The fieldwork also highlighted the impact of high-level power issues at the local level due to the sensitivity of land-related issues. These field observations, among others, led us to mobilise the theory of common pool resource management, as a flexible frame of reference within which to conduct further fieldwork in the Olweny swamps and in Agoro sub-county. While “commons” have tended to become a rather polysemic concept, now extended to dematerialised objects, for example knowledge, we have chosen to use a strict definition according to our needs. We thus approached common pool resources with a particular focus on the institutions that regulate them. We considered the common property regime, as an arrangement relating to property according to which a group develops rights and obligations, thus ensuring that each member can access the resources and that no-one can alienate that right (Jodha 1995, McKean 2000).

Studies of common pool resources have their roots in neo-institutional economics and the theory of rational choices (Forsyth & Jonhson 2014). Elinor Ostrom (1990) has made a significant contribution to studies of commons, by developing theoretical principles characterising long-term – in other words and to some extent, sustainable – institutions for self-governance of natural resources. Irrigation systems were one of the main subjects she studied. This new concept went beyond Hardin’s theory of the tragedy of the commons, in which he predicts depletion of natural resources unless they are either privatised or nationalised. Elinor Ostrom demonstrates the significant differences between common pool resources, held exclusively by a defined group of people, and open access resources that Hardin mistakenly qualified as common. Nevertheless, while the neo-institutional approach to commons allowed unprecedented conceptualisation of issues linked to collective action, one

of its main limits is the assumption that collective action results from a rational choice, another being underestimation of the logics of power and historicity (de Moor *et al.* 2016). This limitation appears to be significant, particularly in the context of former colonised countries. In this case, the plurality of norms and sources of power is far from negligible, “community” is often subject to normative construction (Le Meur 2008) and territories often remain subject to multiple uses.

Nevertheless, beyond these limits, using commons as the focal point in the context of our case study appeared to be interesting. In agrarian societies such as those found in Uganda, it is usually agreed that common pool resources play a major role in agricultural production. In this light, access to them conditions the livelihoods of a significant proportion of the population. Despite the difficulty of quantitatively assessing their contribution, some estimates suggest that in Africa about 90% of the population is at least partially dependent on common pool resources (Wily 2011). However, despite having been widely rejected subsequently, since the colonial period Hardin’s theory has contributed to generate land policies in favour of either privatisation or nationalisation, which could be described as a reverse tragedy of the commons (Verhaegen 2014). Indeed, land and agricultural policies have increasingly led to profound processes of resource commodification and accumulation by dispossession (Harvey 2005), of which phenomena such as land grabbing are the most easily visible facet. From a Marxist viewpoint, this highlights the transformation of property rights in the capitalist dispossession process, finally leading to a form of ownership based on private and individual property, often described, for example, in the English enclosure movement (White *et al.* 2012). Resource commodification is thus understood as the process of converting social, natural, cultural and political capital into monetarised commodities (Polanyi 1983).

Historically speaking, the transformation of common pool resources has thus been constantly introduced as a necessary condition to agricultural modernisation and sustainable resource management (Harvey 2005). Rather than indicating the absence of a clear definition of property rights over resources, as Hardin’s theory did, resource depletion and overexploitation should be understood as “the emergence of power-based relationships in the development of systems of rights that govern access to, use, distribution and transmission

[of commons]”<sup>13</sup> (Verhaegen 2014: 26). In former colonised countries for example, the colonial administration often ignored pre-existing institutional arrangements. To serve colonial purposes, transformation of common property rights relied either on indigenous leaders, strongly empowered by the colonial rulers (Berry 2002), or, on the contrary, highlighted the collective and inviolable nature of “customary” land to justify the prohibition of it being sold or mortgaged (Li 2010). Finally, the post-independence period was marked by a discourse of modernisation, whose translation into economic terms led to the mobilisation of resources in rural areas for production and investment. In the newly independent states, a dual legal system has emerged, since an imported “modern” legal framework now overlaps systems of indigenous rights (Häller 2010). Common pool resources, considered to be underexploited and generating low productivity, and therefore of low economic value, are then found at the heart of various kinds of enclosure processes in which the rise of legal pluralism plays a major role. On the one hand, numerous studies explore the links between privatisation, investment and enclosure of former common-pool resources (Woodhouse *et al.* 2000). However, few of them focus on how this process extends qualitatively to new resources or to social structures, beyond the often-explored issues relating to land. On the other hand, more studies tend to demonstrate how some indigenous systems have long since become integrated to varying degrees into individual property rights (Lund 2000, Li 2010), as for instance seen in the case of land used for homesteads or private gardens, although the surface area used in this way remains low compared to other kinds of land-based assets.

Since the 1990s, a general pattern has emerged of individual property rights expanding to cover common pool resources, alongside land commodification, through various strategies deployed at the micro-level (Cotula & Mathieu 2008). Analysing this micro-sociology of the transformation of common shows the prominent role played by the strategic logic of local urban or village elites, for example businesspeople and rich indigenous leaders. For example, Ugandan NGO LEMU (Land & Equity Movement in Uganda) considers land grabbing to be a “cancer eating society away from within”, but highlights the fact that this process does not only involve multinational companies or states. Land commodification encourages such enclosure processes, by eliminating commonly-held property regimes through a great variety

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<sup>13</sup> Translated from the French.

of practices that also vary in intensity. These trends have been encouraged by the introduction of external legal frameworks relating to land since colonial rule, and/or the pre-existence of exclusion processes, for instance linked to gender, age or lineage, and which are found in the long history of societies (Peters 2009). In conclusion, studies of commons show that their tendency to disappear is related to common property rights being poorly defended, rather than poorly defined (Verhaegen 2014).

Finally, Tobias Häller (2010, 2012) focusing on the case of Sub-Saharan African floodplains, highlights how institutional change in former colonised countries significantly contributes to the overexploitation of resources. More particularly, he shows how this trend results from collusion between, on the one hand, indigenous institutions managing common-property regimes that have been increasingly eroded since colonialism and, on the other hand, the legal pluralism introduced by institutional change, transforming common pool resource into *de facto* open access resources. Indeed, the paradox of the presence/absence of the state in many former colonised countries has led state laws to establish new modes of resource regulation but without the means to actually implement them. The main result is the strategic logics of powerful actors, who have instrumentalised the existence of legal pluralism for their own benefit through various kinds of bargaining power. This analysis highlights the need to understand long-term patterns in indigenous institutions. Moreover, Tobias Häller establishes a matrix, demonstrating the existence of a wide range of complex situations, all of which undermine, in various ways and to varying degrees, collective action for resource management. This model demonstrates that enclosure, rather than being the product of a single overall pattern, represents a range of dynamic, simultaneous and paradoxical hybrid trends towards open access and privatised resources, all depending on the strategic logics of the actors involved (Häller 2010).

In conclusion, this literature review significantly influenced how we conducted fieldwork in the Olweny swamps and Agoro sub-county in 2016, as well as how we interpreted the collected data. We decided to focus on individuals' relationship to resources by using land and water management, as well as agrarian practices, as starting points to explore both long-term and more recent dynamics. Moreover, we considered the coping mechanisms that emerged as a reaction to the materialisation of the irrigation schemes as potential strategies to

individualise rights to resources. We thus focused on how resources are accessed and used, within and between groups of people who we identified. Finally, we also focused on the power balances that may exist between various individuals and groups, thus exploring a certain agrarian micro-sociology of resource management. We thus hope to empirically demonstrate the strategic logics at work, by analysing how resources are effectively governed both inside and outside the irrigation schemes, before and after their initial and later stages of implementation. Investigation methods – semi-structured individual and group interviews, field observations as well as an analysis of grey literature – were thus chosen in order to meet these objectives.

We designed semi-structured interviews after preliminary, exploratory fieldwork. The interviews were conducted in local, Lwo-based dialects, using a translator either chosen by the population to which we introduced ourselves, or who was native to the area. This decision meant that our data were collected with the help of someone native to the area and therefore most of the time not unknown to the interviewees, which had both advantages and disadvantages in terms of establishing a relationship with the people being sampled. We thus carried out 18 individual interviews among randomly chosen households in Adeknino, a village of about 200 households bordering the Olweny irrigation scheme. In Agoro sub-county, besides individual interviews, we organised group meetings with leaders of each of the nine clans that own land within the irrigation scheme, as well as with some randomly selected leaders and elders from two clans using indigenous irrigation upstream of the scheme. In this context, the use of semi-structured interviews appeared to be appropriate, providing us with a fairly flexible framework, aiming as far as possible not to influence answers by the way the questions were formulated (Kaufmann 2011). Moreover, including open questions in the questionnaires also gave the interviewees the opportunity to step out of the framework and offer original perspectives that we might not have previously identified or anticipated.

We also used field observation as a direct investigative method, spending a significant amount of time on site observing, for example, landscapes, meetings and the cultivation and irrigation practices that people used. These observations complemented the interviews, providing initial contact with actors or noticing who was present or absent in certain contexts for instance. This method was used during the exploratory stage, as well as throughout the fieldwork.

Moreover, when invited to join certain activities, such as ox-ploughing and building indigenous crafted dams, we chose not to decline. While seeing a young, European foreigner clumsily guiding cows definitely seemed like an entertaining experience for those who witnessed it, we quickly became convinced that it was an efficient way to build a climate of trust, at least to a certain extent. More generally, as previously highlighted, living in the country where we were doing our research can also be seen as a form of observation going beyond the limits of the professional context. Observing is thus a method that contributes to understanding the rules that govern a given environment.

Finally, we devoted a significant amount of time to seeking and analysing grey literature, a kind of literature sometimes qualified as being hard to define (Keriguy 1984). In our case study, this literature proved to be very diverse, including academic studies, sometimes hand-written, drafts, reports or feasibility studies related to the irrigation schemes or various kind of archives for instance. Some of these documents were found at official resource centres, while many others were found by chance, or lent by actors we interviewed and who allowed us to make photocopies of them. They nonetheless appeared essential to the overall understanding of the irrigation schemes, as they contain important information about the projects – such as how and by whom were they conceived, or which priority appeared essential at which period – and about the agrarian and socio-political history of the sub-regions where sampled irrigation schemes are located – which provided an in-depth understanding of the historical patterns contextualising areas, sometimes down to the micro-level. Consequently, this literature also influenced our interviews, as well as how we analysed our data. It therefore represented a significant method of investigation which proved essential to our overall analysis.

#### 2.4. Exploring irrigation schemes: investigating high-level perspectives

In order to investigate high-level perspectives, we conducted fieldwork in Kampala from September to December 2017. Indeed, the need to fully integrate high-level perspectives appeared with the presence at the local level of high-level actors, such as multinational companies, NGOs and civil servants, leading to the appearance of high-level strategies within

the project areas. Contextualising these processes led to an in-depth analysis of the phenomena occurring at distinct scales. In order to achieve this, we mobilised another set of theoretical frameworks. Identifying actors, understanding their logics and analysing their strategies at this level required a specific frame of reference, which we constructed using contributions from the sociology of public action, Science and Technology Studies, and political ecology and agronomy.

Public action is understood as the collective development of programmes of action (Commaille 2014). Its study was first initiated in the United States of America (USA) in the 1950s. In the 1960s, the focus on the sociology of organisations tended to explore the limits of states' capacity for action in relation to how they handle problems (Hassenteufel 2008). More recently, research into public policies has tended to focus on actors and their interactions. Studying public policies is thus part of political sociology, in which the state is no longer at the centre, being replaced by a multiplicity of actors – unlike in the field of public policy analysis – in a context of different scale (Commaille 2014). The sociology of public action thus appears appropriate when studying, for example, the high-level actors involved in irrigation schemes, the development of the related power balances at the highest level as well as the various strategies of legitimisation used by such actors. This allows us to go beyond the dominant representation of the state as an overbearing, homogenous entity (Signoles 2006), by highlighting the diversity of actors involved in determining public action for irrigation. In the context of a country such as Uganda, these actors not only include Ugandan civil servants, but also international entities like NGOs, financial institutions and cooperation agencies. Indeed, external actors play a significant role in determining the making of public action in most countries receiving international aid. In this global context, technological solutions such as irrigation schemes might thus have been arrived at through processes located in several circles, all of which we aim to analyse. Understanding actors' logics and strategies therefore also involved exploring how discourses, paradigms and concepts are transferred through public policy or action, by analysing how elements external to a political system participate in its creation (Delpeuch 2009). This calls for a particular focus on intermediate actors, who are the key to the process of transnationalising public action (Hassenteufel 2005). In Uganda, it transpired that, in the case of irrigation schemes, this focus is mostly on civil engineers employed as civil servants. While this was not our main focus, we still attempted to give some

consideration to understanding their background, resources and networks. By exploring such actors and processes, we hoped to highlight power relationships between the various actors involved in irrigation schemes at the highest level.

Science and Technology Studies also appear to make a relevant contribution to our case study. Indeed, while we used actors as starting points to explore high-level perspectives, understanding the logics they use also led us to deconstruct the rhetoric that they often presented as truths, formulated in neutral, scientific terms, thus tending to depoliticise them. We thus mobilised some of the contributions of STS, since one of this field's main focuses is to analyse the co-construction process between sciences and societies (Bonneuil & Joly 2013). Scientific statements are thus considered to result from both the use of scientific methods and their integration into social, political and economic structures (Jasanoff 2004). Our case study thus contributes to the recent debate about relationships between political science and STS (Latour 2008). By studying the inseparable nature of the creation of social and scientific order, we can deconstruct the political choice of infrastructure-heavy, technocratic and top-imposed schemes to promote irrigation technology, publicly described as being essential to adapting to the climate crisis. Indeed, on the one hand, the choice of medium and large schemes, preferred to less onerous and more flexible small irrigation projects for example, should not be considered to be obvious. On the other hand, links between promoting irrigation schemes and adapting to climate change need to be analysed as well. The objective is therefore twofold: to deconstruct what determines public involvement in irrigation, we need first to understand the construction of public policies and actions in relation to agriculture and natural resource management and then how the messages they produce are mobilised as authoritative arguments in the irrigation sector. In doing this, we also focus specifically on balances of power and dynamics, as one of the main criticisms of STS lies in its "lack of attention to larger social and political relations" (Goldman & Turner 2011). Elements of analysis developed in political agronomy and ecology thus appear relevant to the exploration of these processes.

Indeed, linking political agronomy and ecology-based approaches to STS allows us to analyse how scientific knowledge is transformed when it is instrumentalised through politics. This allows us to study how the development of specific populations and rural areas interact with



experts' knowledge (Leblond 2018). Political agronomy particularly focuses on "relations and processes binding political, economic and social factors and forces to agricultural production and use of agronomic knowledges and technology" (Sumberg *et al.* 2014: 1502). This critical approach, to some extent inherited from questioning agronomic expertise (Cochet 2011), explores the political dimension of interventions in agricultural matters, including contributions from political economy, political ecology, STS and development studies. Moreover, it studies how agricultural technologies are chosen, accepted or ignored. In particular, the contribution of political ecology is significant to our case study. This field is indeed close to political agronomy, developed in the 1980s following on from renewed interest in agriculture in development studies, which took the form of peasantry studies. By highlighting how market integration and social structures have led to the rise of inequalities in agrarian societies, peasantry and agrarian studies have greatly contributed to the awareness of physical and human factors in environmental damage (Blaikie 1985, Blaikie & Brookfield 1987). This became the core topic of political ecology, which considers ecosystem degradation to be linked above all to social and political dynamics, thus questioning the appropriateness of environment-related policies introduced by public authorities as well as the resistance mechanisms these policies lead to.

In this way, political ecology has tended to (re)discover agrarian practices, logics and consistency that were little considered under the previous technocratic approach to agriculture. The "Agrarian studies" research programme supervised by James Scott, aims to question the ahistorical aspect of many studies focusing on the "development" and "modernisation" of agriculture and rural areas. The political ecology approach thus developed, focusing on social justice and resource conflicts in countries in the Global South (Watts 1985, Bassett & Zuéli 2000, Gautier & Benjaminsen 2012), defined as "a cross-disciplinary field of study concerned broadly with the politics surrounding the use and control of natural resources and environmental change and its representation" (Goldman & Turner 2011: 6). One of the main issues in this approach is therefore to understand how problems – such as the necessity to increase access to agricultural water in Uganda – are constructed at various scales, and how this interacts with the dynamics of politics – for instance, in our case, contemporary public intervention/policy relating to irrigation. Finally, we thus contribute to this literature by providing an example of how natural resources are forcibly transformed thanks to top-

imposed irrigation schemes, and the strategies behind the control of irrigation scheme resources in terms of access, use or ownership, from a multi-level perspective.

We thus mobilised the general principles of these various theoretical frameworks to conduct fieldwork in Kampala city from September to December 2017, during which we carried out 27 individual interviews. The contributions of these various fields indeed influenced how we prepared distinct, key questions before each interview, or more broadly key topics that we aimed to explore depending on which actor we were meeting. Though they can be described as semi-structured as in previous fieldwork, we decided to remain flexible during the interviews, giving our interviewees room to express their point of view in their own way. Therefore, we did not draw up a single or even several questionnaires to apply to every meeting. Instead, previous fieldwork had indicated which high-level actors we should interview first, due to their direct involvement in irrigation schemes. Then, based on the data we had collected, we aimed to meet other actors, who had gradually been revealed as relevant in deconstructing discourses, arguments and ideas. These other actors were either recommended by the interviewees themselves, thus partly using the snow-ball method to identify new actors (Olivier de Sardan 1995), suggested by our own personal network, or identified from the grey literature we continually searched for and used. We thus met civil servants, private sector employees and development agents – be they Ugandan or foreigners – and a few politicians. Using these investigation methods to identify and meet actors therefore allowed us to enter the various social spheres that appeared connected to public involvement in irrigation to varying degrees and at various stages.

### 3. THESIS OUTLINE

This thesis is organised in two parts. Part I focuses on the low-level perspective, aiming to understand the coping mechanisms that developed after the implementation of irrigation schemes in the Olweny swamps and at the foot of the Agoro hills. We thus hoped to highlight the strategic logics that emerged from the disruption caused by the projects. In Chapter 1, we analyse the long-term agrarian and socio-political development of Lango and Acholi societies, the sub-regions where the Olweny and Agoro schemes were respectively implemented. Understanding these dynamics provides in-depth context about indigenous agricultural

practices as well as land and water management at a local level. In this way we aim at differentiating the underlying trends that existed before the implementation of the schemes but that were furthered by that implementation, from the trends caused by the schemes. Chapter 2 focuses on the Olweny irrigation scheme. We show that the long-term process of commodification introduced under colonial rule deeply changed the society's relationship to its environmental, economic and social structures. We thus demonstrate that the irrigation scheme reflects and deepens these changes, which favour strategic logics that impose individualised access to, and use of, plots, which constitute former common-pool resources, for rice culture, in a context of agrarian shift and eroded indigenous institutions. In Chapter 3, we focus on the Agoro irrigation scheme. Contextualising the various stages of the project's implementation in terms of the long history of indigenous irrigation practices in a rather isolated valley, we show how, ultimately, the recent war against the LRA led to the adoption of rice culture. Demonstrating the significant resilience of indigenous institutions, which recovered from the war, we analyse how the pre-existing domination of a few lineages in the valley is reflected in the recent rehabilitation of the scheme. Furthermore, the rehabilitation deepened pre-existing economic, social and symbolic inequalities by significantly excluding dominated clans from access to water for irrigation, while favouring it among powerful clans and actors.

Part II focuses on high-level perspectives, aiming to deconstruct the contemporary making of public action for irrigation in Uganda. In Chapter 4, we show how the history of irrigation technology in Uganda is rooted in the implementation of several schemes by a Chinese technical team. This linked agrarian technology to infrastructure design as promoted by the Asian "Green Revolution". However, in the context of various post-independence crises, the boom in rice production did not start before the 1990s, and then in a spontaneous manner unrelated to public policy or action. Chapter 5 shows how Museveni's first decade in power was marked by state (re)construction, following a neoliberal pathway. With agricultural policies being ignored, the legal framework for irrigation schemes is thus mostly contained within those for water, land and wetlands. We analysed the power issues involved in these sectors through the logics and strategies deployed by the main high-level actors involved in their making. This highlighted the increasing influence of the ministry of water and the concomitant decrease in that of the ministry of agriculture, while obtaining control over land

appeared highly strategic for the government in the context of the new Constitution, which restricted the state's power over that resource. Chapter 6 finally demonstrates how, in the context of a legitimacy crisis and state authoritarianism and militarisation, Museveni instrumentalised the shift in aid architecture to deploy populist "pro-poor" policies, while creating new resources to obtain patronage and clientelism for their political survival. We analyse how public action for irrigation, which has significantly expanded since the late 2010s, is thus deeply integrated into nationalist, populist and neo-patrimonial dynamics. This is favoured by various international discourses relating to the climate crisis, food sovereignty and the "green" economy, instrumentalised by the government to present irrigation schemes as being necessary and essential.

# **Part I: Coping with Irrigation Schemes**

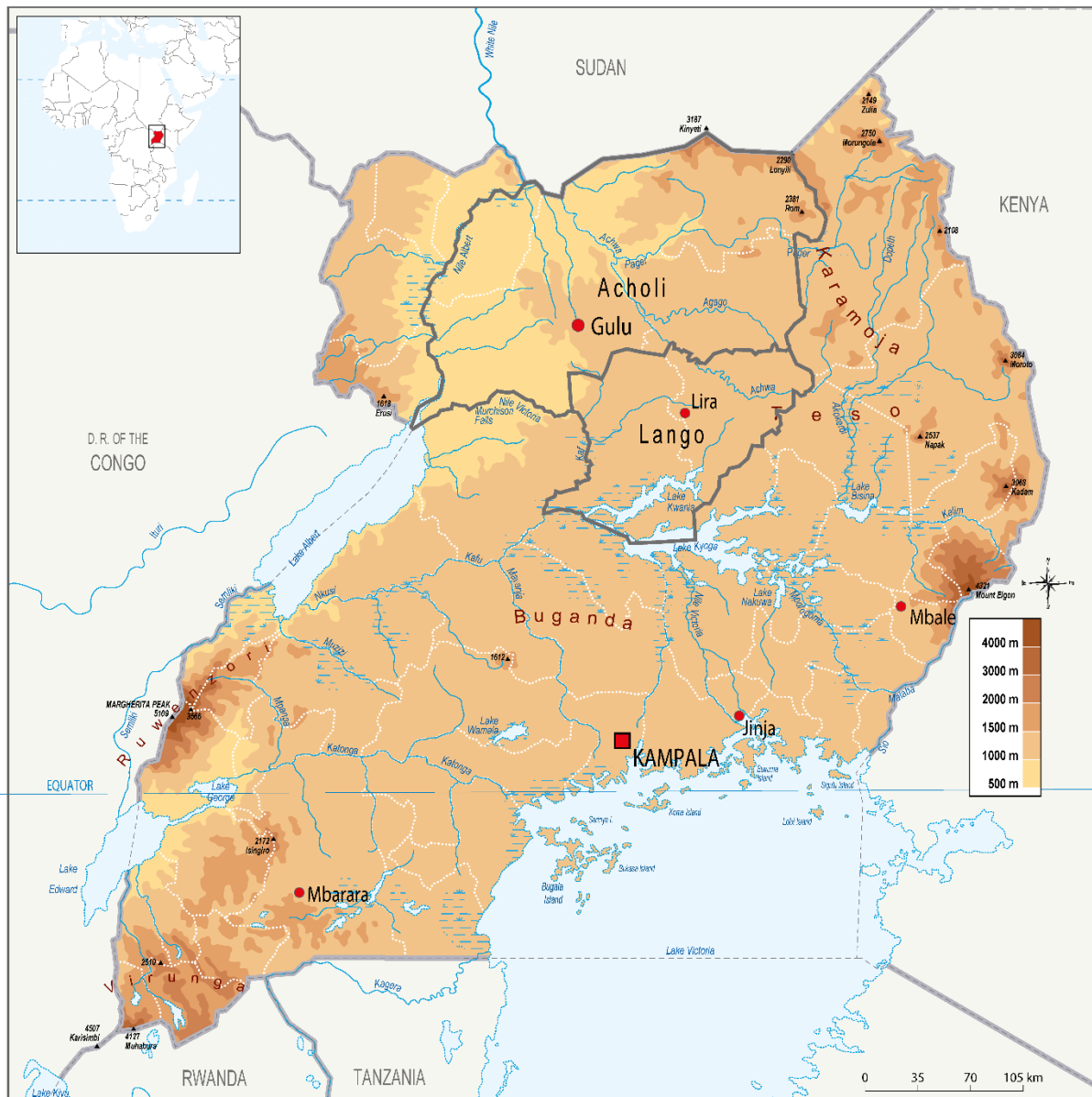
Part I focuses on the local dynamics found in the project territories in the Olweny swamps and at the foot of the Agoro hills. Using a bottom-up approach, we explore local practices linked to changes before the second part examines broader and higher levels of analysis. This part is divided into three chapters. Chapter 1 provides the historical background to the Lango and Acholi sub-regions, with particular focus on long-term socio-political and agrarian trends. Chapter 2 focuses on the Olweny irrigation scheme in Lango sub-region, and Chapter 3 on the Agoro irrigation scheme in Acholi sub-region. Both chapters use the relationship to agriculture as well as land and water management as entry points, in the light of the long-term trends identified in the first chapter. Part I thus aims to provide an understanding of actors at the local level, their logics and the strategies they deploy in relation to irrigation schemes. We do this by focusing on the analysis of changes caused by top-imposed and implemented irrigation schemes, in the context of long-term institutional, economic and social disruption – including more recent post-war and post-displacement trends.

# Chapter 1: The Agrarian and Socio-political History of Lango and Acholi

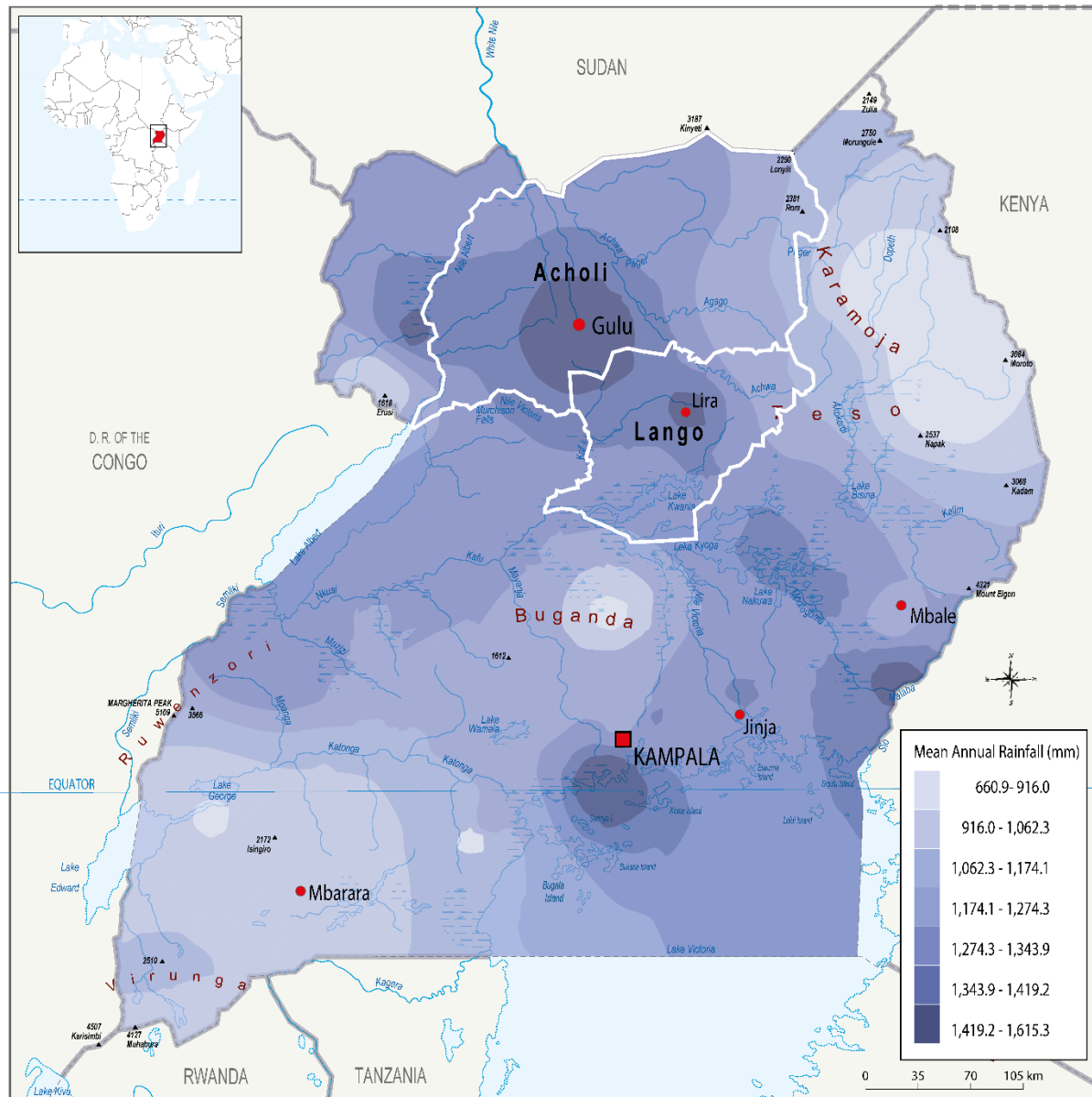
This first chapter explores long-term developments in the socio-political order in Lango and Acholi in relation to their environment, with a focus on the means of earning a livelihood: agriculture and cattle-rearing. The objective is to identify the main changes and disruptions which have occurred since the eve of colonial rule, as well as their impacts on agriculture, land and water management. Natural resources are indeed central to such agrarian societies, interweaving socio-political structures and their relationship with their environment through both agrarian and resource management practices. We thus hope to make an attempt to assess the impacts of irrigation schemes, not only by dissociating changes linked with project implementation from underlying trends, but particularly by identifying the pre-existing trends into which the changes encountered at the micro-scale of the project territories are integrated. Moreover, this type of institutional approach then allows us to compare the way in which the Lango and Acholi societies have developed. These sub-regions are often described as homogeneous in terms of environment, climate, culture and social structures, and both have suffered from recent war-related events: comparing them clearly highlights the reductionist nature of such representations. Furthermore, it demonstrates how the unexpectedly strong resilience of the Acholi institutions is easier to understand in the light of distinct long-term trends. This chapter is consequently organised into three chronological sections: the first describes the Lango and Acholi sub-regions in the precolonial era; the second focuses on disruptions during colonialism and the early post-independence period; finally, the third explores more contemporary war-related dynamics from the 1990s until the present.

The Lango sub-region of northern Uganda consists of plateaux with scattered permanently and seasonally flooded lowlands – often called swamps – which drain into the Kyoga lake system. The vegetation of the uplands can be described as deciduous woodland and well-drained savannah. Further north, the Acholi sub-region is covered in rolling, lightly wooded savannah that feeds the Aswa river system. From its core to its eastern and northern limits, the Acholi landscape of “scattered trees, bushes, and thick, tough grass that can reach six feet

in height” is replaced by “a harsh climate marked by a long dry season and frequently late or unreliable rains” (Atkinson 2010: 46). The soil varies from a fertile alluvial type in the lowlands of the main river basins to a sandy to sandy clay loam in the upland savannah. The illustrations below show the differences in the distribution of rivers and wet lowlands and in rainfall patterns between the two sub-regions.

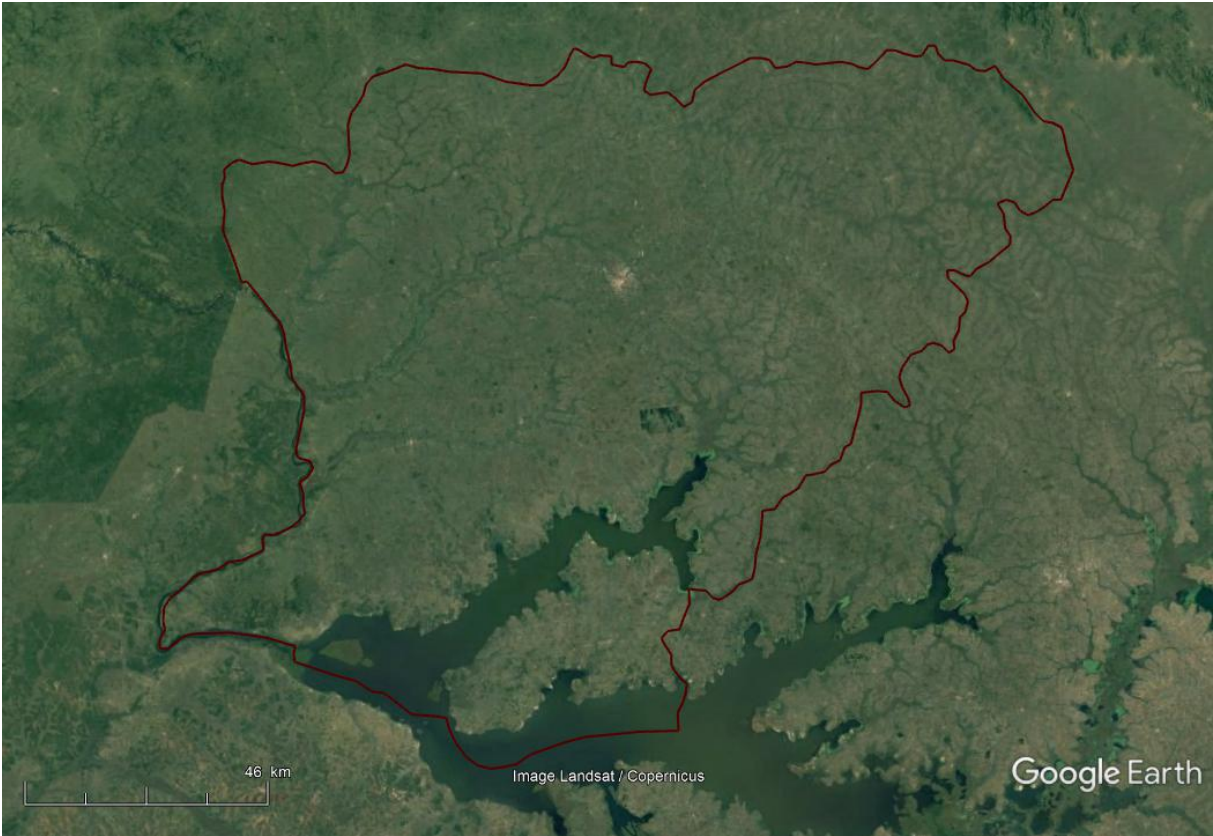


Map 2: The Acholi and Lango sub-regions in Uganda (Alfauert 2019)



Map 3: Rainfall in Uganda (Alfaut 2019)





*Picture 1 (above): Aerial view of the Lango sub-region (Google Earth 2019)*



*Picture 2 (above): Aerial view of the Acholi sub-region (Google Earth 2019)*

When the British first arrived in northern Uganda, both Acholi and Lango were perceived as consisting of distinct “tribes”, and as such were administrated as homogeneous cultural units. The British considered that the northern regions shared similar agricultural practices in an environment that was less favourable in terms of rainfall than the south. With the influence of these different ecological conditions to some extent, northern societies were not organised on the same pattern that the British encountered in the southern kingdoms. Cultural groups were highly mobile and characterised by an absence of large, centralised socio-political institutions. Cereal farming was of primary importance, while cattle-rearing contributed to local economies to a varying degree – though generally considered as social wealth used for important sacrifices, bride price, or compensation for instance. However, although there were similarities among northern Ugandan peoples, there were numerous differences as well.

## 1. LANGO AND ACHOLI BEFORE BRITISH RULE

This subsection explores the formation of early Lango society, while the second examines that of Acholi. Indeed, various differences between the two societies can be seen in the light of how they emerged, each shaping indigenous institutions in their own way. We thus aim to identify similarities as well as differences between early Lango and early Acholi societies, in order to better understand the regional context in which later disruptions, such as colonialism, took place.

The 15<sup>th</sup> century saw extensive migrations by the Luo peoples, with previously settled peoples being assimilated into the moving groups (Ogot 1967). The sub-region currently called Lango experienced numerous migrations, including Luo-speaking groups, from the 16<sup>th</sup> to the 18<sup>th</sup> century. These groups then assimilated hybrid Eastern Nilotic groups displaced from farther East by severe droughts of the kind that have caused famines in several parts of present-day northern Uganda<sup>14</sup>. Because the language currently spoken is close to that used in modern-days Acholi, Langi people tend to be classified as part of the Southern Luo group. However, Langi traditions point to Eastern Nilotic-speaking origins, which is supported by evidence that

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<sup>14</sup> See Atkinson (2010: 52-53, 80, 106, 137-44, 198, 263-64, 273) for information on early Luo migrations, droughts, and Lango origins. In today’s Barr sub-county, where the Itek and Okile swamps begin in Lango, John Tosh established the settlement of these hybrid groups during the 1850-60s (Tosh 1978a: 29).

the Langi once spoke an Eastern Nilotic language (Tosh 1978a). Thus, the Langi do not have a single origin but developed from the fusion of several distinct groups<sup>15</sup>. Similarly, before the late 17<sup>th</sup> century, the western portion of what eventually became Acholi was populated primarily by Central Sudanic speakers, a language group that is widespread to the west and northwest of Acholi, while the eastern parts were settled mainly by Eastern Nilotic speakers (Iteso and Karimojong cluster). During the late 17<sup>th</sup> and 18<sup>th</sup> centuries a minority of Western Nilotic Luo speakers was added to this mix. However, in Acholi prior to the late 17<sup>th</sup> century, “linguistic and cultural dissimilarities (...) were not matched by similar differentiation in the economic, technical, social, or political sphere” (Atkinson 2010: 71).

There were many reasons for the migrations, including social or political tensions: splitting up was a way of regulating tensions within or between clans<sup>16</sup>. At this time the low population density meant that natural resources were not under great pressure (Prunier & Calas 1994). Moreover, shifting agriculture was dominant, based on extensive grain crops grown once a year using slash-and-burn techniques. The diet was supplemented by hunting during the dry season, a period also dedicated to cattle-raiding and social activities. Other causes of migration were localised and sometimes widespread droughts, sometimes leading to famine as occurred several times during the 18<sup>th</sup> century, cattle diseases and the search for good hunting grounds. The main factors taken into consideration when choosing a settlement site were, on the one hand, the fertility of the soil, due to the importance of grain cultivation, and, on the other, the proximity of wetlands in order to provide grazing throughout the year.

Both early Lango and Acholi societies went through the process of adopting a common language and similar social, cultural and political organisational structures, starting in the late 17<sup>th</sup> century in Acholi and more probably the 18<sup>th</sup> century in Lango. However, although definite identities were emerging in Acholi and Lango, complex differences remained within each group – and are still present to a lesser extent today. While in Lango this appears to have been

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<sup>15</sup> John Tosh (1978: 34) adds: “[Nonetheless] 'Lango' as an ethnic label was not an invention of the colonial period; the word has an indigenous ancestry as the expression of a cultural identity”.

<sup>16</sup> A clan or a lineage is understood here as a cultural unit based on patrilineal kinship ties within which marriage is prohibited.

due to the influence of neighbouring cultural groups, in Acholi it seems linked to rainfall conditions.

## 1.1 Early Lango

By the 19<sup>th</sup> century Lango had an increasingly definable ethnic identity and more or less stable “borders”. While disparate migrations had contributed to various features of Langi society and culture, the latter were also shaped by the environment and the economy. Thus, although a Langi identity started to make sense at a regional scale, it was also characterised by significant local diversity. Indeed:

[the Langi] owed their collective identity not to any internal consistency, but to historical experience which set them apart from their neighbours. (...) The term “Lango” was commonly used by Lwo groups when referring to non-Lwo (Tosh 1978a: 33)

John Tosh illustrates this statement by pointing to the Langi age-set organisation – a common institution among Eastern Nilotic groups located to the East – and to Lango clans’ frequent fragmentation. We thus first explore the diversity encountered on the ground on the eve of British rule before focusing on the common order found at that time, based on clan sections as political units. Finally we will see how this socio-political organisation, coupled to a given environment, shaped resource management and agricultural practices.

Lango society was patrilineal and polygamous, based on the recognition of two kinship ties: membership of a lineage (*doggola*) and, more importantly, of a clan (*atekere*) that defined an individual's identity beyond the limits of a village. However, periodically, different institutional activities could be linked to villages: hunting, rituals and sometimes age-set organisation. The latter was found in Lango, especially to the north where neighbouring Eastern Nilotic-speaking groups had a stronger influence<sup>17</sup>. Moreover Langi clans tended to split up and thus become smaller. The growth of clans surpassed demography, explaining why early Lango is often

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<sup>17</sup> This illustrates that in early Lango the fusion between “each group involved in the formation of the Lango people brought its own social institutions, and it was out of these disparate elements that Lango society took shape. (...) In many ways it is more enlightening to stress the diversity on the ground than to construct a model valid for the whole society.” (Tosh 1978a: 62).

qualified as acephalous in the literature. Moreover, this trend among kinship groups towards deeper fragmentation – John Tosh (1978) accurately uses the term “clan sections” when focusing upon those localised segments of a clan – also made it impossible to maintain a common clan identity across any distance. As a result, splits appeared within clans in the long-term. Thus “migrations in Lango broke the correspondence between genealogical and spatial relations” (Tosh 1973: 475, Tosh 1978a: 52). This fragmentation appears to have been more important in early East Lango as it tended to decrease farther west.

Thus, on the eve of British rule, oral traditions indicate that each clan section – the political unit – had not one but several kinds of leaders, each of them exercising a different form of authority. Moreover, as “a strong element of consensus entered into all decision-making” (Tosh 1978a: 245), those leaders had hardly any inherent individual authority, although on some occasions, such as conflict resolution or military activities, one particular man would be accorded a leadership role<sup>18</sup>. Langi leaders often had no title though they were sometimes called *rwot* – like the leader of an Acholi chiefdom – or *awitong*, the “spear-leader”, or *awimony*, the “battle-leader” (Tosh 1978a: 68). Such authority over military activities led European colonialists to wrongly think of those leaders as clan chiefs. Others were entrusted with different powers regarding mobilisation for hunting or cattle grazing, or leadership of spiritual or working groups. Like land rights, livestock ownership was not individualised but rather “vested in the descent group” (Tosh 1973: 475). Leadership, of whatever form, was not hereditary. Indeed, although after a leader died a son was likely to be chosen, it was up to the elders to appoint a successor based on human qualities such as being hospitable or a proven warrior. Thus, leaders received hardly any economic or material benefit from their position except social prestige. Early Langi society could thus be described as egalitarian. As population density gradually increased, political units tended to become less and less isolated from each other. Recognition of authority beyond one clan section level seemed to have been based on the primacy of settlement, though the aggregation of clans under one individual's leadership could vary considerably. Furthermore, this larger-scale leadership “would suggest that personal influence was more important than an institutional base” (Tosh 1978a: 90) and,

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<sup>18</sup> He was, however, assisted by the *odonge*, the “elders”, to resolve conflicts and had to consult the warriors before leading them to the battlefield.

therefore, did not survive long. It quickly fell apart as Lango experienced great losses at war against the Bunyoro kingdom during the late 19<sup>th</sup> century, while a massive rinderpest epidemic in 1889 put competition for cattle at the core of a new period of deadly inter-village raids.

Finally, agriculture in early Lango was limited to extensive, annual cultivation of grain crops such as finger millet, sorghum and sesame. Pigeon peas, beans and ground nuts were also found near houses. Both millet and sorghum were used to make beer, while millet and sesame were used to cook *malakwang*, a nutritious dish eaten widely in northern regions. Although they clearly existed previously, John Tosh describes 19<sup>th</sup> century trading networks, used by Langi groups after significant harvests to exchange sesame with their neighbours for salt and forged tools such as hoes or spears (Tosh 1978a: 85-86).

As in early Acholi, Langi precolonial agriculture successfully exploited unreliable rainfall patterns to grow favoured crops such as sorghum and millet, the yield from sorghum being lower but its resistance to drought higher. Both finger millet and sesame were labour-intensive crops, including in terms of soil preparation. Consequently, groups had to clear and prepare land in a short period of time as soon as the first rains started around April (Opyene 1994: 16). Indeed,

The severity of the dry season ruled out any extensive growing of perennials: all crops except the pigeon-pea had to be sown afresh each year on laboriously prepared ground. Soils in Lango were light, and the only fertilizer employed was the ash deposited by regular grass fires; no plot therefore could be kept under cultivation for more than three – or at the very most four – years, and a fallow period twice or three times as long was required (Tosh 1978b: 418)

Above all, the annual distribution of rainfall in Lango was such that clearing the ground and sowing were restricted to the months between March and September, with effectively only a single harvest per year; crops planted during the latter three months were most vulnerable to rainfall variation, so the pressure was all the greater to cultivate as much land as possible between March and June. (Tosh 1978b: 420)

The solution, in both Lango and Acholi, came through cooperative labour groups based on reciprocity of work between members: the *wang tic*, “numbering around twenty-five men,

which attended to each members' plot in turn" (Tosh 1978b: 420)<sup>19</sup>. This involved men and women under the leadership of an *adwong* in charge of ensuring people's participation in collective work on the land that was allocated by the elders to cultivate. In return, individual households benefiting from the group's work provided beer and meat. Weeding was usually a female activity done at the household level, while harvesting was done by men and women, working in groups or as individual households. The clay and sandy soils favoured shifting, slash-and-burn agriculture, with groups moving settlement sites after three or four years.

Another form of group also existed, focusing on livestock management, since animal husbandry and food crop production were dissociated, extensive activities. Before colonisation led to forced settlement and the expansion of settlements within Lango, each *kraal* – the enclosure where a few hundred cattle from different households were herded together during the night – was looked after by three or four members from the same clan section. Under British rule, the creation of territorial administrative units based on villages led to a change in *kraal* organisation, with participating members coming from different clans but the same village. The organisation of collective working groups was similarly transformed. Although food cropping was of major importance, cattle-rearing was not only a cornerstone of the Langi economy but also of the people's identity (Tosh 1978a: 17-49, Tosh 1978b: 422)<sup>20</sup>.

When clans split and moved, newly-formed sections favoured areas with high fertility located near wetlands that offered strategic grazing land throughout the year. Consequently, sections from distinct clans ended up settling near each other as populations grew and migration lessened. Relationships between those clan sections were established by their settlement pathways, for example giving dominant clans greater authority over a wetland's resources<sup>21</sup>. Thus, swamps played a major role in Lango settlement history, shaping the distribution of

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<sup>19</sup> Working groups were at the time of such importance that John Tosh (1948: 41) adds: "land was of little value without access to labour which was conferred by membership of the work-group".

<sup>20</sup> Unlike sesame, cattle were rarely exchanged, instead serving as an indicator of wealth, and slaughtered on a few occasions such as particularly important rituals (Tosh 1948, Randall 1944).

<sup>21</sup> John Tosh (1973: 477) adds: "The interests of a small clan lay in recognizing the primacy of a strong neighbour, partly as a defence against attack by a third party, and partly to avoid becoming the target of cattle-raids by that same neighbour".

access to wetlands not only between but within communities when settlements eventually stabilised in the 1930s. Indeed, in Lango swamps<sup>22</sup> “are such a regular feature of the landscape that a Lango, in giving directions to a stranger, will say that his destination is so many swamps away” (Tosh 1978a: 20).

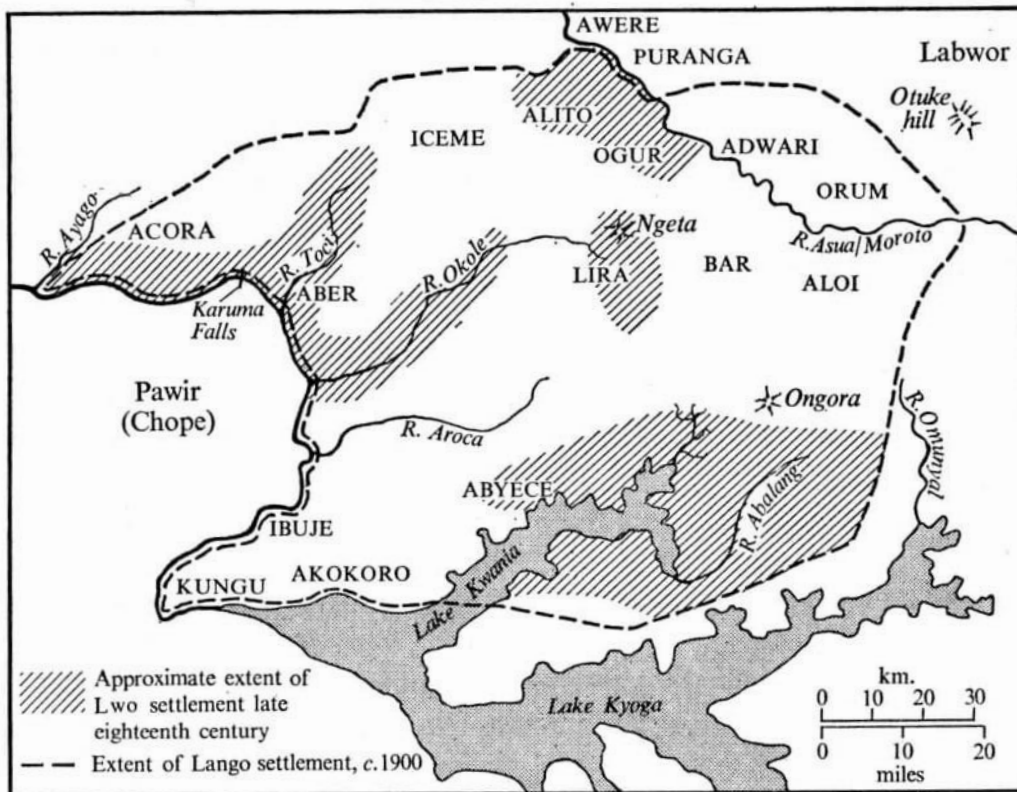
An interview with an elder from the Adyegy clan (28/04/16) holding a freehold title over seventy hectares in Okile swamp, illustrates this point<sup>23</sup>. According to him the clan section he is part of settled in the current Barr sub-county in around 1820 while the rest of the clan remained in the current Apac district. Although access to and use of wetland resources are communal for local inhabitants, his claim over part of Okile swamp is based on prior settlement by his clan section in the surrounding dry land. Consequently, it seems fair to assume that from the 1930s when the whole of Lango was colonised by forcefully settled Langi groups, access to land and its resources then became unequal – as appears to be the case in Okile swamp. Most of the sought-after sites were under the control of clan sections which were the most influential and/or with longer settlement histories, and sharing these sites or the resources they provided with outsiders depended – and depends – on individual personality rather than on any established rule.

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<sup>22</sup> Here, the term “swamp” is used as interviewees and the literature focusing on Lango use it, meaning a wetland, potentially flooded during the rainy season, and comprising lowland, ranging from flooded plain to grassland. The ecology is clearly distinct from the surrounding dry land, varying from fresh water with floating, leafed-rooted vegetation dominated by water lilies to plains with occasional shrubs and palms or rooted papyrus.

<sup>23</sup> Holding a freehold title over a wetland is the result of significant bargaining power in interpreting changing land laws to one’s own benefit, as will be seen in following chapters.





Map 4: Langi settlements on the eve of colonial rule (Tosh 1978a)

As illustrated by the above map, the three main wetland systems found in Lango are: the Moroto system linked with the Aswa river basin in the north; the Okole system, tributary to the Victoria Nile river basin, in the west; and the Olweny system that is part of the Lake Kyoga basin in the south-east. These swamps account for a large proportion of Lango and, as a result of differing water retention capacity, have varying ecological characteristics and consequences<sup>24</sup>. The hydrological cycle of wetlands also plays an important role by filtering and collecting underground water which was barely disturbed in the past by community activities such as fishing, fetching water or collecting wood for cooking, craft-based activities and building materials.

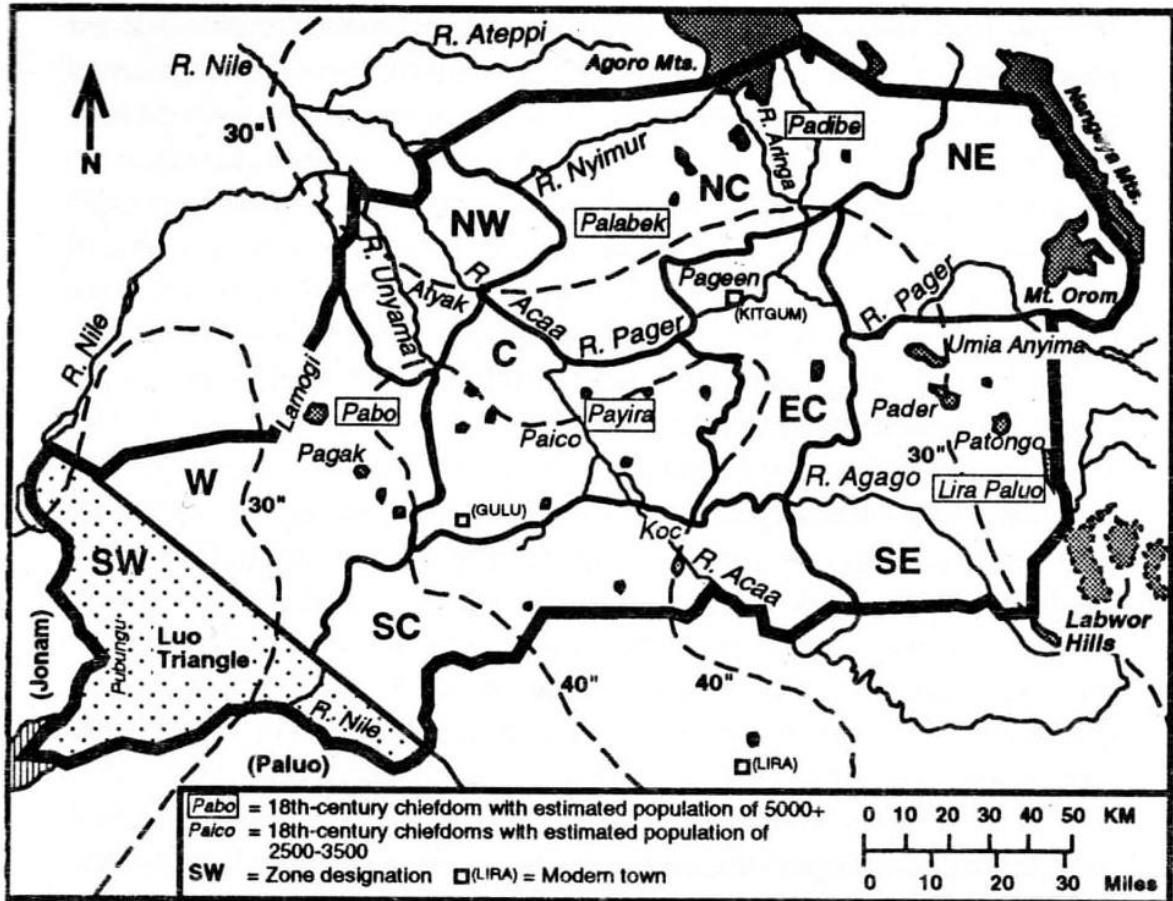
In conclusion, early Lango society was characterised by high level of mobility and a high degree of clan splitting, which led mobile groups to rely on clan sections as their main political units. Within these units, executive powers were not hereditary, since the last word on power

<sup>24</sup> In the current Lira district, wetlands represent 36% of the total area (Lira District Local Government, 2016).

transfer was ultimately decided by the elders, and allocated to several individuals, each entrusted with a particular position. In this sense, early Lango could be described as an acephalous, egalitarian society – unlike that in Acholi, as we will now see – in which mobility to seek wetland was essential. Indeed, cattle represented high social prestige. Land surrounding wetlands was thus considered to provide both grazing areas – as well as wetlands – but also fertile settlement sites for extensive, shifting slash-and-burn grain cropping. Therefore, the network of wetlands strongly affected population distribution, with clan dominance being directly related to prior settlement.

## 1.2 Early Acholi

As in Lango, the Acholi sub-region has been the theatre of numerous, major migrations. Eventually, during the late 17<sup>th</sup> and 18<sup>th</sup> centuries, thanks to exposure to the influence of the Bunyoro-Kitara kingdom, accelerated by pressure resulting from a series of severe droughts, “a common social order and political culture developed, a new society and collective identity evolved, and a common language (Luo) spread” (Atkinson 1989, 2010: 80). This process was also impacted by local ecological variations such as rainfall patterns and tsetse fly infestations (Luciyamoi 1970). This explains why, before the development of boreholes and water tanks that came much later, large areas were not populated, while others near the permanent Aswa, Agago and Aringa rivers were much sought-after. The Aswa river marks a natural border between West and East Acholi, the western part being wetter and more populated. Larger and more influential chiefdoms such as Payera developed in the south-central zone of Acholi, which has the highest rainfall of the sub-region, as illustrated by the following map:



Map 5: Acholi zones and the most populous chiefdoms in the 18<sup>th</sup> century (Atkinson 2010)

Early Acholi could thus be defined as a polycephalous society in which numerous chiefdoms emerged (Lutara 1956, Girling 1960, Atkinson 2010) as we will see next. We will then see how diverse agricultural practices across the sub-region were linked to the emergence of various local chiefdoms. Finally, we will show how regional identity was consolidated by interacting with outsiders.

Although the chiefdoms varied in size, they were similarly organised. This socio-political unit went beyond the limit of the village, though the latter provided “the economic, social and ideological foundations of Acholi” (Atkinson 2010: 77). Fenced, and consisting of an “exogamous, patrilineal, patrilocal, and patriarchal lineage at its core (*kaka*)”, the village-lineage was ruled by a head (*ladit kaka*) seen as “the living representative of that lineage's recognised founder” and assisted by the lineage elders (Atkinson 2010: 76-77). Mainly during the 18<sup>th</sup> century, various village-lineages joined together in chiefdoms (also described as

“domains” or “polities”) where a *rwot* – whose clan, the *kal*, was recognised as aristocratic – ruled the other lineages, called commoners (*lobong* or *lwak*), of the *rwotdom*. The *rwotship* had however some limits (Girling 1960). Indeed, the village-lineage heads and the *kal*'s elders shared authority – including military leadership – with the *rwot*. Moreover, the size and consequently the influence of each domain also depended on the will of each commoner lineage to remain, as they were free to migrate if they were dissatisfied with a particular *rwot*. Thus “shared authority and a large degree of sub-group autonomy and identity emerged in the Acholi chiefdoms with limited forms of centralisation and stratification” (Atkinson 2010: 78). *Rwodi* did, however, play a major role in maintaining social cohesion. They were expected to solve disputes when the village-lineage heads failed to do so, provided general assistance and protection to chiefdom members, and in some instances held the position of rain-makers. Tribute was paid to them, serving as much as a symbol of their authority as a “focal point in a redistribution of goods and services within the polity”, a role of considerable importance in “a society in which generosity was highly valued and the means to acquire material wealth limited” (Atkinson 2010: 94). By the end of the 18<sup>th</sup> century, about seventy *rwotdoms* existed across early Acholi, extending in the north up to the Agoro hills where a *rwotdom* developed in the valley<sup>25</sup>.

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<sup>25</sup> According to oral tradition, from the 18<sup>th</sup> century four chiefdoms from distinct origins (Northern Lwo, Central Sudanic, Eastern Nilotic) were found at the foot of the Agoro hills – including Pobaar, within which the Agoro Self-Help Irrigation Scheme is partly located. Those chiefdoms remained small and were characterised by a “high level of social isolation and independence” (Atkinson 2010: 255), as demonstrated by the existence of many local dialects and lineages seemingly apart from any socio-political formation but co-existing with those organised on the principle of chiefdoms. Immigration and moves from one place to another occupy a large part of the traditions of almost every group in this sector, so much so that the aboriginal groups of each place are usually pushed out. Nevertheless, names encountered by Father Crazzolaro, a missionary who lived in the area, are still used: Ngacino, Lopuligni, Rudi and Pobar became indeed parishes within Agoro sub-county. Irumo is a village-lineage located in Ngacino parish. Furthermore Father Crazzolaro (1954) described the Jo Baar as being composed of four groups, their ancestral heads being referred to as the four sons of Baar: Diir, from whom descend the Jo P'Odiir; Awoor, from whom descend the Jo P'Awoor; Cool, from whom descend the Jo Pa-Nyan-Cool; and Goma, from who descend the Jo Pa-Goma. In the present day Agoro sub-county, people from Pobar parish claim membership mainly of four clans said to be kin: Podi, the *kal* of Pobaar chiefdom, Paawo, Ponyancol and Pagoma. Furthermore, he identified numerous migrating and non-kin groups that joined the chiefdom, highlighting the diversity and mobility of migrations before colonial rule. Thus, unlike elsewhere in the region where an “Acholi” identity was slowly emerging, at the foot of the Agoro hills socio-political organisation was still highly fragmented.

Finally, early Acholi was also subject to a variety of climatic and ecological conditions, and in some cases a certain degree of influence from the neighbouring Bunyoro-Kitara kingdom. Land was then communally vested in the constituent lineages “for settlement, agriculture, grazing, hunting” with “complex local-level variations across the sub-region” (Hopwood & Atkinson 2013: 6), variations that were probably exacerbated by the colonial process and thereafter. In a very similar way to Lango:

Land rights (...) resided in patrilineal, patrilocal (and patriarchal) clans. Each land-holding clan (*kaka*) typically made up the core population of a fenced village. (...) In Acholi in the past, in a context of ample land and shifting agriculture, the relationship between a particular individual or household family, and a specific piece of land within the overall clan holding, was for the duration of its use for a particular purpose. Rights over a plot was based on its improvement, for example, by clearing it (Hopwood & Atkinson 2013: 6-10)

Exceptions did exist, however. Clan-based land, for example, was frequently given to guests under flexible conditions, or more rarely could be held by the clan but under the control of families. The latter seemed to have occurred in the present-day Agoro sub-county from before colonial rule, due to the permanence of cultivation within seemingly already fragmented, irrigated land – an exception in the region<sup>26</sup>.

As in Lango, the areas where rainfall was low and unreliable had the greatest pressure to work the land within a short period of time – as grain crops were highly labour-intensive. Communal labour based on village-lineage membership was of prime importance (Atkinson 2010, Hopwood & Atkinson 2013), workers rotating from plot to plot in a similar way to Langi<sup>27</sup>. However, unlike their southern neighbours, Acholi people used to pay tribute to their *rwodi* in the form of labour before working on their own plots. It is also possible that some *rwodi*, as Girling states (1960: 59), were involved in organising communal work. Labour was apparently even more important than in Lango, to the extent that “labour only, and not land or money was an important differentiating factor” within the economic order (Girling 1960: 48), a factor that could be improved by marrying several women and/or producing numerous children.

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<sup>26</sup> Indeed, it seems that irrigation in early Acholi was limited to the northern boundary, in the Aringa and Agago river valleys. This extensive irrigation was rare and perceived as valuable enough to be quickly noticed by the colonial administration (Watson 1952, Lutara 1956), though it is hard to assess its importance before the 1960s.

<sup>27</sup> Cooperative labour was also involved in other activities such as hunting and livestock rearing.

Thus, the rainy season was a period of intense work and isolation, focused on intra-village social ties. During the dry season, when the grass dried and possibly burned due to lightning or controlled fires, travelling was easier and social links with neighbouring villages increased through visiting, weddings, other celebrations, and hunting – game meat was also part of the tribute given to *rwodi*, and an important component of people's diet.

As in Lango, the agricultural economy was self-sufficient and did not accumulate reserves. Grain crops were usually the same, with one usually dominating in most cases, depending on the rainfall pattern. For example, in the northern part of Acholi priority was given to sorghum over finger millet, and cattle-rearing was more important. People used slash-and-burn agriculture like their Langi neighbours: the very shallow soil loses its fertility after two or three years. People then shift to another patch close to the homestead and village, which moved as well at some point “depending largely on the availability of a domestic water supply” (Lutara 1956: 8). Indeed, as Frank Knowles Girling states:

Unless there is moisture when the seed is planted and it continues to receive an adequate supply of moisture the crop will not succeed. (...) To those used to European conditions the Acholi methods of agriculture seem crude. There is little preparation for the ground and seeds of several different species are sown simultaneously. It is likely, however, that in the conditions which prevail locally these methods have a real practical value. (Girling 1960: 17)

The focus was on small plots of about one acre<sup>28</sup> which were dispersed to prevent the spread of pests and disease. This geographically scattered cultivation limited communal labour as well, which, as in Lango, needed to be completed during a short time window. However, people used to cultivate more land than they needed, in order to compensate for low yields in case of drought, or to exchange as surplus with their neighbours in return for salt, ivory or forged tools. Moreover, there was competition for recognised forms of wealth such as women and cattle. However, unlike in Lango, where cattle-rearing seemed to have been important from before colonial rule, in Acholi “cattle appear to have been important only in portions of the East and North” (Atkinson 2010: 56), which only emphasises the diversity of practices within the region. Moreover, diseases such as rinderpest and trypanosomiasis, spread by tsetse flies, heavily affected herds in Acholi, to the extent that even if “at one time the Acholi

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<sup>28</sup> 0.4 hectare.

may have had a mixed economy with cattle herding and agriculture playing equal parts, agriculture is now dominant, eked out by hunting and food gathering” (Girling 1960: 14). Finally, as we will see later, contemporary events such as cattle raids followed by the war against the Lord’s Resistance Army further depleted the sub-region of cattle.

Finally, Arabic-speaking traders came into Acholi around the middle of the 19<sup>th</sup> century and established trading points for two decades, taking ivory, cattle and slaves while making alliances with some chiefdoms and introducing firearms. Their influence was certainly greater in western than eastern Acholi (Langlands 1968: 22). During this period, these traders identified the Acholi people as one large entity rather than being comprised of a multitude of chiefdoms. They named the people “Shuuli”, based on the linguistic similarity with the previously-encountered Shilluk people to the north, a term that was later transformed into Acholi. This naming of the people, following several famines that occurred earlier, further entrenched both the chief-based political order and an ethnic identity. The period also witnessed personal enrichment of the *rwodi* through raids and elephant hunting for ivory tusks, one of each pair obtained by a chiefdom member becoming an added item of tribute. Therefore, “for the first time in Acholi, significant amounts of wealth began to be accumulated over time” (Atkinson 2010: 269). After the departure of the Arab traders, attempts were made by the Egyptians to establish authority but with limited success. Finally,

The year 1899 marked the beginning of a new epoch in Acholi political development. They had been in contact with Arabs, Egyptians and Europeans for at least forty years. But none of these had attempted to administer the area directly (...). With the establishment of British rule with the power to carry out its decisions and the determination to enforce peace as its first aim, then tension of the interacting forces, which kept the Acholi political system in being, slackened. (Girling 1960: 151)

Indeed, as shown in the next section, colonial rule led to many kinds of disruption in both Acholi and Lango albeit differently.

In conclusion, different migrations led to the emergence of a polycephalous society in early Acholi. In a much drier sub-region, more subject to external influence than early Lango, various events led to the formation of numerous *rwotdoms*, in which a certain level of hierarchy and social stratification appeared. As the sub-region was, compared to Lango, less favourable to

cattle-rearing – and more generally to settlement – the importance of grain cropping seemed to have been greater. Early Acholi agriculture was by then similar to early Lango's, though with seemingly more elaborate systems for collective working groups operating alongside *rwodi* entrusted with several roles including the accumulation and redistribution of wealth. This also illustrates some of the limits of the executive powers vested in them, since splitting to solve internal tensions and conflicts occurred in early Acholi as well as in early Lango. In both sub-regions, land was thus communally held, though by different types of indigenous institutions, and used for game hunting, grain cropping and grazing. Finally, significant disruption came with British rule, significantly affecting both societies as we will now see.

## 2. A CENTURY OF DEEPENING DISRUPTION

This section, organised in two parts – the first dealing with colonial Lango and Acholi, the second with post-independence dynamics – focuses on changes and impacts caused by colonial administration and the subsequent state order in the two sub-regions. The significant institutional changes brought about by colonialism, and later by the Republic of Uganda, deeply distorted the agrarian and socio-political aspects of the societies. We will now explore this process of hybridisation of external practices promoted first by the British and then by the independent state, through the same focal points as before: agriculture and resource management. We thus aim to take another step in understanding the background to Lango and Acholi and some new trends, such as the fact that the dynamic of replacing indigenous practices by external ones was not limited to administrative management. Indeed, this replacement became omnipresent in all aspects of everyday life, including people's relationship to natural resources and their exploitation. Such trends did not stop with independence, but have continued to grow in importance until today.

The 20<sup>th</sup> century thus began with the progressive establishment of British rule. Unlike southern Ugandan cultural groups, some of which were organised into large kingdoms, colonial administration in northern regions initially focused on putting an end to migration and inter-village cattle raids. Then, following "Indirect Rule", the British tried to reproduce the political order of the southern Buganda kingdom by using Baganda agents to administrate the North. This process spread at a slow pace for nearly two decades, mainly due to low



investment and indigenous resistance<sup>29</sup>. Indeed, in acephalous Lango, the personality of each clan section's head was a significant factor, as were the *rwodi*'s in polycephalous Acholi. In this sub-region, the use of firearms made life more difficult for the British, as people were also more involved in resistance against them<sup>30</sup>. Therefore, the British interest in northern regions was rather different to that in the South. While in the South they sought to control the source of the Nile and develop plantation cultures, northern regions had less to offer from the colonial viewpoint. Moreover, compared to the kingship-based southern socio-political orders, northern societies were regarded as “primitive” and subjected to a harsh regime not only by the British only but also by the Baganda agents. Indeed, the diversity of situations and the partition of executive powers in Lango and Acholi were hardly understood.

Since this period, everything related to the precolonial or indigenous orders has usually been qualified as “traditional”, “customary” or “local”, and to some extent as “informal” in nature – mostly by opposition to western practices. Indeed in the latter, precolonial or indigenous practices were, and sometimes still are, considered to be set in stone, devoid of flexibility or the ability to evolve. However, as we have previously shown, the formation of early Lango and early Acholi, composed of flexible institutions, was anything but inert. Consequently, we can hardly consider that indigenous institutions in Langi and Acholi had not changed since their inception, and that what informants call “customary” today might be the result of a much more contemporary social construction. This highlights once again the need to analyse dynamics over the long term to understand how internal trends have absorbed external ones. Therefore, as defined by Clare Paine (2014: 10), “tradition” or “traditional authority” will be approached “in non-essentialist terms that need to be understood as specific constructions at a specific time and for specific purposes”. Similarly, we use the term “local” with caution as it

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<sup>29</sup> It seems that such resistance was not expected, as John Tosh (1978: 123) puts it: “in 1907 an experienced official declared that, once a European was on the scene, the Lango would ‘be prepared to do whatever they are told’. He could hardly have been more mistaken”.

<sup>30</sup> The British initially pursued the fleeing ruler of Bunyoro kingdom up to Acholi where he had taken refuge. Thus, in the northern part of the sub-region, which was finally occupied after some years of military campaigning, the people living at the foot of the Agoro hills were displaced by the British to the southern Palogaa in 1916. In 1924 the order was eventually reversed, probably due to the murder of an appointed chief leading much later to the reinstatement of the hereditary *rwot* (Watson 1952: 159). One official reason for this military operation in Acholi was to “create a no-man's land along the line of the newly created Sudan-Uganda border” (Langlands 1968: 9), the northern part of the area being handed over to Sudanese officials.

appears to be “heavily loaded”, in a context where it is “generally used to describe an object or process used by people who have the aspirations but not the resources to be ‘up-to-date’ (...), an arrangement beyond official purview (...) in other words, a second rate or unofficial substitute for ‘the real thing’.” (Dolan 2009: 88-9).

## 2.1. British Rule

This subsection focuses in particular on the colonial period. Indeed, in order not to lose the investment made in the newly-created Ugandan Protectorate, the British decided to give priority to pacification in northern regions: at that time, Lango was going through a period of intense inter-village raids due to competition for cattle, while the Acholi sub-region was at the heart of a geopolitical struggle for control over land by different international actors. Attempts to introduce cotton, and to a lesser extent tobacco, then followed in northern sub-regions. However, the creation of new export markets required simultaneous development of a colonial administration to supervise infrastructure development and adoption of the desired cash crops. This required the British to establish a strict hierarchy, distorting indigenous socio-political order, in order to rule according to their objectives. This will be the first focus of this subsection. Secondly, we will question how the disrupting changes it caused have affected indigenous agriculture and land management practices.

The first British attempt to administrate the north by using Baganda agents was quickly abandoned, as the latter turned out to create even more resistance among people, who perceived their methods to be disrespectful and harsh. Authority was then transferred to people identified by the British as indigenous leaders, based on their influence and willingness to support colonial rule. These new chiefs were granted full judicial powers as the executive authority and power to mobilise labour, including to their personal benefit, or to request tributes. In Lango, an egalitarian society, such a social position had not previously existed and was hardly acceptable<sup>31</sup>. Misled by the military leadership exercised by some clan section

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<sup>31</sup> Indeed, “for them the principle of labour reciprocity applied as much to the clan leader as to the clan members. The right of the chiefs to labour services was the foundation of their privileged economic position. It enabled them first to profit from the market for Lango grain crops in Buganda and Busoga, and then to dominate the new cotton-growing economy” (Tosh 1973: 481).

leaders, the British overestimated their authority and appointed chiefs from among them (Tosh 1978a)<sup>32</sup>. In Acholi, the British often favoured traditional hereditary *rwodi* (*rwodi moo*) as colonial chiefs, but also granted colonial chiefships to men who were not *rwodi moo*. Acholi typically called such an appointed chief *rwot kalam*, or “*rwot* of the pen” to distinguish them from “customary” *rwodi moo* perceived as legitimate rulers. In both Lango and Acholi, elaborating a chiefdom-based hierarchy brought tensions as the sub-regions were divided into counties and sub-counties. Indeed, the new system matched the needs of a new and settled administrative geography, rather than the mobile geography of clan sections or chiefdoms. Consequently, in most cases appointed chiefs gained control over people they had no prior claim on in the past<sup>33</sup>.

While previously significant tensions between groups had been resolved either by migration or fighting, the colonial rulers forbade both. Settlement patterns, no longer subject to the necessity to fence villages, changed. In the 1930s, villages were no longer fenced but scattered, although this change took longer in northern and eastern Acholi, where insecurity was greater. In Lango, population distribution across the sub-region stabilised during the 1930s when the entire sub-region was finally colonised and most of the big game disappeared, the population already being significantly higher than in Acholi. Not only political power but most forms of collective action and groups then shifted from kin-based to territorially-based, a change which occurred in Acholi later, probably around the 1940s (Langlands 1968: 12). In Lango the *adwong wang tic*, head of the communal working group, often became the village chief. In Acholi a new form of collective working group appeared on the initiative of the people but encouraged by the colonial ruler: the *wang kweri*. Led by a *rwot kweri*, his authority was tied to a location and did not always involve kinsmen alone<sup>34</sup>. Settlement patterns were thus

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<sup>32</sup> By 1920 the whole of Lango was ruled by thirty-seven chiefs, each in charge of an area including 2,000 to 6,000 inhabitants.

<sup>33</sup> As explained by John Tosh (1978: 153), every administrative unit created by the colonial system was larger than “any territory or sphere recognized in the indigenous system”, and an “individual's chance of being appointed chief in part depended on where he happened to live in relation to the sub-county boundaries”.

<sup>34</sup> As we will later see, the *rwodi kweri* would become key leaders, involved in organising collective work but also in managing land in general. This position constitutes “a curious evolving and overlapping of cultural ('traditional') and bureaucratic political structures” (Porter 2016: 146) as they are said to be “customary leaders” but often act in tandem with both precolonial and colonial institutions. It seems that such role appeared in Acholi in the 1920s

no longer related to the regulation of tensions or the search for land, but to the colonial administration's requirements. Slowly, populations were being forcibly settled. This led them to lose the flexibility provided by mobility, which was a cornerstone of adapting to their environment in terms of resource availability or climate.

As lack of legitimacy sometimes made it difficult for these new chiefs to impose their authority tensions then became defused through intense competition for the position of chief. Opportunities for personal benefit, to the detriment of small clans or people in general, were unprecedented – even if a few *rwodi* in Acholi had previously been enriched thanks to Arab traders. Consequently, the continuity between the precolonial order and the colonial administration imagined by the British was rather illusory:

It is easy to see the administrative system as something imposed on an inert and passive population, as a manifestation of the Leviathan which had consumed the Lango and their neighbours. Yet local political activity did not cease, it merely entered new channels. (Tosh 1978a: 179)

For example, it is doubtless of interest to record that Akaki was the leader of the Oyima clan of Akokoro in the 1890s, that his son was county chief of southwestern Lango in the 1930s, and that his grandson was President of Uganda during the 1960s (Tosh 1973: 479)

During the 1920s the newly appointed chiefs knew how to develop their own complex webs of patronage, using the colonial administration for their own purposes. By selecting people who were to be educated and then occupy administrative positions, they secured support from within the new system. By controlling forced labour, they gained considerable personal wealth through cotton production, to the detriment of the people, “an affront to the egalitarianism of Lango society” (Tosh 1978a: 248). The Langi society and, to a lesser extent, the Acholi started to enter a process of economic and social differentiation: the development due to cotton production led to an accumulation of new wealth concentrated by a handful of

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and 1930s, as “a spontaneous innovation in response to the scattering of kin groups under British Administration” (Girling 1960: 193, quoted by Dolan 2009).

chiefs<sup>35</sup>, to the point that in Lango “by 1939 no class of wealthy peasant farmers had yet emerged” (Tosh 1973: 485).

Finally, such changes raise the question of the impact on food (in)security of commodifying agriculture, the second focus of this subsection. Indeed, it seems that disruptions induced by the forced adoption of cotton were deeper in Lango than in Acholi, probably due to its central location and more favourable rainfall pattern. Indeed, in the driest areas of Acholi grain crops were not sown immediately at the beginning of the rainy season but later, in order to counter the unreliable rainfall pattern. Then:

When cotton was introduced into the county, however, and the people were taught that the best time for planting is between mid-May and mid-June, they have to a very large extent changed their practice and now they risk the uncertainty of the early rains and sow their millet as early as possible in order to have ample time for preparing their cotton field ready for timely planting. (Lutara 1956: 17)

This statement highlights the cost of adopting cotton-growing as perceived by the people but seemingly not by the colonial administration:

From the Lango point of view, however, the most serious objection to cotton was that it entailed an exceedingly burdensome addition to the agricultural route which could only grow at the expense of other crops of proven worth. (...) cotton planting still competed with established crops such as sorghum, pigeon-pea and beans. Moreover, from the outset cotton took first place in the crop-rotation; it was planted either in virgin soil, or on land which had lain fallow for several years, so that the heavy work required before planting was particularly arduous. Later in the season the cotton plots demanded periodic thinning and weeding, both time-consuming jobs. Finally, cotton-picking called for a major change in the rhythm of the agricultural year. (...) Cotton deprived its growers of their principal relief from agricultural work during the year, and during the wet season it competed with other well-tried crops for scarce manpower. (Tosh 1978b: 426-427)

Sesame was not only favoured above cotton because it was part of a familiar and still viable commercial relationship with Bunyoro, or because its purchasing power was increasing; it was

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<sup>35</sup> Thus, junior chiefs, from village to county level, developed strategies to manipulate the colonial power structure and accumulate wealth and influence. Their control was as significant as people’s capacity to counter them was weak, partly due to the low level of British awareness of the situation. Although the chiefs’ abuses were exposed at some point, the reforms that followed did not have a significant impact on the now deeply entrenched patronage system. Furthermore “when during the 1950s national political parties made their appearance in Lango, the local branches fell under the control of the same junior chiefs. Such continuity of political leadership argues a formidable ability to exploit the external sources of power, be they colonial or nationalist” (Tosh 1978a: 247).

also much preferred on agricultural grounds. (...) Furthermore, sesame was not only a cash-crop but a food-crop as well. (...) For the Lango food surpluses were not only a means of obtaining salt, ironware and cattle; they were also a famine reserve – something which cotton could not be. The very slow start made by cotton therefore had its own economic logic. (...) Cotton could only be added to the Lango agricultural system at the price of endangering subsistence or cutting back a well-trying and flexible exchange crop [sesame]. (Tosh 1978b: 428)

So, on the one hand, people in drier areas were then more reluctant to adopt cotton as it increased the risk of food insecurity. Competition was then high between cotton and grain crops, and more particularly sesame which used to be at the heart of precolonial trading networks. On the other hand, competition for labour rose. This led to the adoption of cotton varying both within and between Lango and Acholi, as it concentrated in areas benefiting from more favourable rainfall patterns, close to colonial offices, trading centres and integrated into the emerging infrastructure network. Cotton eventually spread – though its profits were still very unequally distributed – due to a combination of factors. Among these was: a significant decrease in the administrative requirements for labour, and the chiefs no longer being able to request labour services<sup>36</sup> to use in their own cotton fields after their abuses were finally exposed in the 1930s; the surge in cotton prices in the 1920s and the decline of sesame as a cash crop; the rising exposure to attractive consumer goods imported by the arriving Indian traders (Tosh 1978b, Opyene 1994). In Lango, cotton production became the primary source of cash income by the 1930s. Indeed, by the mid-1930s the annual national production was estimated at about 60,000 tons, making Uganda the world's fifth-largest exporter at the time (Cotton Development Organisation, undated).

Besides, the colonial administration focused on reinforcing food security by encouraging or forcing people to establish grain stocks, which at the time did not appear to be in contradiction with the cash crop policy that was contributing to undermine it. Moreover, they facilitated the spread of southern crops such as sweet potato and cassava, which quickly became widely adopted. This had a significant impact in the Agoro area for example. After the end of the Sudanese raids in the 1930s, people no longer lived on the hillsides but scattered in the plains. By introducing such crops, the risk of famine was greatly reduced and thus so was the pressure

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<sup>36</sup> Including in Acholi, though it was considered a right linked to *rwotship* under certain conditions.

on indigenous irrigation. Watson (1952: 160) suggests that after that time, irrigation was no longer as intense and elaborate as it had been, though this assertion is questionable<sup>37</sup>.

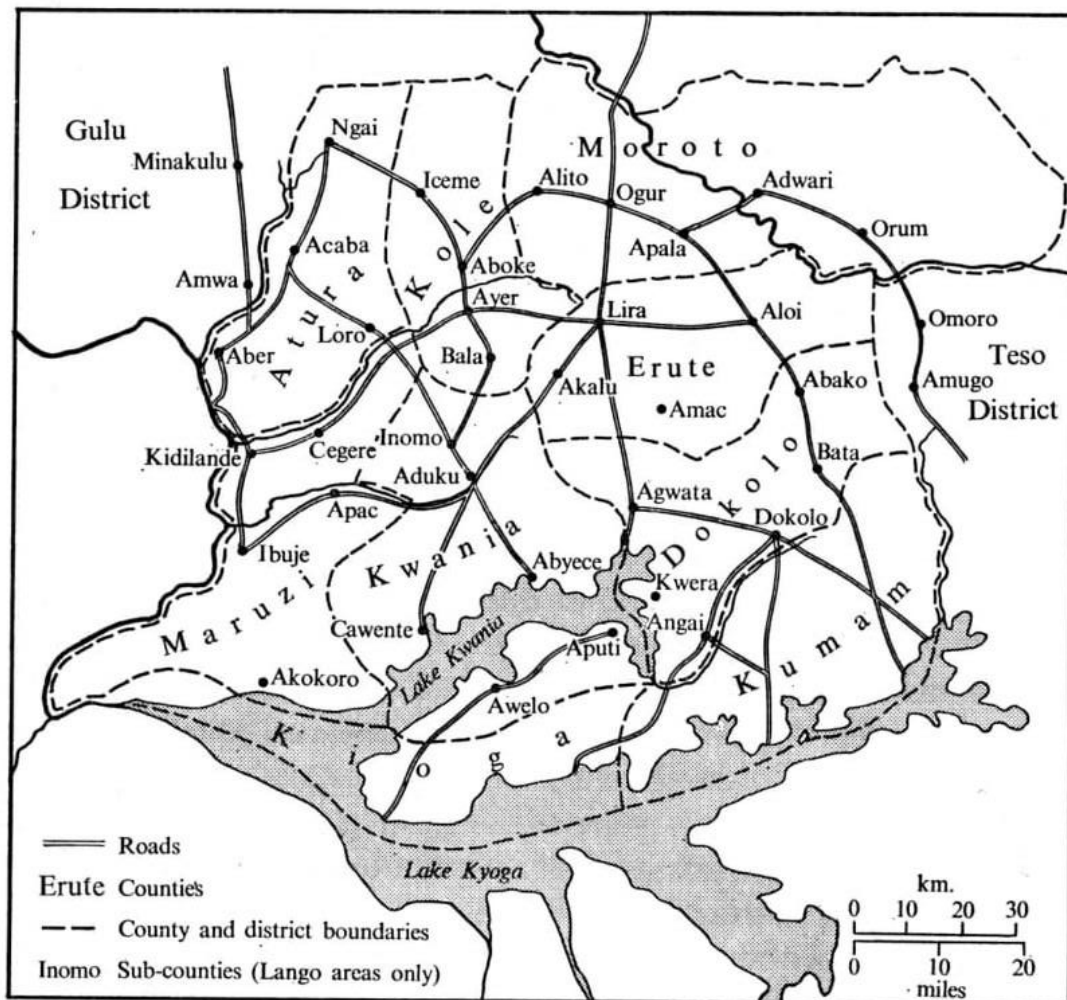
Finally, cattle-rearing was at the heart of a new national market aiming to supply the growing southern and urban demand. From the 1930s it became an important source of cash, especially in Lango and Teso sub-regions (Randall 1944) where cattle were more numerous and the people more exposed to the growing need for cash thanks to trading centres and the opening of schools<sup>38</sup>. This dynamic reached Acholi as well, probably to a lesser extent since cattle-rearing did not make such a big contribution to the local economy – the 1963 livestock census found about 135,000 cattle in Acholi while the estimate for Lango was about 371,000.

The above description leads us to make two remarks. Firstly, contrary to what is usually stated, northern people were not opposed to a cash crop economy in itself – they were actually already familiar with it, using the surplus sesame harvest to this end – neither were they opposed to the adoption of new practices: as they widely adopted crops from other Ugandan regions and also sold cattle, although the main reason for the latter was social. It then appears that the commodification of northern agriculture, through cotton production and sale of livestock, was a heterogeneous process depending on several factors. The distribution of the infrastructure network was important among these, as its proximity allowed increased influence from colonial administration, social services and trading centres while it also opened up market opportunities. Variation in the local rainfall pattern, and consequently the pressure on the cropping calendar, was another significant factor (see previous national map of the varied rainfall patterns).

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<sup>37</sup> Indeed, an author stated about his visit in the valley of the Agoro hills in the early 1950s: “I cannot believe that such a complicated system of dams and channels was inaugurated merely to ensure a satisfactory harvest of the second rain-crop should that of the first rains fail” (Watson 1952: 161), while his depiction of the groups living at the foot of the Agoro hills shows a superficial understanding of social dynamics of the valley.

<sup>38</sup> In 1943 only about 10% of a total of 290,000 cattle were sold in Lango, the Langi population at the time being 250,000 (Randall 1944). In comparison, in 1953 the livestock census recorded about 77,000 cattle in Acholi.



Map 6: Lango district in 1920 (Tosh 1978a)

Though it created a variety of local situations throughout the sub-regions, colonial policy had less impact on agriculture in Acholi as the region was more isolated and most of it was drier. Therefore, both the social and economic costs of further changes were likely to outweigh the potential benefits.

In conclusion, the British rule in the northern sub-regions aimed to serve two main objectives: securing the borders of the new Protectorate, and mobilising populations perceived as more “primitive” and physically stronger than southern groups to provide labour. This led to several colonial policies: forcing populations to settle, establishing a colonial chiefdom-based hierarchy, which distorted the indigenous leadership system, and using colonial rule to forcibly commodify the sub-regional agrarian economies. The latter was organised by exporting new cash crops, such as cotton, and cattle from the north. The impacts of such changes varied



between Lango and Acholi. Its more suitable climate and more central location – favouring infrastructure development and colonial influence – meant that cotton growing and cattle selling became much greater in Lango than in Acholi. Commodification of the economy thus became more deeply established in Lango. Coupled with the “Indirect Rule” model, this led to much deeper social differentiation in Lango than in Acholi. Although colonial rule also had an impact on the socio-political order in Acholi, with the forced emergence of *rwodi*, considered as non-customary, and the spatial reorganisation of authority, the changes seem to have been less disruptive: indeed, the Acholi agrarian economy merely changed compared to that of Langi. Moreover, in Acholi, whose structure relied on numerous *rwotdoms*, the colonial chiefdom-based hierarchy was possibly not as disruptive as it was in Lango, whose structure was based on an egalitarian, acephalous system. Consequently, social differentiation and stratification appeared in Lango, fuelled by the commodification of the economy as well as by the external introduction of a dominant structure, quickly re-appropriated by leaders to their personal advantage. This therefore was the first step in the erosion of Langi’s indigenous institutions and a premise of legal pluralism, dynamics included in the conditions posited by Tobias Häller for instance to explain the shift from common pool to open access resource management, particularly in former colonised countries (Häller 2010, 2012).

## 2.2. Post-independence: between continuity and disruption

A comparison of early Lango and early Acholi agricultural practices has therefore shown how colonial politics, by causing fast-growing groups to settle<sup>39</sup> and starting the commodification of the rural and agrarian economies, led to significant disruptions within those societies and to the emergence of an authoritarian, chiefdom-based hierarchy. Such disruptions did not cease after independence, but rather deepened in the midst of political instability and crises, as we will now see. First, we examine how continuity was maintained between the colonial period and the post-independence regime. Then, in the light of the colonial legacy, we focus on contextualising state-building dynamics in relation to an ethnicised exercise of central power. Indeed, as Chris Dolan (2009:64) states, it quickly appeared that “despite a project for

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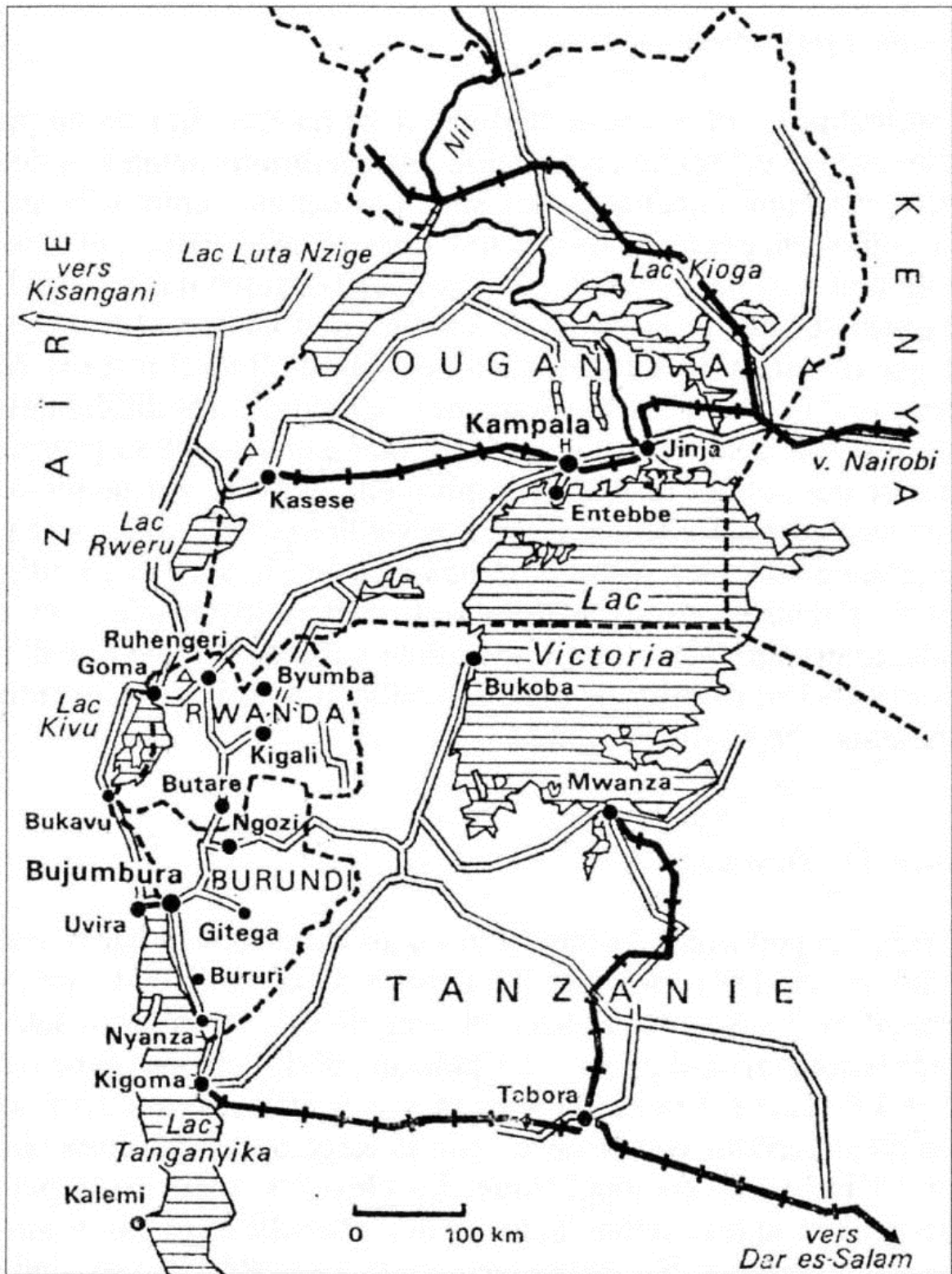
<sup>39</sup> Indeed, after a regional crisis in the African Great Lakes area due to droughts and disease, population growth resumed, slowly at first in the 1920s, then more rapidly from the 1950s (Chrétien 2000).

national unity, colonial discourses based on notions of 'tribe' had been deeply internalised and remained an organising principle in many people's thinking", as we will see.

First of all, by the 1960s, the population density in Lango was 26 inh/km<sup>2</sup> compared to only 10 in Acholi – then the lowest rate in the country. Consequently, the time left for land to remain fallow was already significantly shorter in Lango than in Acholi. Coupled with deeper integration of cotton production into the national market<sup>40</sup> and the growing use of the ox-plough, the farming system in Langi was more intensive than that in Acholi, while the transport network developed to connect the sub-region not only to the southern capital but also to the East African coast and international markets.

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<sup>40</sup> At the beginning of the 1960s, about 1,600 co-operatives were active in Lango, organising the collective sale of the cotton and providing producers with access to credit (Masefield 1963: 120). The greater proportion of land was down to cotton cultivation, ahead of millet and sorghum (Ministry of Agriculture 1953). The UPC (Uganda People's Congress), a political party led by Langi Milton Obote, became popular partly due to its policy of supporting a high cotton high price and defending people's land.



Map 7: Administrative boundaries, urban centres and infrastructure networks in the early 1960s (Le Jeune, In: Chrétien 2010)

In Acholi, it seems that during the 1960s many groups were still shifting after about eight years' cultivation (Luciyamoi 1970: 34). The adoption of cassava and maize however spread

quickly in Lango, alongside the ox-ploughing that became a key factor in opening up new land for cultivation, labour being the limiting factor at the time. This highlights how important cattle-rearing was despite its integration into the national market – rearing practices having been influenced under colonial rule, leading to a diminishing mortality rate, cultural practices such as dowries being paid with cattle being maintained as livestock was by then an important means of saving and a way to afford school fees. Moreover, by removing the limitation imposed by labour thanks to ox-ploughing, households also found more possibilities of crop selection as the amount of cultivated extended.

	<b>April to June</b>	<b>July to September</b>
<b>Year n</b>	cotton (possibly associated with beans) or sesame	finger millet (often) associated with pigeon peas
<b>Year n+1</b>	sorghum associated with sesame	finger millet (often) associated with pigeon peas
<b>Potential Year n+2</b>	sorghum or pigeon peas	sorghum or pigeon peas
<b>Potential Year n+3</b>	sesame	sesame
<b>Potential Year n+4</b>	left fallow for 5 to 10 years	

*Figure 1: General outline of the Langi farming system (data from Ogwang 1960)*

	<b>March to June</b>	<b>July to September</b>
<b>Year n</b>	cotton, sesame or sweet potatoes	cotton, sesame or sweet potatoes
<b>Year n+1</b>	finger millet (often associated with sorghum and pigeon peas)	sesame (often associated with sorghum and pigeon peas)
<b>Year n+2 potentially</b>	sorghum or cassava associated with groundnuts	sorghum or cassava associated with groundnuts
<b>Year n+3 potentially</b>	left fallow	

*Figure 2: General outline of the Acholi farming system (data from Lutara 1956, Luciyamoi 1970)*

This, coupled with a growing population and deeper integration into the new state rule to the detriment of indigenous authorities, led to a shift in control over land from Langi clans to extended and, later, nuclear families, starting from the 1960-70s. Similarly, cattle herds progressively ceased to be considered as under clan control but belonged to individuals. In Acholi, where there were fewer cattle and the ox-plough spread in the southern part only, land has remained communally held and under clan control and authority until today<sup>41</sup>. Labour has also remained the main factor of social differentiation in Acholi, favouring chiefs and first-born children.

	LANGO	ACHOLI
<b>Precolonial dynamics</b>		
<b>Indigenous institutions</b>	Acephalous & egalitarian	Polycephalous ( <i>rwotdoms</i> composed of an aristocratic lineage and one or more commoner lineages)
<b>Farming system</b>	Cereals & livestock	Cereals & livestock
<b>Land tenure system</b>	Communal	Communal
<b>Post-independence</b>		
<b>Distortion of indigenous institutions</b>	High	Low
<b>Impact of colonial policies</b>	Intensification/diversification/commodification of farming system; social differentiation/land as a source of income through development of cash economy	Low level of farming intensification/diversification and of resource commodification
<b>Land tenure system</b>	Premise of a shift from clan to household level regarding cultivated land	Communal

Figure 3: Comparison of precolonial dynamics with the colonial legacy (Torretti 2018)

<sup>41</sup> Though during the same period a change in terms of labour organisation could be described thus: “the hamlet has taken the place of the village” (Girling 1960: 46). In both sub-regions, villages were generally dispersed in form though this occurred later and more progressively in Acholi, to the extent that more remote areas such as the Agoro hills maintained fences up to the 1960s, though “even where there is no longer any fence, the people of a village have a strong sense of their internal cohesion” (Girling 1960: 55). Such trends further deepened after that, as pointed out by more recent research regarding indigenous land tenure in the Acholi sub-region (Atkinson *et al.* 2018).

In Lango, entering the growing cash economy became the main factor of social differentiation, no longer being the privilege of the colonial chiefdom-based hierarchy alone. Indeed, after the territorially-based *wang tic* working group, a new type appeared in Lango in the 1960s: the *awak*, a form of group defined by its members' precarious situation (Opyene 1994: 14). The *awak* group worked by consensus, appointing a President, a Secretary and a Treasurer, to establish the order in which plots would be worked for one cropping cycle. Moreover, the group could also sell their labour to individuals who could afford it – for instance on the cotton fields of some important village men (Mamdani 1984). Thus, the *awak* was not based only on labour reciprocity but innovated by assimilating the commodified relationship. This assimilation occurred in Acholi as well, although assessing to what extent is difficult. Some authors (Luciyamoi 1970, Lutara 1956) mention a wide plurality of working groups in Acholi – including the *awak* – whose functioning differed with for instance gender, presence or absence of food and beer, nature of payment and fees, timing of work. Nevertheless, a similarity can be seen with Lango, since during the 1970s Luciyamoi also mentions the weakening of the kinship factor as a tie between group members and the increasing assimilation of the commodified relationship within working group institutions. However, as far as land is concerned recent research shows that indigenous institutions continue to rely overwhelmingly on kinship-based customary land (Atkinson 2019).

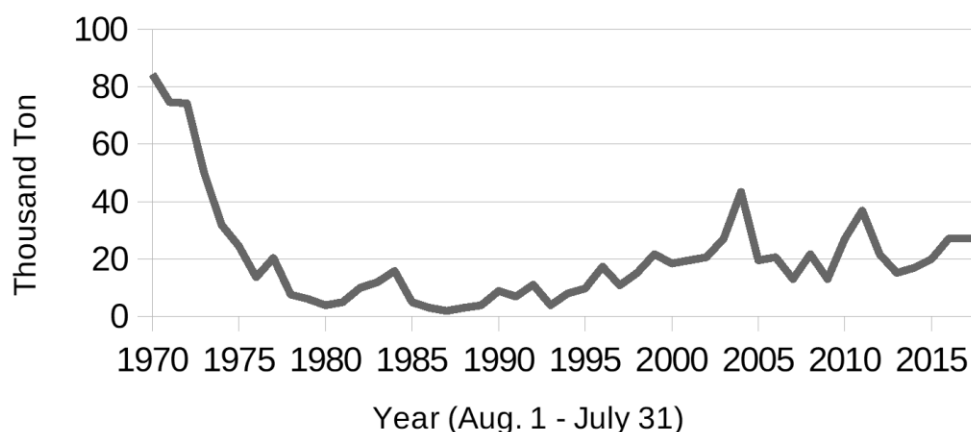
Finally, the colonial legacy remained prominent during the post-independence period, because it was strongly fuelled by the established nature and message of ethnicity, therefore affecting the new Ugandan politics through the ethnicisation of central power, as we will now see. Indeed, in 1962, when Uganda became independent, a Langi man was elected Prime Minister while the king of Buganda became President. At the time, the Ugandan army was composed mainly of men from Acholi and Lango who had fought in the World Wars in the King's African Rifles. This was the result of the British view that considered northern people as warriors and a source of manpower, and southern societies as more “civilised” due to the presence of kingdoms. Nevertheless, the newly independent country quickly went through a crisis in 1966 when Obote declared himself President for life, forcing the Baganda king into exile and introducing a Constitution abolishing kingship. Obote's regime quickly became authoritarian, relying on military power – meaning mostly on Langi and Acholi soldiers – to

maintain his leadership. Strongly rejected by southern Ugandan, Obote's General, Idi Amin Dada, eventually took power in 1971<sup>42</sup>.

Amin's violent regime quickly led to the collapse of the national economy and a significant increase in insecurity. Meetings were forbidden, ending the cooperative system upon which the cotton economy had relied since independence (Opyene 1994: 43-44). For instance, the area devoted to cotton production was estimated at about 360,000 hectares for a lint cotton output reaching a record of 87,000 tons in 1969, Uganda then being the third largest African producer, after Sudan and Egypt (National Cotton Organisation undated). By the mid-1970s this annual production had fallen to about 25,000 tons and eventually fell to 4,000 tons in 1980 (National Cotton Organisation undated). Consequently, cotton exports also decreased from 86,400 to 7,600 tons per year between 1970 and 1979 (Prunier & Calas 1994: 131). At the same time, the world price of coffee collapsed, leaving the country nearly resourceless while the President's embarrassing behaviour led to a drastic decrease in international support. Meanwhile, the intellectual elite were left without other options than death, exile or joining the system of corruption. Expulsion of members of the Indian and Pakistani diaspora, who held key posts in the economy, disrupted all sectors – leading for example to 800% inflation in the price of hoes in a few months (Adura 1977).

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<sup>42</sup> Meanwhile, during the 1960s, the concept of “development” based on self-reliance was rising. Supported by the Tanzanian President, Julius Nyerere, it became part of a discourse conceptualising an “African socialism” which Obote embraced, mostly for political reasons rather than to ideology. At the same time in Uganda, experience with irrigation schemes began with Chinese cooperation, which we explore in detail in Chapter 4. This context led Obote's government to develop an interest in the indigenous irrigation practised on the slopes of the Agoro hills. Eventually, the first attempt to implement an irrigation scheme was conducted in the Agoro valley between 1968 and 1972, aiming at reproducing the southern Kibimba rice scheme established through Chinese cooperation. As we will later see, this attempt did not meet Agricultural Officers' expectations, since the new irrigation design being promoted represented a major disruption of indigenous irrigation institutions, which resisted the process at the time.



*Figure 4: Cotton production in Uganda  
(National Cotton Council of America 2018)*

In this context, the economy “went into 'subsistence mode', with the destruction of the industrial base in the urban areas and the collapse of the export sector in the rural” (Jamal 1991), as famine episodes appeared due to a fall in subsistence food production. Indeed, between 1970 and 1979, national production of millet decreased from 788,000 to 353,000 tons, groundnuts from 244,000 to 80,000 tons and beans from 281,000 to 182,000 tons. Cotton exports also decreased from 86.4 to 7.6 thousand tons per year between 1970 and 1979 (Prunier & Calas 1994: 131). When Idi Amin left power in April 1979, defeated by the Tanzanian army allied with Ugandan rebels organised into the Uganda National Liberation Army (UNLA), the national inflation rate was about 200%, external debt was estimated at US\$320 million, corruption was generalised, and most of the factories were closed. Moreover, in Obote’s home sub-region of Lango and in Acholi sub-region, people suffered ethnic cleansing – mainly within the army. Indeed, Idi Amin aimed to restructure the army’s ethnic composition with men from his native northwest Nile sub-region, leading to the killing of many thousands.

General elections eventually followed Idi Amin’s exile. Held in December 1980, they brought Obote back to power – a period known as “Obote II”. This result was, however, greatly disputed due to strong suspicions of election rigging. Consequently, supported by most of the southern Uganda people who did not wish to be ruled once again by a northerner, and even less by the person who abolished kingdoms in the first place, Yoweri Kaguta Museveni created the National Resistance Movement (NRM) alongside its military wing, the National Resistance



Army (NRA), to fight Obote's forces in a guerrilla war. From 1981 to 1986, guerrilla fighting mainly opposed the NRA and the UNLA in the Luwero triangle, in Buganda kingdom. Eventually, a rise in tension between Langi and Acholi factions in the UNLA led the Acholi General Tito Okello to take power in July 1985 (Lamwaka 2016), before losing it in January 1986 to the NRA. The UNLA was disbanded and its soldiers went home to hide, mostly in the Lango and Acholi sub-regions. Estimates of casualties from the Bush war usually speak of about 500,000 deaths, most of them civilians.

In conclusion, while colonialism introduced clear disruptions by distorting indigenous institutions and shaping societies by commodification of agriculture and resources, especially in Lango for the reasons previously illustrated, the post-independence period featured relative continuity of these externally-imported trends. Again, Lango society appears to have entered more deeply into the cash economy, favouring intensification and diversification of cropping in a context of much faster population growth. This social and agrarian trend towards commodification led to changes in land management, with the growing economic importance of land in Lango. Thus, the commodification of the Langi economy, driven by the intensification of agricultural practices, accompanied a certain shift in land tenure from the communal to the nuclear family level in this sub-region, further emphasising social differentiation and the erosion of indigenous authority. These trends have yet to be balanced, as political struggle at a national level led to the collapse of the national economy, including the heavily affected cotton sector, during the Amin period. Meanwhile, the strong anti-northern rhetoric, upon which Museveni partly relied during the Bush war until he took Kampala in 1986, would eventually spread violence to the north, as we will now see.

### 3. REACHING BREAKING POINT?

In this section we analyse more contemporary dynamics, with the spread of armed violence in northern Uganda. This section may possibly shed light on previous analyses of trends in the Langi and Acholi agrarian and socio-political orders, as they allow us to understand unexpected findings resulting from fieldwork. Indeed, as we will see, armed violence spread from the late 1980s and significantly affected northern Uganda, the Acholi sub-region becoming the epicentre of a twenty-year war which affected the Lango sub-region for a much

shorter period. However, fieldwork showed that the Lango sub-region appeared to have been less resilient in terms of recovering from war than Acholi, as we will see. This section therefore aims to use previously formulated analyses to regionally contextualise the disruptions caused by war-related events, which does not match the mainstream approach usually used in relation to the war against the LRA. We begin by focusing on the economic, social and agrarian dimensions of changes linked to the first major event of that period: the massive cattle raids of 1986-87. The second subsection focuses on the war against the LRA and the disruptions it led to, at various levels of analysis. This enables the final subsection to provide a comprehensive picture of the trends that interest us – agriculture and land/water management – in the two sub-regions, the comparison further highlighting the differentiation process that occurred and the specific characteristics of each.

After Museveni had taken Kampala, several events occurred simultaneously, significantly affecting northern sub-regions by bringing armed violence up country. On the one hand, some of northern sub-regions became the theatre of unprecedented and massive cattle raids that deprived them of from 80 to 90% of their livestock (Atkinson 2010, Gay & Torretti 2015). On the other hand, rebel groups slowly became established in Acholi, dragging the sub-region and later its neighbours into escalating violence and open conflict. As the Lango and Acholi sub-regions were suffering as the rest of the country from the collapse of the national economy, such major events led to a true agrarian shift in Lango, and to heavy distortion of its social structures. This fuelled deep and widespread distrust of Museveni and his newly-formed NRM government, as well as general fear of losing land, the last means of survival. As we will see in the following chapters, this situation has strongly undermined any subsequent public action since the implementation of any project, including irrigation schemes, quickly generates suspicion about a potential government hidden agenda, ultimately leading to open resistance.

### 3.1. Cattle raids and the Langi agrarian shift

This subsection focuses on how the shift in central power led to strategies which turned the northern sub-regions upside down, since the new, southern NRM-led government perceived them as historical opponents. After briefly describing the major events, we demonstrate how the 1986-87 cattle raids affected northern sub-regions in terms of economic and social

disruption, with a particular focus on the Lango sub-region where it brought a major agrarian shift. Indeed, we will first see how the loss of herds led to a re-organisation of the economy, with land as its new backbone; second we will see which new dynamics accompanied this shift. Finally, we will analyse the disruption of indigenous management of wetlands in the Lango society in the light of this shift.

In early 1986, cattle raids were carried out on an unprecedentedly large scale by Karimojong warriors. These pastoralist groups from north-eastern Uganda had organised such raids since precolonial times (Akol 1982), as a means of coping with dry years and a high cattle mortality rate. However, following Idi Amin's regime, the occasional raids turned into a well-established economic activity thanks to military training and the supply of firearms, reaching a peak in 1986-87. At the same time, the NRA was deployed in northern regions. Then,

In a situation where the people were still trying to come to terms with what had happened – against the back-drop of the country's political history – and were trying to understand where they stood politically, military, and economically under the new regime, NRA/M behaviour and attitude were enough to spark off a war. (Lamwaka 2016: 57)

It seems that in some areas, possibly in Acholi where herds were smaller than in the Lango and Teso sub-regions, the cattle raids were perpetrated by the NRA soldiers themselves. In other places, it is commonly believed that there was collusion between the NRA and Karimojong rustlers, since the appearance of army helicopters was reported before raids. In the Acholi sub-region, cattle raids tended to be attributed to Karimojong, alongside Tutsi groups, affecting Acholi as well, as Chris Dolan writes:

Tutsis, who formerly had been their [Acholi's] herd-boys, were suddenly the allies of the new [NRM] regime, and the Karimojong, who traditionally had sheltered Acholi children in times of adversity, were now said to be rustling away Acholi cattle. People's sense of social and cultural cohesion and material security was severely threatened. (...) People's principal asset base was stripped away (Dolan 2009: 87)

Finally, at a time when Museveni was reinforcing his newly obtained power, and the NRA soldiers were occupying northern sub-regions as if they were in conquered territory, testimonies suggest that the NRA did not make serious efforts to protect people from rustlers. Finally, the depletion of cattle, particularly in the Lango and Teso sub-regions, accelerated an

extremely brutal agrarian shift that had been slowly developing since the colonial period, as illustrated below:

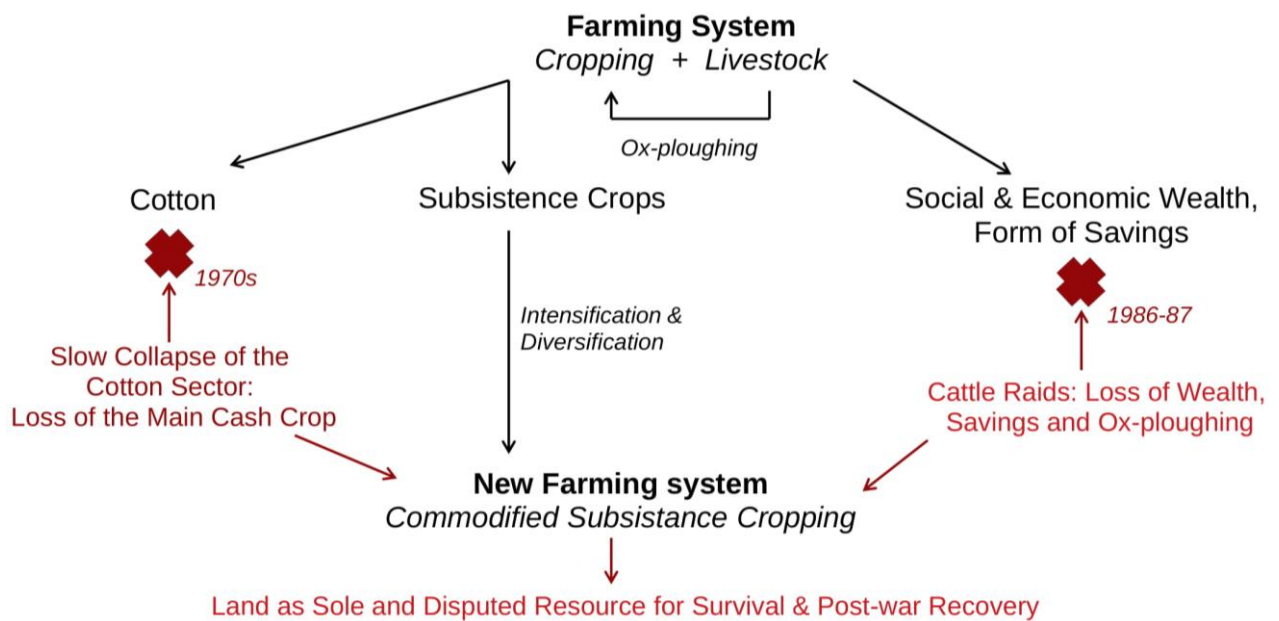


Figure 5: The Langi agrarian shift of the late 1980s (Torretti 2018)

These events thus heavily affected northern regions by impoverishing them to various degrees, depending on the importance of livestock in each sub-regional economy. They also affected a cultural identity strongly associated with cattle-rearing, disrupting the backbone of rural economies as related to land and daily routines.

Economies thus shifted from cattle to land, especially in Lango and Teso, where cattle-rearing had previously been essential. Due to the high level of violence and insecurity in Acholi, the 1990 livestock census did not take this sub-region into account. Nevertheless, in Lango, it showed that only about 65,000 cattle were left, the majority of people then owning one to five cattle – while the 1963 census had estimated about 371,000 cattle in Lango and 135,000 in Acholi. Moreover, the remaining cattle were often found in urban areas such as Lira town, where they were brought and sold after people ran away from villages due to the killing, looting and rapes which were perpetrated there. Consequently, in Lango, cattle raids deeply affected the rural economy since livestock was not only a main means of keeping savings there, but also the factor that allowed significant areas of land to be cleared and cultivated

every year thanks to ox-ploughing, in a context of the growing importance of commodified economy and population increase.

New generations also came, growing up with a perception not only that their cultural legacy had gone but that it was the new government that had deprived them of it. Indeed, fieldwork in Lira district – Barr and Amach sub-counties – pointed out a common belief of collusion between the NRA and the Karimojong rustlers to organise the raids in 1986 and 1987 –even sometimes directly accusing Museveni of having directly instigated the raids. Levels of distrust towards the new regime were extremely high after the raids, while statements such as “He [Museveni] took my animals and forced me to use a hoe” are commonly heard. Eventually the Bush war ended in a global context of collapsing cotton prices. Coupled with the structural adjustment plans that followed Museveni's seizure of power, the possibilities of reviving cotton production through the former co-operative system were quickly cut off, as we later will see. While the Acholi sub-region was being driven into growing violence and insecurity, in Lango people were recovering after the Bush war with land as their sole resource, ploughed by hoe, and on which subsistence crops were sown. The latter, illustrated in the graph below, were finally being fully integrated into the commodified economy, likely for want of an alternative.

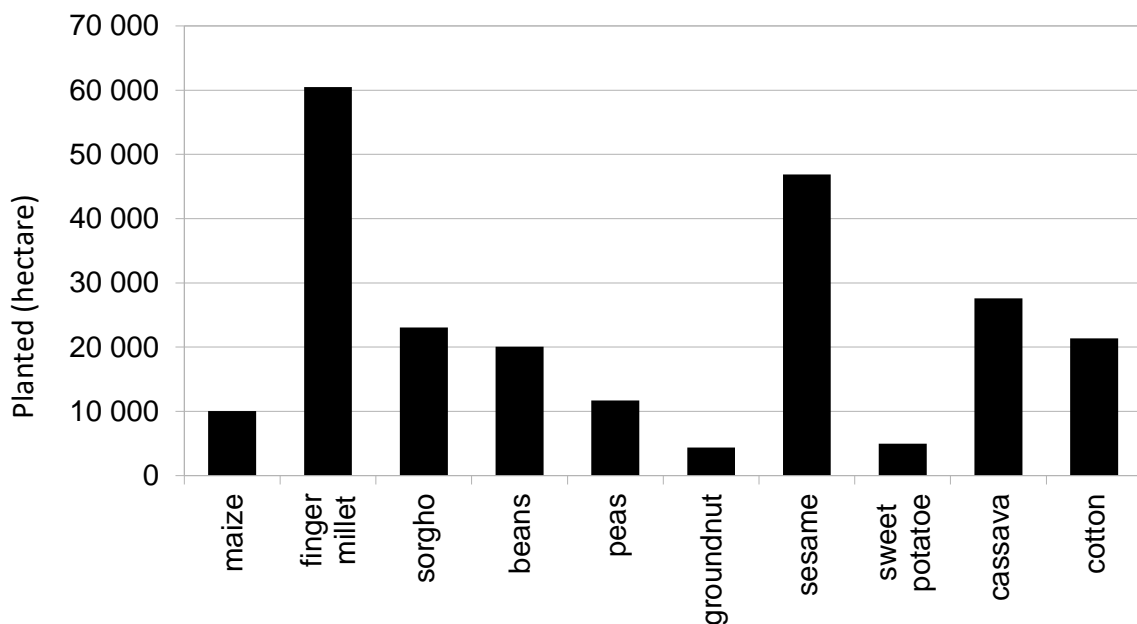


Figure 6: Estimated cultivated area in the Lango sub-region in 1990 (MAAIF 1992b)

Therefore, the 1986-87 cattle raids had a much significant impact on Lango than Acholi society, having more deeply and brutally destroyed and re-structured the economy and agriculture around new practices, guided in this by survival yet with low social prestige while fuelling significant resentment and distrust towards the new NRM government. Finally, this agrarian shift occurred in Lango in a context of increasing population, which could only further accentuate the pressure on land, as the population density was approaching 70inh/km<sup>2</sup>, while it was still around 25inh/km<sup>2</sup> in Acholi, according to the 1991 population census.

Land thus became the new resource for an impoverished Langi rural economy. Focus groups in Barr and Amach sub-counties in Lira district conducted in 2014 pointed out that land conflicts within communities greatly increased during the years following the cattle raids. Indeed, many trees locally used to demarcate land were cut down due to the expending urban demand for charcoal, a new business that could bring a little income for the impoverished rural households. Besides, competition for land was also reaching an unprecedented level then, irrevocably reinforcing household heads' control over land while significantly weakening the clans' authority over it. This competition became a source of conflict due to the unequal distribution of land among households. Indeed, on the one hand, inherited land results from the primacy of clan sections' settlements, as previously explained, often favouring dominant clan sections with bigger, more fertile land and land giving access to wetlands. On the other hand, since the 1970s, within clan sections, households' permanent land rights developed through cultivation: a person owned the land he had cleared and maintained under cultivation. With agricultural intensification and population growth, less land was left fallow and consequently the concept of land ownership developed in a context of unprecedented pressure on land. Consequently, after the cattle raids and the loss of ox-ploughing, the more vulnerable households were faced with more difficult access to land. It is therefore, likely that the raids deepened inequality in land distribution, a fact often presented during the interviews in Adeknino village, Amach sub-county, conducted in 2016 with elders:

It is cultural. Our grand-father was great. He covered all this area. Those days, people were used to migrate and settle. But if you move and move and move, you lose your land. (Anonymous, March 2016)

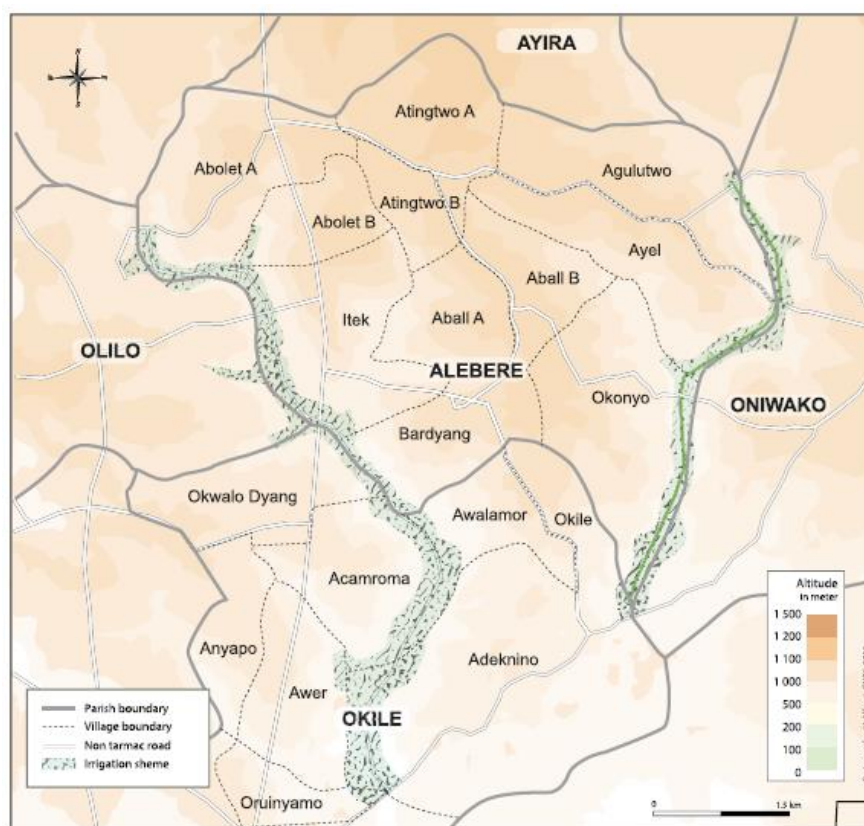
What you must understand, it is that before we would not give land to our sons. That is new because there is no bush to clear anymore. But my grand-father had all this area to cultivate (...)

For others their grand-fathers or their fathers they didn't have enough land. That is because they were lazy (Anonymous, March 2016).

Moreover, facing this brutal, agrarian shift, the institution of the working group once again evolved towards a new system: the *alulu* tended to replace the *awak*. The *alulu*, meaning “in turn”, often includes a savings system operated among its members. The terms of labour reciprocity also changed; the mutual agreement sought after for establishing the order in which plots would be worked being replaced by drawing of lots. The purpose of this change was to eliminate the disadvantages of members with weaker charisma or bargaining power, at a time when people most needed labour. However, a certain level of flexibility appeared as well, since members' turns could be sold within the group, thus also illustrating the commodification of the working group institution. Nevertheless, participation in such groups also tended to decrease for various reasons: among others, the reduction in the area of land cultivated by households leading to less need for labour, and a general trend towards the weakening of collective institutions to the benefit of households that were empowered in terms of land rights and, consequently, agrarian practices.

Finally, a significant, though rather hidden, change caused by the 1986-87 cattle raids was the disruption of the Langi indigenous wetland management system. Indeed, after the cattle raids, wetlands lost their main purpose as grazing areas. However, communal access to those areas remained vital as pressure on wetland resources rose. Access to water, and to materials for craft activities and house building started to be increasingly linked to access to wetland, since the growing population density was leading to resource depletion of the communal land in surrounding areas. Alongside the slowly increasing number of conflicts over access, conflicts of use emerged between cultivators and cattle-herders, since a few people – usually the most vulnerable – were left with little livestock while the majority had managed to some extent to restock with cattle. Therefore, as land distribution was unequal between clan sections due to local migration history, the same went for access to wetlands. Since areas surrounding wetland networks in Lango were early settlement sites, claims over wetland were made by the first established clan sections – though access to wetland was not denied to clan sections which had settled later. Access to and use of wetlands for grazing or gathering materials were

considered rather as favours granted<sup>43</sup> by early-settled, dominant clans to their neighbours. This situation also means that the distribution of indigenous rights over swamps is locally-based, potentially varying from one village to another – as distribution of clan sections within a village can significantly vary – and consequently unequal. For instance, the significant number of villages sharing access to the transformed Itek and Okile swamps illustrates how indigenous rights over wetlands can potentially be diversified. This was also suggested during the fieldwork conducted in Adeknino village – located to the south of the swamps, as showed by the map below – that is reported in the next chapter.



*Map 8: Administrative boundaries of the area surrounding the Itek and Okile swamps (Alfaut 2018)*

With the progressive change in patterns of customary land management, shifting gradually from clan to household control, families from the oldest or the most numerous clan sections

<sup>43</sup> Some elders reported during interviews that the possibility of refusing to grant those favours existed and still exists, closely related to the owner's personality rather than to any social consensus specific to Langi society.



could claim most of the indigenous rights over wetlands<sup>44</sup>. It is likely that until the cattle raids, neither colonial policy nor Obote's and Idi Amin's administration affected this diversified indigenous wetland management in Lango – especially later due to the lack of state capacity<sup>45</sup>.

Indeed, the loss of cattle caused a huge, unprecedented disruption of the locally-based wetland governance system. Since people now relied on agriculture as the only means of survival, a new dynamic of converting communal former grazing land into individualised blocks of cultivated land appeared, not only including wetlands but often adjacent areas as well<sup>46</sup>. However, not all Langi wetlands are concerned, but those perceived as suitable for cultivation. LEMU (Land & Equity Movement in Uganda) goes deeper into this analysis, linking the land pressure on the communal dryland to the wetland encroachment, considering that “wetlands and communal lands are adjacent and interdependent”: more particularly, “wetlands are threatened by community land encroachment and different types of land conflicts”, meanwhile “if grazing lands do not have effective management and protection systems” then “wetlands will not be protected” (Adoko & Krenz 2013: 1). Thus, this new pattern implies that the depletion of communal land is based on individual initiatives through land grabbing, the communal land being encroached for cultivation. Consequently, this process does not come from social consensus, but rather from disruption of the local balance of power, leading to a disruption of communal land management, be it in a dry area, a wetland or adjacent to it. Alongside this dynamic, conflict of ownership appeared, later intensified during the war against the LRA.

In conclusion, after a post-independence period marked by political crisis and national economic collapse, the exercise of central power eventually changed hands, with the

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<sup>44</sup> Thus, in Adeknino village, interviews showed that local sections of the Oyima clan and of the Ngurapoc clan have exclusive access to the wetland bordering the village and located outside the irrigation scheme area, as stated during an interview: “Ngurapoc and Oyima, they came early and occupied the land and raised [themselves]. So they are doing well” (Anonymous, April 2016).

<sup>45</sup> Nevertheless, the influence of the state on customary land management before the 1995 Constitution is another topic that would merit further study.

<sup>46</sup> This dynamic clearly worsened when the war against the Lord's Resistance Army reached the Lango region in the 2000s, due to displacement, impoverishment and population growth (Adoko & Krenz 2013: 4). In some other Ugandan sub-regions, the wetland area has also drastically decreased since the 1990s.

southerner Museveni taking over Kampala after a Bush war fuelled by anti-northern rhetoric. This change displaced armed conflict from south to north, which became the theatre of unprecedented cattle raids, depleting several sub-regions of nearly all their livestock. While, in Acholi, armed conflict continued, in Lango recovery from the raids occurred in the form of a profound, brutal agrarian shift. Land came under greater pressure as the population was growing and the resource become the sole means of survival. This had a harsh social, cultural and economic impact on Lango society, further emphasising the growing importance of land, coupled to disruption of its management, especially for wetlands with the loss of the grazing function. Commodification of the economy intensified, through land and subsistence crops becoming commodified. Previous social differentiation increased as well, with dominant actors – individuals or groups – increasing their land assets in a context of indigenous institutions and management being further weakened. It is worth noting that the Olweny irrigation scheme appeared in such a context of pressure on land and wetland management disruption, as we will see in the next chapter. Meanwhile, in Acholi, where livestock had less importance in the economy than in Lango, being less numerous, while ox-ploughing was less widespread, armed conflict did not cease but intensified. This prevented a return to peace and the dynamics of coping, as well as further differentiating both societies, as discussed below.

### 3.2. The war against the Lord's Resistance Army

This subsection explores the dynamics of the war which affected northern Uganda, and more particularly the Acholi sub-region, after the Bush war. Indeed, these major events are usually considered as highly socially, economically, culturally destructive, while mainstream discourse usually depicted the war as an internal, irrational conflict, characterised by extreme violence. Nevertheless, we will look at the constructed nature of the war against the LRA as the product of a long-term trend of ethnicising central power, and a means of restructuring the relationship to power when Museveni took over. Moreover, although this war was far from confined “only” to the two internal actors (Branch 2010, Finnström 2008, Dolan 2009) as usually stated – the LRA *versus* the government – we will not look in much detail in this subsection at the role played by other “external” actors, such as aid workers and international donors, which will be analysed in later chapters. We will rather describe the impacts on Acholi

society by giving an overview of the conflict, before focusing on dynamics related to the mass displacement it led to, and finally reviewing the events that led the war to end<sup>47</sup>.

The war against the LRA was indeed the last but not the least major disruptive event affecting both the Acholi and Lango sub-regions. The conflict started with the shift of central power from northern to southern leaders, and how this shift was handled by the new government. Indeed, Museveni's ability to take power in 1986 significantly relied on the colonial rhetoric dividing the country between southerners and northerners. Museveni thus unified different southern groups behind his leadership to fight Obote, and more generally any northerner who tried to hold power, as had been the case since independence:

The war became an important political instrument to literally blackmail people in the south to support the NRM – simply by equating a change in government with a return of violence and northern domination. (Mwenda 2010: 54)

After a five-year Bush war and the taking of Kampala, the National Resistance Army was then deployed to northern regions. The NRA soldiers behaved like an occupying army in enemy territory, looting, killing and raping civilians. By doing this the NRA initiated conflicts in the Lango, Teso and Acholi sub-regions, sometimes acting in collusion with Karimojong rustlers (Allen & Vlassenroot 2010, Branch 2010, Finnström 2008, Behrend 1999, Lamwaka 2016). Although war ended in Lango and Teso after a couple of years, in Acholi the conflict only intensified. Indeed, the “NRA/M's ill-considered strategy (...) would give birth to the very rebellion the NRA/M had expected” (Branch 2010: 34), in a context of political crisis within Acholi. Indeed, the sub-region's political and military elite went through a breakdown under the Idi Amin regime. Moreover, the return of the former Acholi UNLA young, male soldiers significantly challenged the indigenous lineage-based authority in the sub-region.

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<sup>47</sup> Indeed, in this section we are not looking for a comprehensive and precise understanding of the war against the LRA, but rather on the main dynamics that affected socio-political indigenous structures in Acholi and, to a lesser extent in Lango, as far as they fall within the scope of our research interests. For an in-depth understanding of this war, see among others Behrend 1999, Finnström 2008, Dolan 2009, Allen & Vlassenroot 2010, Branch 2011, Lamwaka 2016, Wiegatz *et al.* 2018.

Thus in 1986 in Nimule, former UNLA soldiers created the UPDM/A (Uganda People's Democratic Movement/Army), in response to civilian requests for protection from NRA violence and to the breaking of the Nairobi Peace Accord by the NRM. However, the movement quickly began to factionalise from 1987, facing escalating violence, and progressively losing civilian support as they started looting for their own survival. Out of the new factions, the Holy Spirit Movement (HSM) led by Alice Auma *Lakwena* – the “messenger” – received wide support. Indeed, it offered cleansing and spiritual redemption that many Acholi found attractive, in a combination of Acholi traditions with Christianity, until it was defeated fifty miles away from Kampala in November 1987. The end of this movement, however, left room for another to rise in Acholi: the Lord's Resistance Army, led by Joseph Kony. Meanwhile the UPDA eventually signed a peace agreement with the NRM government in June 1988, with most of the former UPDA soldiers being incorporated into the NRA. Unlike the UPDM/A or the HSM before them, some Acholi people were also a target for the LRA which considered the “administration and security apparatus of the NRM/A embodied in its Acholi agents” to be the manifestation of the “political corruption” of an “internal enemy” (Branch 2010: 40)<sup>48</sup>. Consequently, the “spiritual discourse of cleansing became one of violently expurgating the internal enemy from Acholi society”, creating “a regime of violence that might make sense from the LRA's perspective but has failed to resonate with the Acholi population” (Branch 2010: 41-42). Nevertheless, the demands that the LRA made through its manifesto were political, fuelled by a growing marginalisation of the northern sub-regions in national policies (Finnström 2008). Feeling excluded from Ugandan citizenship and the relatively rapid development that was occurring in the south, some perceived the LRA rebels as freedom fighters despite their use of extreme violence, as it criticised concentration of executive power in Museveni's hands, granted by the new Constitution, or the economic reforms engaged at the time:

The rebels feed on an increasing local discontent with neoliberal development in Uganda, particularly Structural Adjustment Plan and development measures demanded by the donor community. (...) The rebel's political claims threaten the ideological celebration of individuality and free choice, and the individual's alleged possibilities in the new world order of liberalised economics. (Finnström 2008: 116-118)

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<sup>48</sup> This perspective could only be reinforced by the Resistance Councils system that were then created, in a context where non-NRM sympathisers were kept from power.

If liberalism promotes neglect and marginalisation in the name of freedom, it may also promote the historical conditions of political violence. (Englund 2002: 185)

Indeed, the urgent need for foreign aid faced by Museveni led him to reconsider his left-winged ideology, as we will see in more detail in the Part II. This context transformed the conflict in northern Uganda from a threat into an opportunity for the new NRM government: by “allowing donors to take control of the policy and budget-making process, Museveni found that he bought himself independence and discretion to pursue his preferred military and political agendas” (Mwenda 2010: 50).

Simultaneously, the forced displacement of the Acholi population in 1995-96 – and much later the Langi and Iteso – into Internally Displaced People (IDP) camps, coupled with top-level unwillingness to conduct peace talks, caused the conflict to drag on for two decades. The Acholi people, and later Langi and Iteso, were thus caught in the crossfire between the LRA rebels on the one hand and the NRA on the other, forced into dependency in the life of the highly socially destructive, not to say deadly, camps:

The civilian population was a mere statistic that could be moved into what are politely called IDP camps but which in fact are concentration camps. There were few soldiers, mainly drawn from a state-organized local militia rather than from the mainstream army. Often, the soldiers lived inside the camps, where the civilian population provided them with a human shield against rebel attacks. Meanwhile, the rebels continued to attack the camps, killing and abducting children at will, as the cases of Barlonyo and Acholi Pii, where rebels attacked and in each case killed over three hundred people, so effectively demonstrate. Regardless of how people got into the camps (whether by running away from the rebels or by forceful eviction by the army), the government simply dumped them there and abandoned them. (...) Deaths from camp-induced conditions such as overcrowding and poor sanitation are estimated to be 1,000 people per week. The camps thus produced an outcome worse than the solution they were intended to provide: they turned out to be a death trap for the civilian population. (...) But this is how international humanitarian assistance produces outcomes at odds with the otherwise good intentions of its promoters. By providing food, shelter, water and other basic needs to the people in the camps, international humanitarian organisations achieved limited short-term humanitarian objectives. This was at the expense, however, of helping the government sustain a policy of keeping its citizens in concentration camps akin to those of the Nazis during the Second World War. (...) it shielded government from the consequences of its failure to provide such basic security. (Mwenda 2010: 55-56)

Life in displacement camps puts its inhabitants entirely in the hands of the Ugandan Government, the army, and the international community. People are made to depend on these agencies for survival. In the long run the situation is socially destructive (...). Dependency on food aid, inadequate though it is, had reduced the Acholi population to beggars, albeit reluctant ones. (Lamwaka 2016: 331)

Indeed, while the war was increasingly depoliticised in the international and national narratives, which often depicted the LRA as irrational (Finnström 2008, Dolan 2009), under such a “scorched earth policy” (Lamwaka 2016) people were kept under control by being forced into a state of survival – which in turn prevented the formation of any political organisation (Branch 2005). Under the IDP policy, displaced people relied on foreign donors for basic needs, the camps policy also facilitating the humanitarian assistance that supported it. Displacement therefore lasted from one to two decades in Acholi, leading to significant disruption of the social structures, in many ways in a situation of social torture where the so-called protected villages in fact saw the implementation of a policy of violation, debilitation and humiliation (Dolan 2009). For instance, with respect to the issues highlighted by fieldwork near the Olweny and Agoro irrigation schemes, as we will see in the following chapters, the death of numerous elders due to the dreadful conditions in the camps led to the loss of considerable knowledge including that related to land. Customary boundaries became uncertain in many cases, as did customary rights to land with a new spate of micro-conflicts within communities. Indigenous authorities were considerably weakened by displacement, while youths trapped in camp life or individuals in a dominant position no longer recognised bodies that used to wield authority.

While strong distrust of, and hostility towards, the government developed to the point that some youths began to see the LRA as offering a more appealing future (Branch 2005, Finnström 2008)<sup>49</sup>, about two million people were displaced during the LRA war (Atkinson 2010, Finnström 2008). Between 1991 and 2014, the population in Kitgum and Lira – the nearest towns to the Olweny and Agoro irrigation schemes – increased from 13,000 and 27,500 to 75,500 and 100,000 inhabitants respectively as a result of general insecurity (MPED 1995b, 1995c, UBOS 2005b, 2005c). In Gulu, the headquarters of foreign NGOs and international aid organisations during the war, the population increased from about 40,000 to about 150,000 inhabitants during the same period (MPED 1995a, UBOS 2005a).

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<sup>49</sup> Ronald Atkinson also explains that “forced encampment in these conditions meant forced dependency, forced vulnerability, forced humiliation, and forced congestion within camps and forced isolation from outside. The physical, psychological, social, and cultural damage caused by forced encampment is almost unimaginable.” (2010: 298).

The war eventually became globalised, in several ways contributing to its continuation and ultimately to its end, though several lulls occurred over the years. First of all, significant foreign aid allowed the NRM government to develop a regular, trained NRA army, renamed the UPDF (Uganda People's Defence Force). This indirect foreign support increased the army's ability to serve the government's interests. For example, deployment in Congo in 1998 allowed Uganda "to plunder the resources of their mineral-rich neighbour" (Mwenda 2010: 52). Such military operations partly removed UPDF focus from the Acholi sub-region. Secondly, the internal South-Sudanese struggle eventually expanded into Acholi when Karthoum started supporting the LRA by providing munitions, training, food, and safe havens in southern Sudan in exchange for the LRA's participation in the on-going Sudanese civil war. The Agoro hills became one of the favourite spots for the rebels to cross the border and consequently, in an attempt to prevent such back-and-forth movements, the area was heavily mined by the regular army. Thirdly, government propaganda aimed at denying the LRA's political claims was strengthened and, what is more, supported by the USA. After the World Trade Centre attack in 2001, the War on Terror launched by the American government favoured Museveni's stance by putting the LRA on the terrorist group list (Epstein 2017). Moreover, the USA started to significantly support the Ugandan army, and by doing so to support war over peace talks. This attitude probably influenced international condemnation of the LRA's exactions. Indeed, when the International Criminal Court (ICC) was created, one of the first warrants issued by the new international authority was against the LRA's leaders<sup>50</sup>. Finally, Museveni's choice of a military solution – a choice that we will explore in more depth in later chapters – for such a long time had political consequences as well. Far from submitting the Acholi population to the southern-led government, it had the opposite effect. Indeed:

it is hardly surprising that the Acholi, and other northern Ugandans more generally, voted massively for the opposition in the 1996 and 2001 presidential elections. (...) Voting

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<sup>50</sup> Caroline Lamwaka (2016: 421-429) wrote: "Some questioned the ICC's independence and impartiality, and wanted both the LRA and the Uganda Government (including the UPDF) investigated. Still others saw the ICC intervention as something that would jeopardise the peace process, since the rebel leaders would now fear to come out because they would face arrest and prosecution. (...) The ICC's role stirred mixed feelings, with some applauding the Court's emphasis on justice while other thought the ICC pursuit of a particular kind of justice, for a handful of LRA leaders, ignored local alternatives that emphasised forgiveness and reconciliation". As also stated by Adam Branch (2005), for the people that suffered from the LRA war over the long term, having peace and justice at the same time seemed impossible.

overwhelmingly for the opposition was a calculated political decision based on the belief that their very future was at stake under the current government. (Lamwaka 2016: 445)

As a consequence of the UPDF's empowerment and Museveni's willingness to end the conflict militarily, in 2002 "Operation Iron Fist" was launched. From then the war escalated, spreading to the Lango and Teso sub-regions as well, where the population was also eventually displaced. A ceasefire was signed in 2006, however this only displaced the LRA war from northern Uganda to southern Sudan and the Democratic Republic of the Congo. Recovery and reconstruction then started in a context not only of economic breakdown, but of more general collapse affecting every aspect of daily life, as a result of social torture. Chris Dolan conceptualises this as follows:

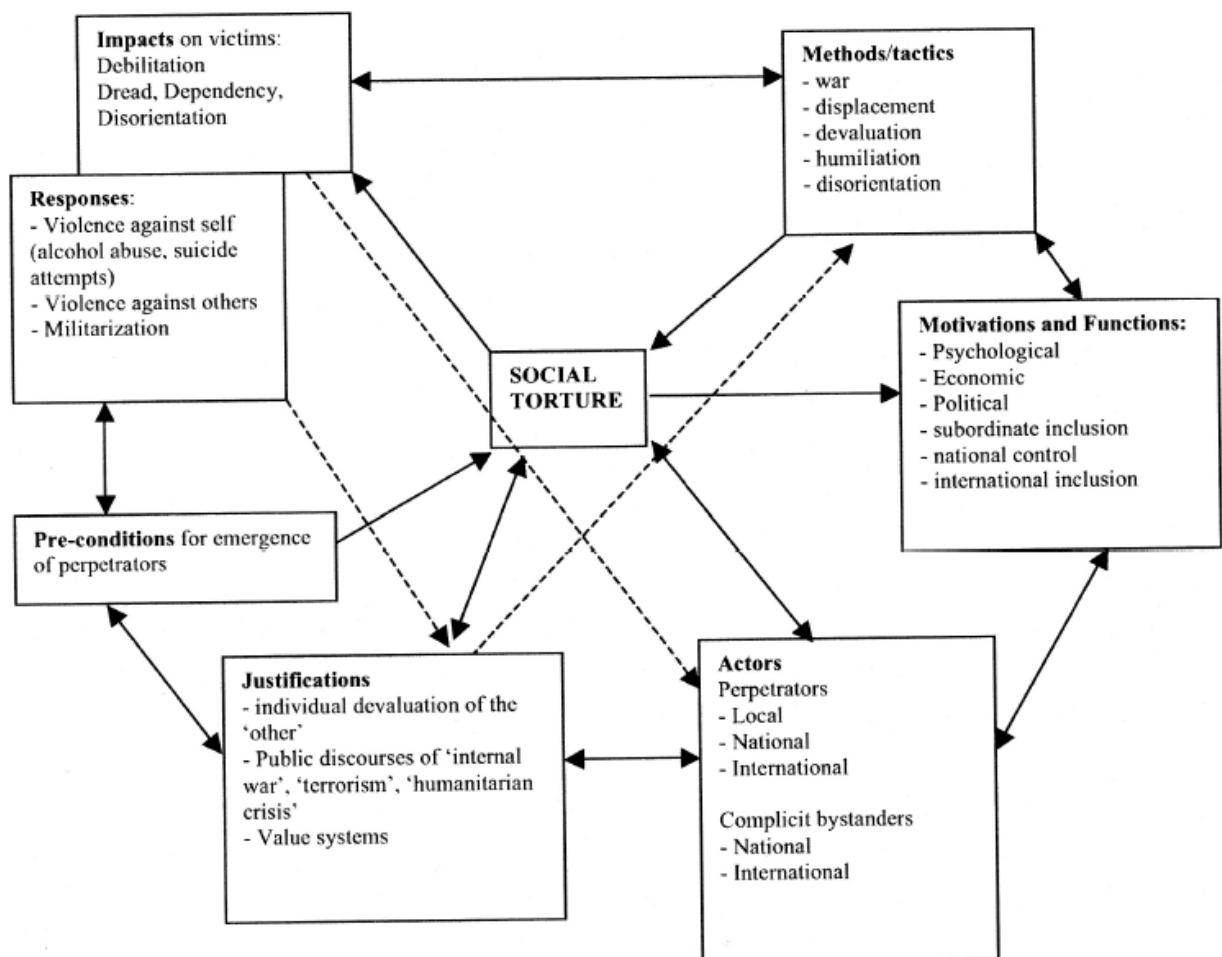


Figure 7: Elaborated model of Social Torture (Dolan 2009)

Thus this situation combines "numerous elements (...) such as the constructed nature of war, the political economy of humanitarian assistance, globalisation and global governance,



discourse theory and psychoanalytic theory” (Dolan 2009: 252), as seen in the case of the war against the LRA. The actors involved are then not limited to government armed forces but extend to international donors, multi-lateral agencies, NGOs among others. The Agoro and Olweny irrigation schemes thus fit into a context multiple actors being involved in Acholi and Lango, particularly foreign NGOs and agencies. Moreover, in the current Agoro sub-county for example, people have been experiencing displacement for over a decade. The area’s former main IDP camp became the biggest and only village in the sub-county, named after the English word: “Central”. It remained after the war, becoming the sub-county administrative headquarters. In Lango, Lira district, Barr town near the Itek swamp was transformed into an IDP camp, holding about 47,300 displaced people in 2005 after the well-known Barlonyo massacre. Returning home was a slow, irregular process. Some people also remained in former camps, for instance widows or families headed by children, as they no longer considered that they had a future in their home village. Indeed, the process of returning home created conflicts over land both between and within families, as social structures wielding authority and control over land were disrupted and many boundaries lost.

In conclusion, the war against the LRA, which lasted about two decades, used extreme violence to restructure the relationship to central power, in a context of a shift related to Museveni’s takeover. Though the LRA was once rather popular, and the NRA perceived as an occupying foreign army, the situation quickly changed. By continuing the war over the years, both the government and donors were serving a hidden agenda that we will explore in later chapters. With the camp policy, the whole of Acholi society found itself subjected to social torture, disrupting everyday life in many ways while placing the debilitated population in a situation of forced dependency. According to Chris Dolan’s (2009: 62) analysis, “the average civilian had, over the course of nearly two decades, experienced a relentless series of violations”. Eventually, following Operation Iron Fist, conducted in 2002, the war reached other sub-regions as well, including Lango, leading to displacement and socio-economic collapses. Struggle and conflict for land significantly increased in both sub-regions, alongside further weakening of indigenous institutions and authority. The resilience of the latter, however, unexpectedly proved to be stronger in Acholi than in Lango, as we will see in the following chapters. Indeed, the paths to recovery appear to have been different, possibly

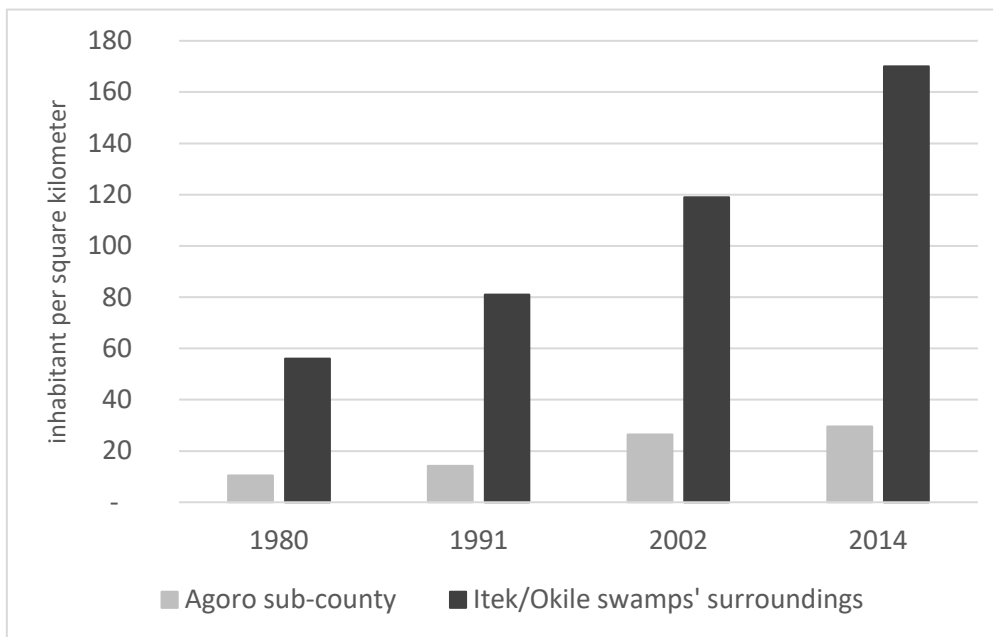
reflecting significant differentiation after decades of colonialism, post-independence political and economic crises, and finally, armed conflicts and displacements.

### 3.3. Significant differences between Lango and Acholi

This subsection therefore provides a picture of the main differences between Lango and Acholi, using evidence from fieldwork in the areas around the Itek and Okile swamps and in Agoro sub-county. Thus, coupled with the analysis of both long- and short-term agrarian and socio-political trends, several elements appear to be significant in the light of the comparison between the regions: a different relationship to land; a different relationship to agriculture, and finally different functions for indigenous institutions.

- **The recovery period: a different relationship to land**

Many land boundaries turned into bush, or knowledge of them was simply lost with the many elders who died during the war. In a context of extreme poverty – and, in Lango, high population density – micro-land grabbing significantly increased within families and communities. Others faced land conflicts as outsiders began to settle. The conflicts over land faced by those returning from the camps was thus significant (Rugadya 2008, Adoko & Levine 2004). The level of conflict is also linked to pressure on land caused by the increase in population. Although censuses show that the population nearly tripled in those areas between 1980 and 2014, in Agoro sub-county it remains low compared to Barr and Amach sub-counties.



*Figure 8: Population density in sampled areas*

*(Data from ISAE 1982, Census Office 1995a, 1995b, 1995c, Statistics Department 1995, UBOS 2005a, 2005b, 2005c, 2006, 2016a, 2016b, LDLG 2014)*

Therefore, as illustrated by the field observations quoted below, while in Agoro sub-county clan settlement sites merely changed, in Barr and Amach sub-counties, where land shifted mostly from clan to household control, it has been at the heart of intense activity, including buying/selling and leasing since then:

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***Field observations in Adeknino village, Amach sub-county:***

*The population distribution in Barr and Amach sub-counties, Lira district, changed after displacement. Land pressure is not equally distributed. In some areas, such as the sampled Adeknino village, the average acreage for families of middle-aged people (households with children, owning an ox-plough and whose land has yet to be divided between sons) is around ten acres (4 hectares). However, the general average in Lira district is estimated at three acres (Source: Lira district administration). While areas close to former camps – such as Barr town – are now heavily populated, with some people choosing to settle near a former camp instead of returning home, it seems that buying land has become a means to regulate pressure on it. Thus, there are cases where people previously established in Barr town are now found in Adeknino village.*

*This dynamic also sheds light on the main impact of the initial Olweny Swamps Rice Irrigation Project: the infrastructure network developed alongside the irrigation scheme in 1999-2000, thus opening up Barr and Amach sub-counties and linking them to both Barr and Lira towns. Therefore, an emerging land market appeared with values indexed on the proximity to a road – and thus to urban markets: “We are looking at the scheme but not at the neighbourhood. The impact [through opening roads] you cannot imagine it” commented the Lira district Chief Administration Officer during a conversation with engineers engaged in the rehabilitation scheme (01/06/16). In Adeknino village today, one acre (0.4 hectare) of land can cost from half a million to three million Ugandan shillings. Opportunities arose for a new source of income: selling land. This process, in the agrarian context following the shift of the 1980s, with households relying on agricultural production as source of income, seems to have led to a situation where social differentiation within villages only deepened due to a long, heterogeneous and unequal process of land distribution and fragmentation. (June 2016)*

**Field observations in Agoro sub-county:**

*Leasing land is an everyday practice based on mutual agreement, which does not necessarily include cash remuneration for ngom woko land, but which often requires clan leaders' approval – usually given without much problem. However, regarding land sales, informants – be they clan leaders or otherwise – were unanimous: “we don't sell it”, “land belongs to the clan so selling is impossible”, “it is not for one individual's benefit but for us all”, “the clan is there to protect land and would not allow it to happen”, and so on (Interviews between September and December 2016).*

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*Figure 9: Field observations related to land issues (Torretti 2016)*

Consequently, whereas in Agoro sub-county land globally remained under customary and thus communal management, in Barr and Amach sub-counties land became heavily involved in commodified exchanges, further weakening the authority of Langi clans, which have now become more or less symbolic with respect to land management compared to Acholi.

- **The recovery period: different agricultural practices**

In Lango, land therefore followed labour and livelihood in a more general trend of commodification, initiated with colonial agricultural policies. The Acholi sub-region remains relatively isolated and self-sufficient, though in the Agoro sub-county rice and vegetable growing certainly developed during the 1990s (Lamwaka 2016). Nevertheless, this

diversification, illustrated by the graphic below, came later and to a lesser extent than in Lango, which has been integrated into the market more deeply and for a longer time and.

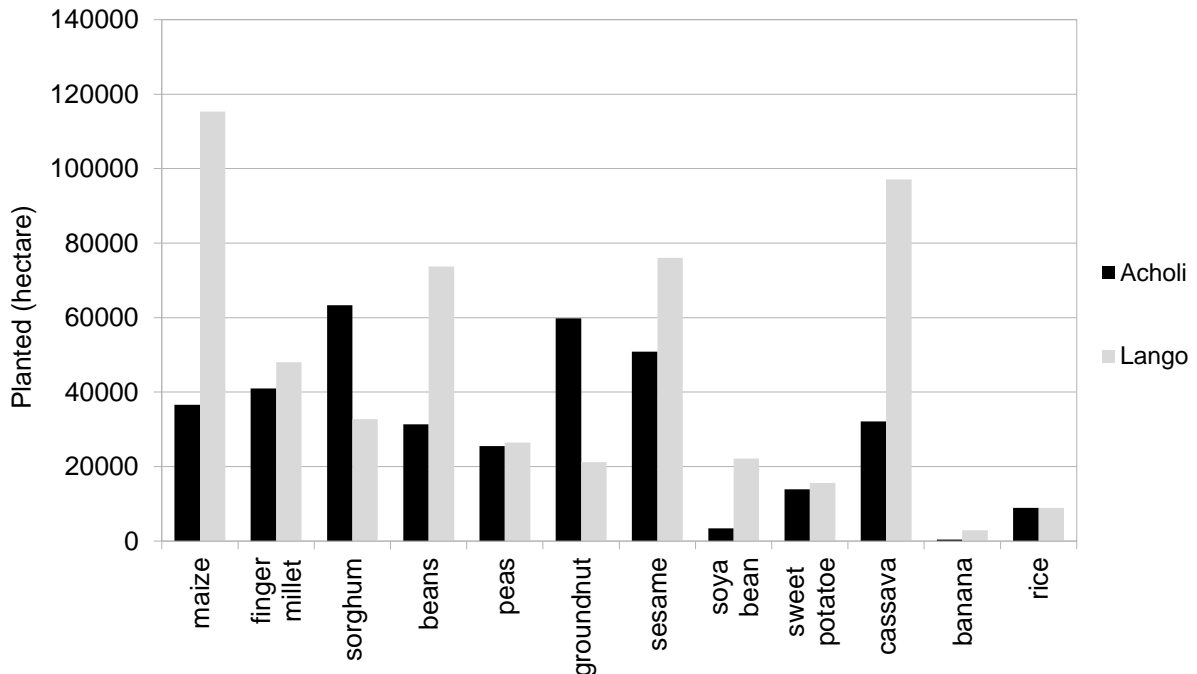


Figure 10: Estimated area under cultivation in Acholi and Lango in the late 2000s (UBOS 2010a, 2010b, 2010c)

Consequently, the impoverishment following the LRA war did not initiate this trend of agricultural diversification and intensification, but rather accelerated the trend that appeared out of transforming practices towards a cash-crop economy. Moreover, from the 2000s the growing importance of oilseed crops, and even forestry, in Lango and to a lesser extent in Acholi may be noted. Nevertheless, today, subsistence crops still constitute the clear majority of production as they have now entered the food market as well.

Finally, in Lango, the new post-war farming system, highly intense and diverse, does not reflect a homogeneous picture of rural economic structures within villages. It is rather closely related to the reconfiguration of land management in a context of high population density. Indeed, fieldwork conducted in 2016 in Adeknino village, Amach sub-county, highlights the high level of diversification of situations across the Lango sub-region. For most of the people interviewed, the cropping calendar was saturated, mixing crops on the same plot had become

normal and most land was no longer left fallow. Furthermore, the agrarian landscape has become “southernised” under the recovery policies, as shown by the widespread association between cassava and beans, the adoption of banana plantations and cattle restocking with the southern Ankole breed. Crop diversification was also high, including oilseed crops such as sunflower and soya bean, and rice, adopted as new cash crops, mostly since the 2000s.

Individual random interviews conducted in Adeknino showed that most households owning small acreages tend to select crops based on the need for quick cash rather than the need to preserve land fertility, which can be qualified as a “short-term driven cropping strategy”. Indeed, those households are the most vulnerable, since agriculture is their only source of income. The need for cash is often a family's priority and such households tend to select cash crops like sunflowers, even two seasons in a row, in order to meet their needs. Among such households, families were found who do not benefit from access to a swamp – meaning families from the later-established clans – or just married couples who inherited one to two acres<sup>51</sup> only, or mature households who have already started the process of dividing land. This can be described as short-term strategy, focusing on cash over fertility: “they don't care: even if the land is exhausted, they plant” (Anonymous, March 2016).

At the opposite, the interviews also demonstrate that when households have a certain acreage, they are more likely to select crops in a way that maintains land fertility, qualified in the interview analysis as “long-term driven cropping strategy”. Between these short-term and long-term strategies, some intermediary situations were encountered. Indeed, as far as middle-aged households are concerned, a turning point is reached when daughters get married, providing the household with a significant source of income in the form of dowries – often used to purchase land or an ox-plough. Therefore, households break through an important financial barrier when daughters get married, whereas when sons get married land has to be divided and dowries paid. Moreover, the kind of cash crop planted also reflects the household's level of income. While the most vulnerable households focus on selling subsistence production or oilseed crops, forestry has become a lucrative business for “big men”. Four cases of pine cultivation were found in Adeknino during fieldwork. The wealthiest

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<sup>51</sup> 0.4 to 0.8 hectare.

families in the village consider it as an investment for the future, though interviewees showed awareness of the damage that growing pine can cause to soil fertility. For others, forestry is also a means to protect land against grabbing since people's customary rights over land under cultivation are much more easily recognised. Finally, forestry also attracts the urban elite, which contributes to encouraging a land market dynamic in areas where population density is low but land is accessible by road. Once again leasing or selling land has become a source of income for households. However, the loss of acreage then places them in a situation which is likely to lead to a short-term cropping strategy, clearly diminishing land fertility – if it is not already low – and the capacity to sustain a growing population in the future. Various situations encountered during fieldwork portray this:



*S., married, has four children, including three helping in the field. Her husband inherited one acre (0.4 hectare) of land, which is not enough to sustain the family. They own neither cattle nor an ox-plough, and have to rent land from other people in order to survive, at a cost of 200,000 Ugandan shillings for about three acres (1.2 hectares) in 2016. When asked how they choose which crop to plant every season, she said: "Whatever. Anything.*

*We will see later. Maybe we can buy land soon, if my first daughter marries. We don't have money for school fees anyway". Between 2014 and 2016, they signed a contract with the Mukwano company and planted sunflower on the whole of their one-acre plot, relying on the income to rent land to grow food crops. Cultivating the swamp does not interest her: "It is too costly. But my children go there for casual work, like scaring birds for the rice growers. Me and my daughter we do weeding for [a local big man]. He owns big land in the Okile swamp".*



*I., married, has five children, including three helping him in the garden. He inherited eight acres (2.4 hectares) from his father, and owns five cattle and an ox-plough. Though he doesn't leave land fallow, he keeps fertility in mind as he plants peas, beans and soya for a few seasons after one or two years during which he alternates sesame, cotton and sunflower – at the time under contract to the Mukwano company. With the income*

*generated he was able to afford a motorbike called a "boda-boda" some time ago, which now contributes to the household's income as well. Since he is from a small clan, his land does not border wetland so he cannot encroach to cultivate. Nevertheless, "I'm waiting for the scheme rehabilitation, then I will rent a plot and grow rice. Growing in the swamp it is very risky, but it brings money. I want to try".*

*N., married and with nine children, three of them helping him in the field, belongs to the dominant Ngurapoc clan. He owns a few cattle with an ox-plough, and about twenty-seven acres of land. Some he inherited, some he bought. His father had some land as he divided four equal parts between his sons. Moreover, in early 2000, he was allocated two plots in the Okile swamp thanks to the irrigation scheme, on which he grows rice. He also opened land for cultivation next to the swamp, as "there is still land to open, you know, near the wetlands, where cattle were grazing before". In the upland, he can afford to leave land fallow for a few years, "for fertility" or because he "didn't want to work too much this year". His cropping calendar rotates between food and cash crops such as soya bean and chia seeds, a marginal but growing business. Besides, he sold a garden and is now one of the four villagers in Adeknino who has planted pines. He thinks he will then generate about twenty to twenty-five million Ugandan shillings: "It is a bet for the future, I have many kids, so with this I will pay school fees, and also rest when I will be old". Finally he runs a wholesale business, buying harvested crops in the village, then renting a truck to transport and sell them to small companies with which he has previously agreed prices.*



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Figure 11: Portrait of villagers (Torretti 2016)



In the end, fieldwork in Adeknino mainly demonstrates how differentiated agricultural practices became directly linked to households' financial situations – which turned out to be highly diversified and dynamic within one village and throughout people's lifetime. At the core of this transformation seems to lie the complete conversion of land from a communal resource into a commercial commodity.

- **The recovery period: different functions for indigenous institutions**

As land used to be managed by indigenous authorities, the control over land that such indigenous institutions still have today can indicate the extent to which they have been eroded, highlighting different patterns between Lango and Acholi, differences only deepened by the economic breakdown following the LRA war. In both sub-regions the indigenous authorities suffered from the war since displacement represented a disruption of social and cultural structures (Rugadya 2008; Adoko & Levine 2004; Finnström 2008, Atkinson 2010). In the post-war context, the weakening of indigenous authorities only increased, mainly due to their inability to contribute efficiently to solving the micro-conflicts that appeared over land.

In both Lango and Acholi, indigenous institutions were disrupted by the war: many knowledgeable elders and indigenous leaders died. Conflict resolution was then greatly weakened while the establishment of the state system through Local Councils became effective, directly challenging the legitimacy and authority of clans. However, while in Lango control over land has been progressively shifting from clans to families since the 1970s, in Acholi it seems that indigenous authorities were still pretty effective on the eve of the LRA war. Today, indigenous institutions in Acholi seem to have either recovered from the war and the experience of displacement or efficiently restructured themselves:

Acholi has emerged (...) as atypical of African land security issues, not as often supposed, because the post-conflict environment is fostering rampant and unmanageable land conflict but rather the opposite. (...) Internal resources for managing conflict within rural communities are recovering and increasingly effective. (Hopwood & Atkinson 2013: 61)

[There is] a widely-held opinion that land disputes are best dealt with at the local level, utilizing both cultural and other local leadership, and not in the formal legal system. (...) in less than ten years, (...) most Acholi have returned, resettled, and are currently utilizing clan-based land on which they have recognized customary rights (...). In a remarkably short time, moreover, this customary land has been largely reconstituted, organized, and managed along lines that embody principles and practices that are both long-established and broadly accepted. (Atkinson *et al.* 2016: 40)

On the other hand, in Lango, a plurality of forms of authority now co-exist to manage and solve land conflict at varying levels across the sub-region: neighbours of disputed plots are solicited, strong section clan leaders when they exist, Local Councils from village to district level, and so on. Similarly, the *alulu* institution has nearly disappeared<sup>52</sup>, replaced by the emergence of digging groups. Casually hired and paid in cash, the degree of commitment to the group is low. This has put an end to the labour reciprocity that prevailed until then. Following a similar trend to land, labour has thus also become a commodity – a process probably favoured not only by the breakdown of social structures following the war, but also by the impoverishment of households and reduction in their acreage. Nevertheless, although the necessity of being part of a group has decreased, it is undeniable that the war experience has greatly weakened trust and social capital within groups of people, leading them to rely more on the household unit rather than relationships and links that have been considerably weakened or, in some cases, simply no longer exist.

In conclusion, the recovery period shows clear differences between the Lango and Acholi sub-regions. This subsection illustrates some of them from various angles. Coupled with a distinct demographic pressure, land management was found to vary from one sub-region to another. In Lango, continuing the previous trajectory of resource commodification, land is at the core of intense market dynamics – mostly outside the control of weakened indigenous authorities – as well as being a clear factor of social differentiation and an indicator of wealth. Meanwhile, in Acholi, significant resilience within indigenous institutions after displacement has allowed a widespread return to “customary” land management, with land held communally on the basis of clan membership. On the one hand, such distinct land management is deeply interwoven, with agrarian practices. Following previous trends, these practices are much more intense in Lango, which is more populous and more closely-linked to the market network than Acholi. This again reflects much greater economic and social stratification within villages in the Lango sub-region than in Acholi. On the other hand, the distinct differences in land management between the two sub-regions also illustrates the distinct form taken by indigenous institutions as well as their resilience to the violent disruptions caused by the contemporary war-related events. Indeed, in Acholi, indigenous institutions turned to be

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<sup>52</sup> For instance, only about 10% of the people interviewed in Adeknino village declared that they were members of an *alulu*. This trend was confirmed during an interview with an Agriculture Officer at the Lira District Local Government (04/04/16).

unexpectedly – given the intensity and length of the war in this sub-region –resilient, at least compared to Lango, where multiple sources of authority emerged and some social structures, such as collective working groups, became highly diluted. Years after Lango and Acholi emerged from the war, sub-regional specificities thus appear deeper than ever and of considerable significance, as discovered during fieldwork.

## CONCLUSIONS

In this chapter, we aimed to identify the main changes and disruptions that have occurred since the eve of colonialism, as well as their impacts on agrarian and resource management practices. The purpose was to have an in-depth understanding of the background of both sub-regions, thus dissociating pre-existing dynamics from those directly induced by the implementation of the irrigation schemes in order to better assess the latter.

The first section therefore explored the early formation of Lango and Acholi. Though both shared similar environments, characterised by savannah and unreliable rainfall patterns, and similar agrarian systems, based on shifting, extensive grain cropping and cattle-rearing, significant differences appeared. In Lango, highly mobile groups developed an egalitarian and acephalous society, yet one in which diversity was high, based on the clan section as the main political unit. The extensive wetland network in the sub-region influenced settlement distribution in a context of significant numbers of livestock and the need for fertile soil. In Acholi, located further north, the convergence of severe droughts and events involving outsiders led to the formation of a polycephalous society with *rwotdoms* as the main political units. Though hierarchised, such a model limited the exercise of executive power by *rwodi*, and included solidarity mechanisms – such as labour and wealth redistribution, between lineages under the leadership of the *rwodi*. In both societies, land was communally held, yet considered to be less important than livestock, since mobility was high and cattle a great source of social prestige.

In the second section we first highlighted the ways in which colonial rule disrupted the early Lango and Acholi societies. After forcibly settling the population, which was then briefly ruled by southern Baganda agents, then by appointed chiefs, the colonial administration introduced an authoritarian chiefdom-based hierarchy which distorted the indigenous system. Moreover, colonial agricultural policies, which aimed to transform the agrarian sub-regional economies

into cash economies, imposed a certain level of commodification using cotton and the sale of livestock. These dynamics turned out to be more deeply disruptive to Lango society than to that of Acholi, due to the former's more central location – favouring access to infrastructure and a more suitable climate for cotton – and to an indigenous order unfamiliar with a chiefdom-based hierarchy. As the British Protectorate became independent, these disruptive trends continued. Social differentiation in Lango continued, with a trend involving growing commodification and economic inequalities in society, while agrarian practices intensified, the cropping calendar diversified and ox-ploughing was adopted. These trends have yet to be balanced with the period of Idi Amin's rule in the 1970s, which saw the national economy collapse over the years. Nevertheless, a shift slowly appeared in terms of land tenure, with nuclear families progressively replacing the clans' authority over the resource. Meanwhile, in Acholi, less populous and with a climate less favourable to agricultural intensification and diversification, land remained widely in communal holdings based on clan membership.

Finally, the third section addresses more contemporary events, following the Bush war after which a southerner, Museveni, took power for the first time in 1986. This event brought armed conflict to northern Uganda for the first time. The simultaneous occurrence of several events led to unprecedented cattle raids in 1986-87, after which the Acholi, Lango and Teso sub-regions were depleted of nearly all their herds. This represented a brutal economic, social and cultural disruption. In Lango, an agrarian shift occurred. With the loss of the cotton sector in the 1970s, and then livestock, land became the population's last asset, leading to micro-conflicts, probably emphasised by unequal land distribution in the sub-region. Former grazing land, such as wetland, came under pressure, with further weakening of indigenous institutions and further commodification of agriculture, widely integrating subsistence crops. In Acholi, meanwhile, the conflict continued with the war against the LRA, which led to massive displacement. With the implementation of the camps policy, the population was subjected to unprecedented social torture, which broke social structures in many ways, until the cease-fire in 2006 and the subsequent, slow process of returning home. Although the war did not spread to Lango before 2002, the sub-region turned out to be greatly affected as well. Indeed, the long-term dynamics of commodification, which are deeply rooted in Lango, widely contributed to the transformation of land into an economic asset, mostly outside the clans' control. This contributed to the considerable weakening of indigenous institutions, which hardly recovered from the war in terms of the exercise of authority in society. With the multiplicity of sources of authority – the clan, the Local Council introduced by Museveni,

decentralised services such as local courts – it appears that indigenous institutions' capacity to resolve micro-conflicts, especially the land disputes which significantly increased after displacement, has become weak. At the opposite extreme, Acholi turned out to be an atypical case in terms of land conflict management, since indigenous institutions significantly recovered after the 20-year-long conflict and are again effective, land still being communally held to a large extent. Such resilience is very likely due to the convergence of several factors. First, compared to Lango, the colonial chiefdom-based hierarchy was less disruptive, since the *rwotdom* system was familiar with a certain degree of hierarchy itself. Secondly, its far northern location and harsh climate made cotton production or the selling of livestock much less attractive, and therefore, less subject to commodification. Coupled with a low population, this allowed extensive, shifting agriculture to be maintained, which involved indigenous institutions in managing land.

Essential differences thus developed between Lango and Acholi, although they have significant features in common as well: general fear of land grabbing in a context in which land has become people's sole asset, as well as a deep distrust of the NRM government at the end of the war (Lamwaka 2016, Allen & Vlassenroot 2010, Martiniello 2013, Adoko & Levine 2004, Rudagya 2008). This constitutes the sub-regional backgrounds against which the Olweny and Agoro irrigation schemes were implemented.

## Chapter 2: The Olweny Swamps Rice Irrigation Project

In this chapter we explore the Olweny Swamps Rice Irrigation Project (OSRIP), aiming to assess changes caused by the scheme's implementation. To this end, the first section uses the previously identified sub-regional dynamics to provide an in-depth understanding of people's relationships to the Itek and Okile swamps, as encountered during fieldwork. We then analyse the main changes caused by the scheme's initial implementation, exploring various actors' strategies in terms of water (section 2) and land (section 3) management, thus revealing the establishment of a new logic as well as a change in the balance of power between actors. Finally, the fourth section will address how the scheme's rehabilitation, launched by the government in 2014, both reflects and feeds into these power relationships and the struggle to control land.

The Olweny scheme is a long-term project which has gone through various stages. After implementing the Doho and Kibimba rice schemes during the 1960s mostly in the south, the Chinese cooperation technicians originated the scheme, in 1982 by carrying out a feasibility study of an irrigation project in Lango during the Obote II period. The Chinese team proposed the irrigation of 800 hectares of land in Agwata sub-county, right near Lake Kwania, using a pumping system. However, the high projected cost and political instability led the project to be shelved – although the Islamic Development Bank (IDB) and the African Development Bank (AfDB) agreed to fund it in 1986. In Agwata, where a 50-hectare Nucleus Farm was nevertheless created due to strong local political pressure, the inability of growers to pay power bills and purchase fuel for the water pumps, coupled with the war against the LRA, led to the failure of the farm in the 2000s. The OSRIP remained shelved until 1992 when Euroconsult, a private Dutch consultancy company, was mandated by the African Development Bank to update the project using new global paradigms: resource management based on consultation with and the participation of local communities on the one hand, and environmentally-friendly sustainable development on the other<sup>53</sup>. In accordance with growing international paradigm of policy-greening, the first Environmental Impact Assessment (EIA) in Uganda was then carried out by Euroconsult in 1995, mandated by the African Development

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<sup>53</sup> See Chapter 5 for an analysis of the policy greening at the international and Ugandan levels.

Bank. The scheme was then redefined in 1997 to fit in with environmental considerations resulting from the making of new legal frameworks for wetlands.

Euroconsult designed a gravity-fed irrigation system based on non-retentive buffer dams and non-cemented water canals, relocated upstream from the Olweny swamps, in the Itek and Okile swamps, also including a protected area for biodiversity conservation. Unlike in Agwata, the new sites being targeted were characterised by an ecosystem that was closer to temporarily flooded lowlands than to permanent swamps. Construction finally began in 1999. However, as we will see in this chapter, the scheme quickly came to a standstill when the war against the LRA eventually reached Lango. In the Barr and Amach sub-counties, where the Itek and Okile swamps are located, returning home after living in camps was a slow, erratic process occurring between 2005 and 2008 for most people, sometimes lasting until 2011 or 2012. The irrigation scheme implemented in 1999-2000 had reverted to bush by then: the water channels and the main drain had filled up with silt and vegetation, most of the water gates had been stolen and the wetland vegetation had become dense due to years without either cattle grazing or cultivation.

## 1. LANGI WETLANDS FROM AN AGRARIAN PERSPECTIVE

This section shows how cultivation in the Itek and Okile swamps is rather an extension of trends initiated long ago and emphasised by post-war recovery, than the adoption of the agricultural practices the scheme was meant to promote. Indeed, as people returned to villages, neither government support nor locally-based collective action emerged to clean and rehabilitate the scheme. Nevertheless, with impoverishment following the war and increasing pressure on land, the Itek and Okile swamps were attractive – especially with a new legal framework forbidding wetland exploitation – and a minority resumed cultivation within the project territory. This section therefore focuses on the identity of the actors disputing the wetlands, exploring several key points: first, identifying indigenous as well as state rights, and how are they used in land-grabbing cases, and, second, coping strategies contributing to a new, highly diversified, locally-based approach to the management of Langi wetlands.

## 1.1. Indigenous and state rights *versus* grabbing

This subsection focuses on understanding indigenous and state rights, in order to obtain a better understanding of what is perceived as land grabbing in the Lango sub-region. Indeed, when Museveni took power, the Ugandan state went through a reconstruction process. Wetland management became the focus of a new legal framework for the environment, alongside the new NRM government's efforts to build a new state. As we will see in Chapter 5, wetland ownership changed: from that time they belonged to citizens but were held in trust by the government. This status was justified by the need to preserve biodiversity and therefore wetlands, perceived as vulnerable according to certain international environmental discourses. The new Ugandan environmental framework therefore defined legal activities, based on communal access, such as grazing, fishing and gathering of materials. Individual exploitation of wetland resources leading to any form of biodiversity destruction whatsoever, such as agriculture, was to be controlled by the government by issuing Wetland Resource Use Permits at the district level<sup>54</sup>.

With growing pressure on land and an increasing population, in a post-war context in which land had become the key resource for the majority of the population, land-use conflicts in wetlands increased significantly. Most people were aware that cultivation was forbidden in wetlands – in the absence of a permit. However, such permits were costly and difficult to obtain, since the applicant had to go to request it at the district level. Moreover, the corruption factor cannot be ignored, though it is difficult to assess its importance. In particular, the case of a local well-known elder we interviewed, who owns the freehold of 80 hectares in the Okile swamp within the irrigation scheme, emphasises this issue. In the Lango sub-region, the LEMU<sup>55</sup> pointed out that most of the permits delivered are actually illegal since they are supposed to include consultation of the communities concerned by the applicant's request, which is hardly ever done (Makmot *et al.* 2014: 6-7). For instance, in

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<sup>54</sup> Developing such a policy led to what Tobias Häller (2010, 2012) defines as the paradox of the presence/absence of the state, with an increasing number of different actors claiming the disputed resources previously held in a common pool.

<sup>55</sup> The Land and Equity Movement in Uganda is a Non-Governmental Organisation which has been operating in north and east Uganda for years. Its main aim is to facilitate land conflict resolution by linking communities with government agencies, but also by helping communities to understand land rights and ownership. More specifically, it also conducts research into indigenous wetlands and communal land management. Numerous informal discussions with the Executive Director and a NAMATI Programme Fellow, provided understanding of those issues.



Lango sub-region, only sixteen permits were issued between 2007 and 2012 while cases of fakes have been reported. In rural areas, cultivation of wetlands is mostly carried out by individuals, or small group of individuals, who deprive their neighbours by force of both their indigenous and state-related rights over wetland resources.

Such forms of land-grabbing lead to conflicts when, for example, grabbers block pathways, prevent cattle from grazing, deplete communal land of its resources, or inflame pre-existing conflict between dominant and smaller clan sections. Violence and threats are often used. Then, since clan leaders' mediation often fails<sup>56</sup>, indigenous or local council leaders can request assistance from the district in order to prevent or stop violence, as illustrated by letters addressed to the Lira District Environment Officer<sup>57</sup>:

We need collective assistance before we kill each other within this week. (Community of Otony wetland, Ayac parish, 30/08/2005)

He is making threats that he will cut people's cattle with *panga* [a machete] if he sees them around. (Community of Bar-Lwala, Boroboro parish, 11/03/2005)

We tried together but they have been so cruel to us and just continue. (Community of Agenga, Anyomorom parish, undated)

Land grabbing is carried out by a variety of actors. LEMU has identified three categories of land encroachment. The first is deliberate: the grabber is aware he has no right to turn communal land into his own, but uses his bargaining power – influence or wealth – to do so. The second, known as opportunistic, is characterised by people “trying their luck and waiting to see what happens” (Eilu *et al.* 2015: 54-55). This was the situation most often encountered during interviews in Adeknino village. The last category of grabbers are vulnerable or impoverished people, such as “elderly, poor, displaced people (...) who have no alternative place to live” (Eilu *et al.* 2015: 54-55). During fieldwork, casual discussions with informants illustrates these categories as shown below:

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<sup>56</sup> Among others, see, for instance, the LEMU publication written by Judith Adoko and Jeremy Akin and published in July 2014: “Is the clan justice ready to assume a greater role in land administration, as provided for in the 2013 Uganda National Land Policy?”, 4p.

<sup>57</sup> Between 2005 and 2009, the Lira District Environment Office sent 11 letters warning people to stop illegal activities while they received 24 letters from communities or local leaders: 5 requesting a permit and 19 requesting assistance and mediation in land-use conflicts.

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*D., just married and father of a new-born girl, inherited one acre (0.4 hectare) of land from his father. To extend it, he cleared a small plot bordering the swamp. He is aware that by doing so he was taking land from the community. Nevertheless, he explained that “for them because they are my neighbours and most of them from my clan, they know me, so it was fine. They know that my land is too little and that I don’t have money to buy or lease. So, if I don’t stop them from passing with their cattle to go in the swamp for grazing, then they let me cultivate, also because I did not take too much. They accepted”. For G., married and father of seven children, as soon as he can save some money, he plans to clean the bush near the swamp to extend his land. Indeed, he currently owns eight acres and will have to start dividing it soon for his eldest sons to marry. He says he has no other choice, as “this is the only land left to clear because people used it for grazing before”.*

*For K., cultivating in the swamp started with the irrigation scheme. After he left Barr camp and returned home, he cleared two plots in the wetland to grow rice: “No one was there yet, boundaries were not very clear. After more people came back no one claimed my plots. With the money of the rice, and after I married my daughter, I got an ox-plough and two cattle. I cleaned bush alongside the swamp. I am from this clan, Ngurapoc, so we have access to that swamp. Sometimes I can have problems when people try to go there with their own cattle because they don’t care about my crops so I have to chase them.”*

*Finally, regarding the case of the local well-known elder, the former Project Manager of the OSRIP wrote in a letter addressed to the Lira district Chief Administration Officer (07/03/2005): “You will recall that in the design and development of OSRIP, the government has major interest only in the swamp areas. During the implementation of the project however, some of these areas were claimed by [the elder] whose homestead is near the swamp of Okile. At one time, a team led by the DAO-Lira held meetings with and inspected the claim by [the elder] of his properties affected by project development. In the end, there was change of heart and [the elder] allowed further development and completion of some of the works to enable rice production in the area. Early this year however, the same [elder] prevented some farmers who had been growing rice in block 7L and 8L in Okile from continuing, claiming he has lease title of the wetlands and therefore owns and has sole rights over it. This was after more than 13 hectares were ploughed already in block 7L and 8L Okile. It is great loss and big discouragement to our farmers who are responding to government call to produce the rice for poverty alleviation and food security. The purpose of this letter is to request you to intervene and solve the problem so that the areas can be put under productive use for rice growing.” Nevertheless, in the following years, [the elder] managed to have his leasehold title converted to a freehold, with the support of the district court, including about 80 hectares of the transformed Okile swamp.*

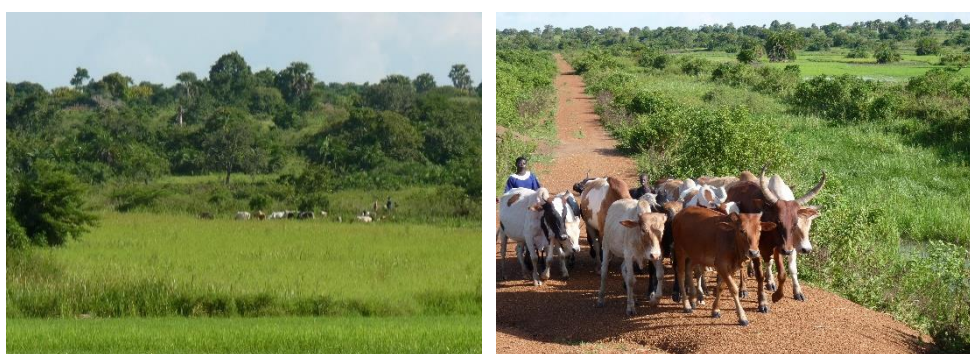
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Figure 12: Portrait of grabbers (Torretti 2016)

Such conflicts between cultivators and cattle-herders were not anticipated when the Itek and Okile irrigation systems were being designed, and this probably increased their number within the project area. Indeed, the mandated expert assessment to update the 1992 Environmental Impact Assessment, taking into account the new environmental standards, was carried out in 1995 by a Dutch consultant on behalf of the Euroconsult company, concluding that there “is currently very little grazing in the project area. In Itek and Okile (...) farmers living along the swamps will have to find other grazing areas or other sources of fodder if they want to keep livestock. The current policy is to promote zero-grazing in farming areas, and there is plenty of wasteland that could be used for fodder collection.” (van Strien 1995: 17). Like the previous report (van Strien 1992), it shows superficial understanding of agrarian practices on the ground in the area.



*Picture 3: Former communal land adjacent to the Okile swamp (green lowland in the background) turned into cultivated land (Torretti 2016)*



*Pictures 4 & 5: Cattle grazing in the transformed Itek swamp (Torretti 2016)*

Nevertheless, given the social and cultural importance of livestock in Lango, since the end of the war people have tended to restock: livestock numbers increased from about 60,000 shortly after the 1986-87 raids to about 640,000 units, a few years after the LRA agreed a ceasefire (MAAIF 1992c, UBOS 2010d). Numbers have therefore reached the levels they were probably at in the mid-1980s before the raids, but now with a population density that has nearly tripled. Such trends in cattle-rearing, alongside the need for cultivable land, are likely to have contributed to further increases in pressure on communal land, as illustrated by previous pictures.

In conclusion, the emergence of a legal framework for wetland management under Museveni's leadership furthered legal pluralism, as it introduced new actors – the state and decentralised agencies – while forbidding activities such as agriculture from the wetlands. Nevertheless, coupled to post-war impoverishment and a growing population, pressure on land – including wetlands – led some people to deploy various strategies to access land. As this resource has become the backbone of the economy since the cattle raids, most of the land left for individual appropriation is either communal or temporarily flooded wetland, where cultivation is possible. However the land-grabbers are a far from homogenous group. In Lango, the significant economic inequalities are reflected by who the grabbers are, and what means they use to access land. Opportunistic individuals, with bargaining power thanks to economic resources or in the form of a clientelist network, can instrumentalise the law, or more simply use their dominant position through social prestige, to grab land. The diversity of land grabbing processes thus appears to be the product of a long-term social and economic differentiation and stratification process within Lango society. Meanwhile, as we will now see in more detail, less powerful people, driven to various degrees by necessity, might also obtain access to former communal land by social consensus.

## 1.2. Coping strategies at the core of locally-based wetland management

Indeed, as highlighted in the previous subsection, social consensus can be reached – a situation that is briefly further explored in this subsection, based on fieldwork findings. In Adeknino village, a few cases were encountered of people owning land alongside or within a wetland that did not seem to create conflict. This can be explained in two ways. In the first case, tensions existed because the cultivator was preventing access to the wetland. But his

right to cultivate was also accepted due to his specific personal situation and vulnerability. Potential conflict was then resolved without mediation from any leader, with the cultivator and cattle owners agreeing on a compromise. In other cases, no one disputed the cultivator's right to use the land, due to recognition of a certain bargaining power, be it inherited, such as the case of the interviewed local elder's claim over some of the Okile swamp, or economic, as for a few families that have economic ascendancy over others. In Adeknino, there are actually few cases of wetland or communal land encroachment, possibly making their regulation easier. Indeed, grabbers not only often need to inherit land neighbouring wetland in order to legitimate their claim, but also to dispose of the capacity to cultivate it. Clearing bush, preparing land, often by hoe since ox-ploughing is hardly manageable on such muddy soil, facing the risk of crop destruction due to drought or flooding, are significant obstacles. These have had two consequences: the majority of encroachers cannot cultivate on a significant area of wetland. Cases of grabbing more than a few acres of land are rare and perpetrated by people relying on strong bargaining capacity, able to completely prevent communities accessing wetlands. For instance, the interviewed local elder's claim has hardly even been disputed as he not only benefits from strong indigenous legitimacy over some of the Okile swamp – being from the bloodline of a major and locally dominant clan –, but he also benefits from a certain social prestige due to his numerous trips abroad and his financial wealth, and he has demonstrated his ability to use the state apparatus to his advantage when the district court recognised his controversial claim, leading him to benefit from a freehold title including wetland. In such cases, the balance of power between encroachers and other people is highly distorted, leaving no room to attempt mediation or reach a compromise.

In conclusion, we have demonstrated that there is a plurality of cases of ownership, access and conflicts of use over wetlands – and more generally over disputed communal land. It also shows the need to explore and address such situations on a case-by-case basis, as indigenous wetland management has proved to be significantly flexible and dynamic, varying according to the specific background and environment<sup>58</sup>. Access to and potential uses of one particular

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<sup>58</sup> Joël Bertand and Emmanuel Nabuzugi (1991) thus wrote that customary rights are not static, but evolve under pressure of circumstances. In their paper they described similar conflicts over wetland access and use, when rice culture spread near Kyoga Lake in the southern Busoga kingdom in the early 1980s. Ten years later, a land management system drawn up by the indigenous people emerged from the conversion of communal grazing land into rice cultivation areas, carried out by local people. Social consensus was reached, locally, outside the state apparatus and after a decade of coping with changes.

wetland's resources are therefore complex and locally specific. On the one hand, this results from the clan sections' settlement history, which unequally distributed indigenous rights over wetlands among clan sections, as colonialism froze settlement patterns through forced settlement. On the other hand, local ecological conditions need to be taken into account, some wetlands being suitable for cultivation while others are not. Finally, as we have previously highlighted, land access is at the core of the balance of power between grabbers and their neighbours, also resulting from the long-term social and economic differentiation process initiated by the colonial logic of commodification. It thus appears that describing Langi indigenous wetland management as unique would be reductive. Finally, regarding the Olweny irrigation scheme, another layer of complexity has been added since the swamp has been transformed from communal land to a project territory, involving individualised plots physically demarcated by water-related infrastructure, as we will now see.

Henceforth, according to the terminology encountered during fieldwork, land within the Itek and Okile swamps will be called either wetland or lowland, while surrounding land will be defined either as dryland or upland.

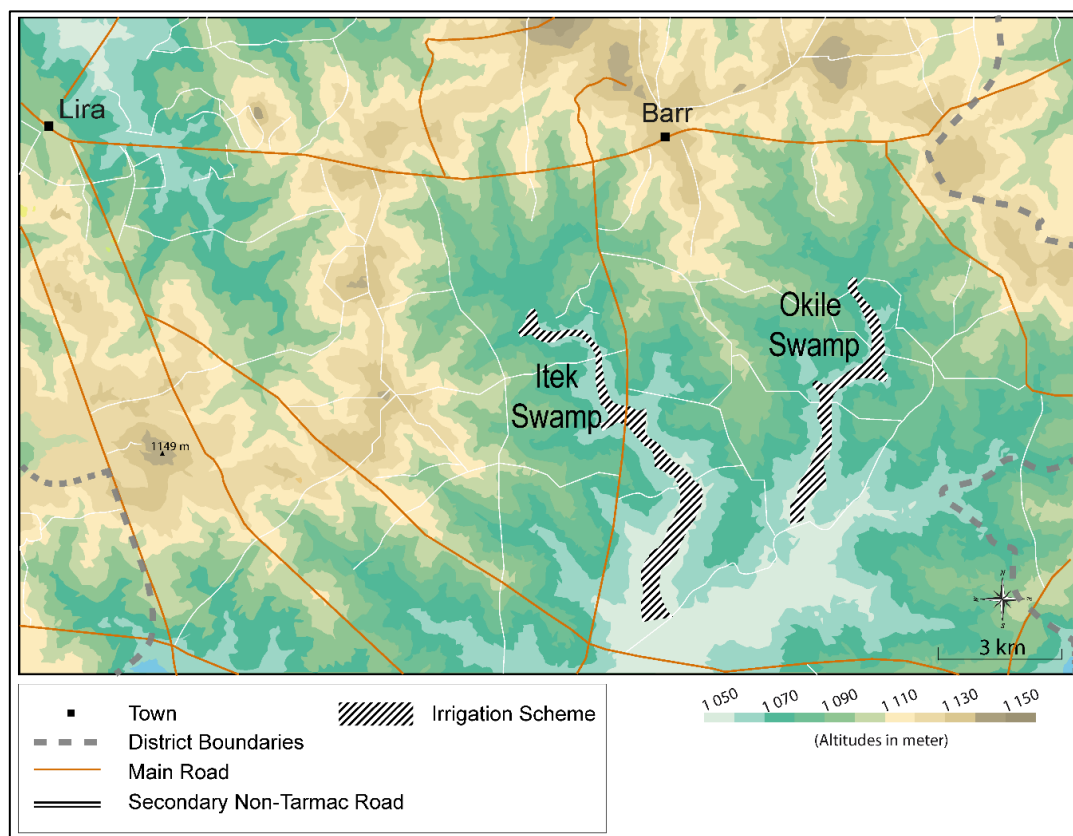
## 2. MANAGING WATER

This section explores how the implementation of the scheme led to changing practices with respect to water, as it introduced unprecedented irrigation technology and rice cropping into an area previously communally held for extensive activities, such as fetching water or other resources, fishing, and grazing. Consequently, transforming communal land into cultivated land introduced a new relationship to water, now qualified as water for production or agricultural water, to use the project terminology. To understand, therefore, how the scheme was appropriated by users, the first subsection explores the implementation of the hard component – i.e. the physical infrastructure – as well as the soft component – i.e. how users were expected to use water according to the project guidelines. The second and third subsections analyse the appropriation mechanism and coping strategies adopted by users, focusing on the adoption of rain-fed rice-growing on the one hand and, on the other hand, the strategies used to cope with the risky investments linked to this type of cultivation.

## 2.1. The Olweny scheme: design and implementation

This subsection first describes the physical environment in which the Itek and Okile swamps are located, before focusing on the scheme's design and implementation phase from 1999 to 2003. Indeed, the scheme was quickly built in 1999-2000 and ran for a few years with apparently little assistance from the district administration, before collapsing as the war against the LRA spread to Lango.

Located in gently sloping valleys dissecting a rolling plateau, the irrigation systems of Itek, 400 hectares, and Okile, 210 hectares, are both about 200 meters wide and ten kilometres long. Twenty kilometres east of Lira town, they are at the core of a 170km<sup>2</sup> watershed fed by rainwater and runoff, as illustrated by the following map. The micro-topography is rugged with, on average, a slope coefficient of 0.4%, which does not always favour surface water flow to Kwania lake – the main outlet located about twenty kilometres to the south. During the dry season, from October to March, some areas are subject to groundwater upsurge, which maintains a certain level of humidity in the soil, generally higher in the southern parts of the swamps.



*Map 9: Itek and Okile swamps' catchment areas (Alfauert 2019)*

The final design of the two irrigation systems was composed of a main upstream, non-retentive buffer dam for each swamp from where water was supposed to flow by gravity in three channels:

- two water collecting channels along both sides of each swamp to bring water to the plots, with one water gate per ten plots;
- one central main drain to evacuate the water downstream from the plots directly or through one culvert per ten plots.

To allow smooth water flow and to avoid pools of stagnant water, land levelling was also planned for. Therefore, the irrigation systems were designed to be rain-fed and gravity-fed, with excess water managed by allowing it to flow through the main drain and, during drier periods, by using water stored in catchment areas thanks to the main buffer dams and a few smaller lateral ones. The sketch below illustrates the implemented design:

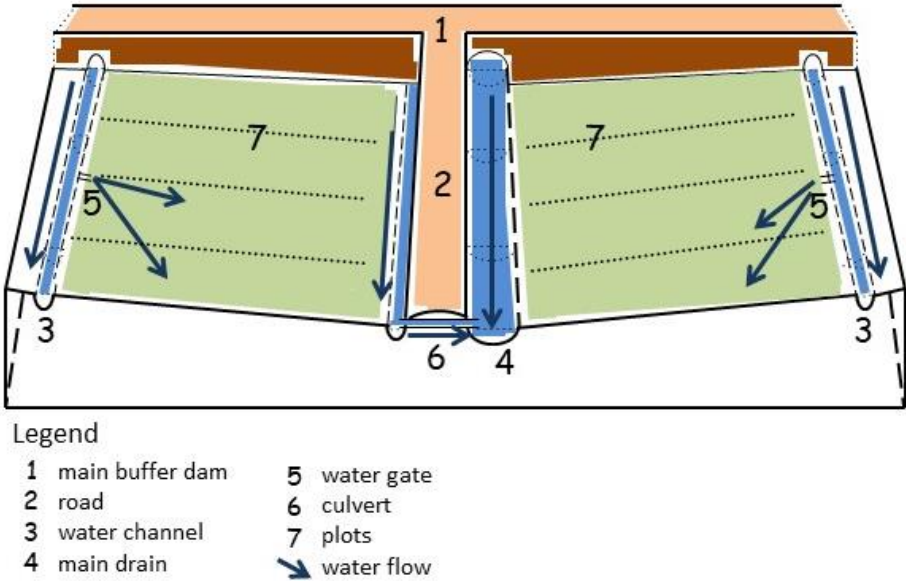


Figure 13: Design of the 1997 Olweny scheme (Gay & Torretti 2015)

As previously mentioned, with the increasing importance being given to the environment in the 1990s, the 1997 design led to such schemes being implemented without including any permanent structures except for the water gates, culverts and pipes (MAAIF 1997), in order to prevent disruption of the hydrological cycle and loss of wetland biodiversity. The water-pumping system designed by the Chinese team was thus not implemented. Moreover, the “protected areas” within the transformed swamps were to be left untouched, scattered within the irrigation systems. The design of the OSRIP was thus as illustrated below:



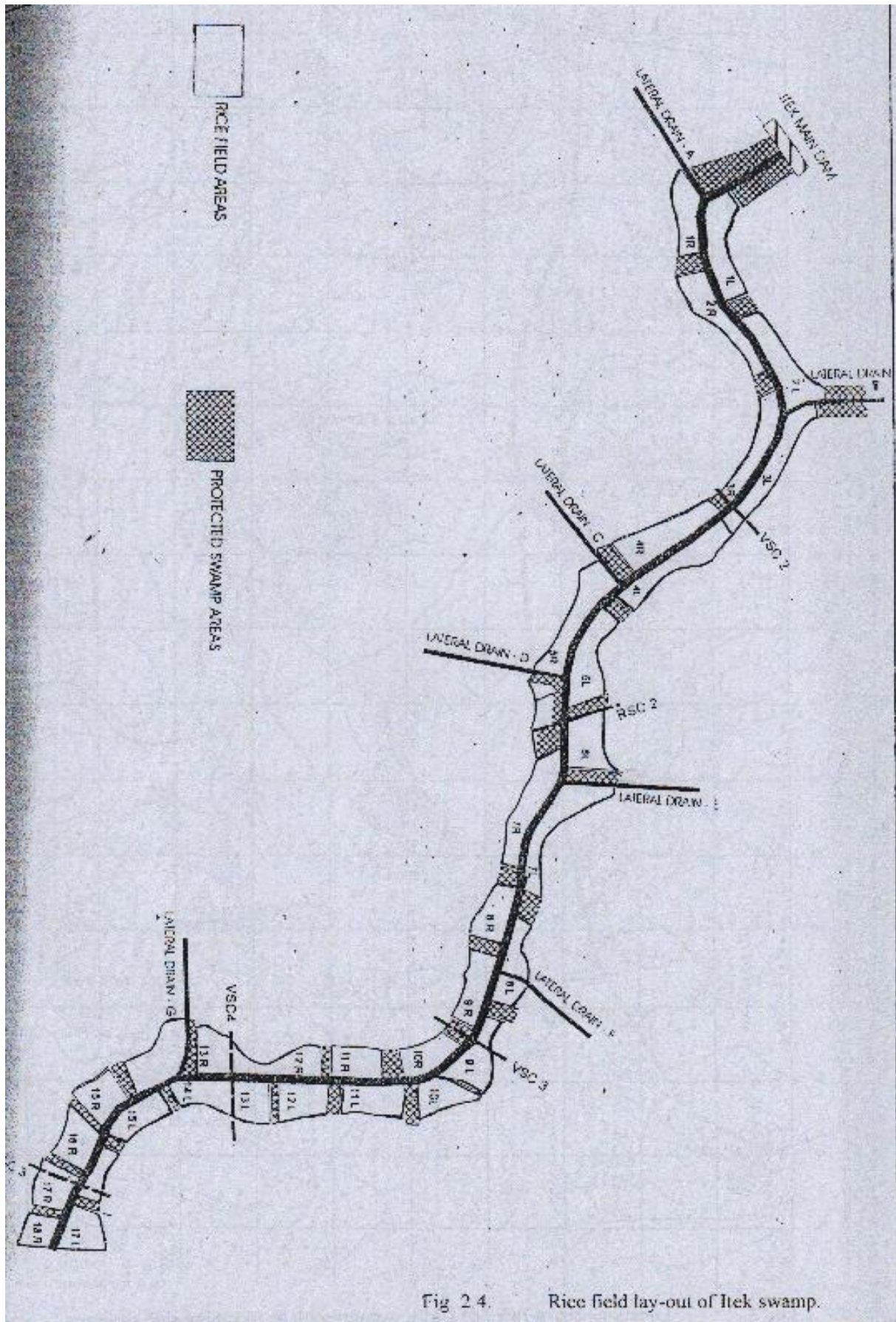


Fig 24. Rice field lay-out of Itek swamp.

Figure 14: Design of the transformed Itek swamp (van Strien 1995)

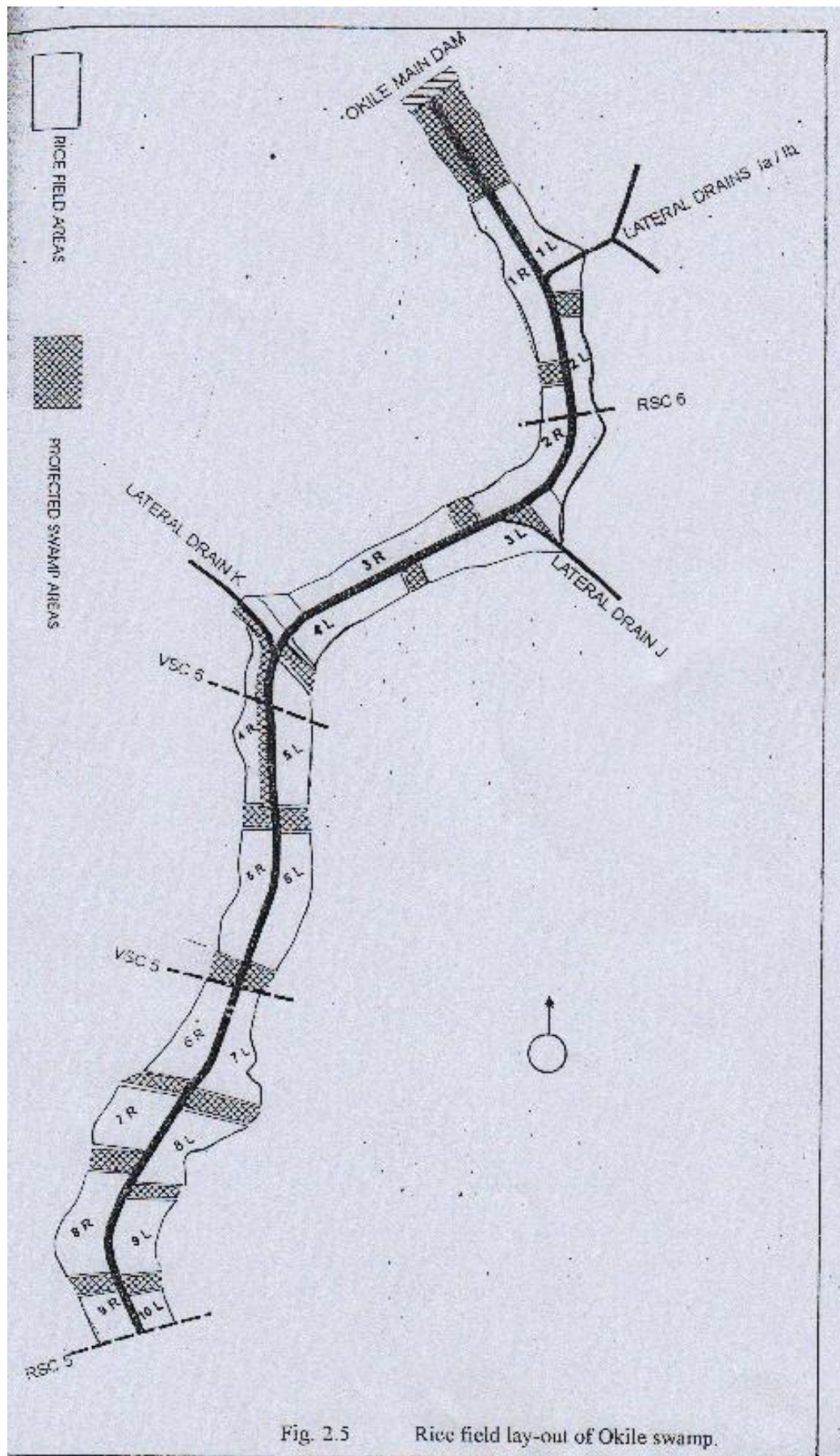


Figure 15: Design of the transformed Okile swamp (van Strien 1995)

For the infrastructure elements to be self-maintaining, the importance of maintenance was highlighted in the soft component of the project. Indeed using earth channels requires regular cleaning and digging to avoid silt accumulation and vegetation growth, particularly in the main drain, without which water flow would quickly become difficult to manage along the eight and ten-kilometres long irrigation systems. Consequently, also influenced by the increasing importance ascribed at that time to community and participative management as a key to project sustainability, the institutional framework finally chosen relied on growers being heavily involved in daily operations. At the plot scale, they were expected to dig small water channels by hoe every growing season to evacuate excess water. To ensure that this operation was carried out, as well as to allocate water by opening and closing water gates, growers were expected to appoint plot leaders among themselves. Plot leaders were also expected to ensure that growers were all following the same cropping calendar.

At a higher level, production blocks were also designed, gathering together areas under the supervision of several plot leaders in accordance with the project master plan. Growers were therefore also expected to elect block leaders, who had several tasks. On the one hand they were supposed to supervise water rotas between the different blocks, supervise cleaning and digging of the collector water channels and main drain, and solve any problems encountered by plot leaders. On the other hand, they were supposed to collect members' fees from the growers on behalf of the overall managing entity: a co-operative society, established by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) during project implementation and under whose authority growers were meant to be as members. The co-operative society was supposed to be led by an executive committee under the leadership of an elected Chairman. This body was also meant to be in charge not only of water and more generally supervising scheme management, but also of post-harvest and commercial activities such as renting a tractor to its members for ploughing, making small machines available to them, allowing a certain level of production mechanisation, and finally storing and marketing growers' production. To carry out those activities distinct committees were supposed to be set up.

However, such a self-governed irrigation scheme encountered significant challenges on the ground, and therefore was not adopted by people living in the areas surrounding the swamps. On the one hand, although this institutional framework illustrates the then international paradigm of participative community management, it remained disconnected from local social

realities. Indeed the design process remained top-driven and imposed, like most medium and large-scale irrigation schemes across Sub-Saharan Africa since the 1960s mostly – with little success, their failures in different countries highlighting the need for a better understanding of local social dynamics. Other authors who explored these topics found that the absence of a link between the pre-existing social structures on the ground and an institutional framework designed and imposed “from the top” could hardly provide optimal conditions for establishing self-governed irrigation systems (Häller 2010, Bertoncin & Pase 2012).

Moreover, in this context, it is unclear which events or elements prevented completion of the implementation of the project’s hard and soft components, although corruption and rising insecurity in the sub-region probably made significant contributions. Nevertheless, it appears that land levelling was not conducted within the project area. Since the topography varies significantly at the micro level, as illustrated by the land level profiles below, this absence of levelling likely affected the willingness of growers to practice irrigation, since it was therefore difficult for water to flow by gravity to each irrigation system level.

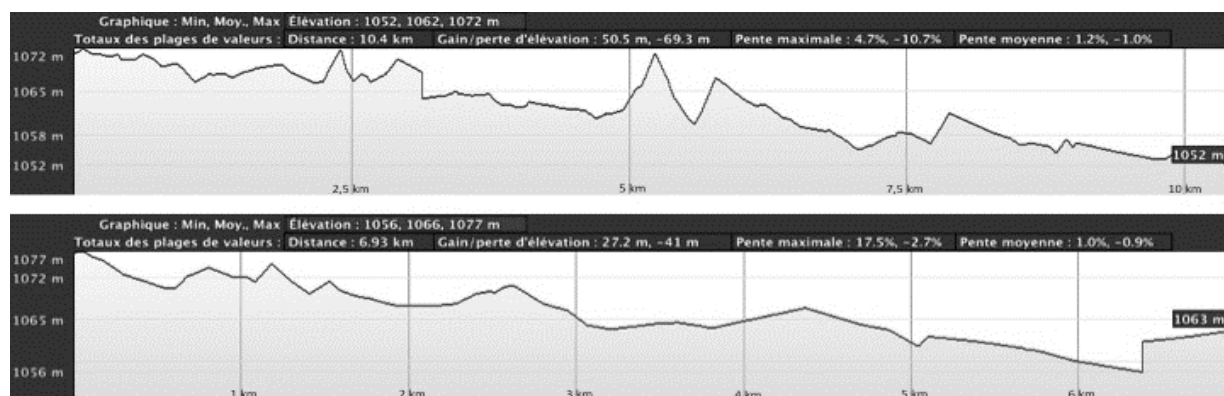
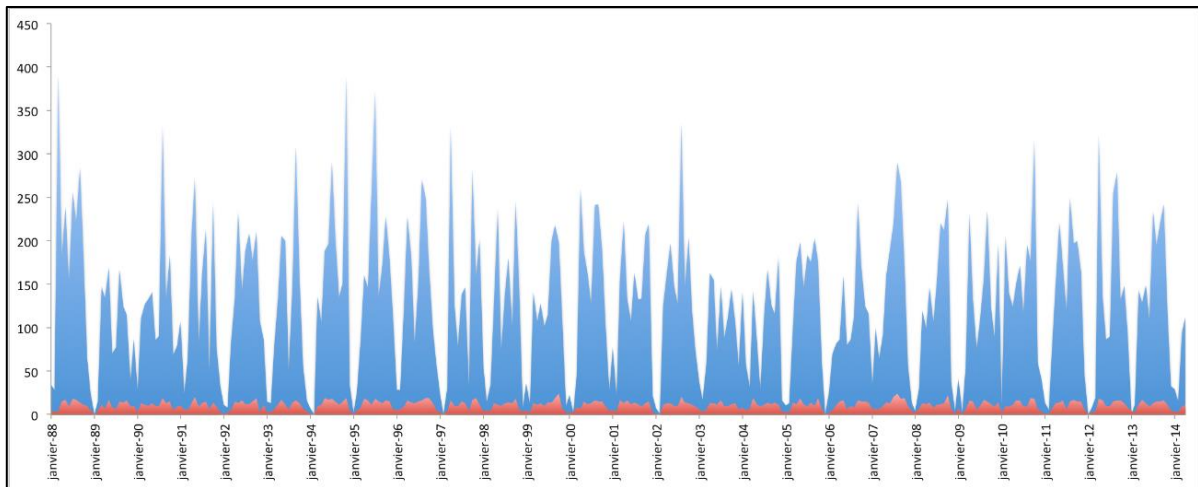


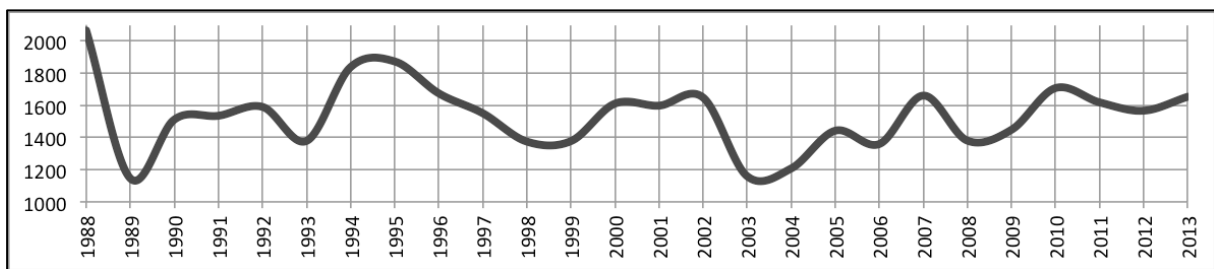
Figure 16: North-south topographical profile of the transformed swamps at Itek (top) and Okile (bottom) (data from Google Earth, 2014)

Secondly, the planned road network was unevenly developed, leading some areas to be well connected to the Lira road while others remained remote – more particularly around the Okile swamp, since the project’s administrative headquarters and other buildings were concentrated in northern Itek. Finally, the dams appeared to be under-dimensioned or at least, ten years after project implementation, clearly unable to contain flooding during particularly rainy years. Indeed, on the one hand, the severe technical difficulties involved in transforming swamps or more generally lowlands into cultivated areas in tropical Africa are known and established after several decades of experience, mostly since the 1960s (Lavigne

Delville & Camphuis 1998). On the other hand, the local rainfall pattern is characterised by a high degree of variability not only within each year, but also from one year to another, as shown by the following figures:



*Figure 17: Rainfall pattern in millimetres (in blue) and rainy days (in red) per month from 1988 to 2014 (Lira meteorological station data, collected by the author in 2014)*



*Figure 18: Rainfall pattern in millimetres per year from 1988 to 2014 (Lira meteorological station data, collected by the author in 2014)*

As illustrated above, a few years after the project was implemented, rainfall decreased, leading part of the swamps to dry out. At the opposite extreme in 2010 – with most people back home after the 2006 ceasefire – a sudden increase in rainfall led to flooding and crop destruction.

Coupled with an irregular micro-topography, this resulted in situations where varying degrees of localised flood and drought could occur simultaneously depending on rainfall (see pictures below).



*Picture 6 (left): Flooded lateral dam in the rainy season (Torretti 2014)*

*Picture 7 (centre): Flooded road in the rainy season (Torretti 2014)*

*Picture 8 (right): Flooded culvert and main drain in the rainy season (Torretti 2014)*

This unpredictable rainfall and the locally changeable micro-topography led to a situation where users favoured individual strategies over collective action, emergence of the latter being made all the more difficult in a context of disrupted wetland management alongside the agrarian shift and growing civil war. Indeed, as previously highlighted, most of the people in the Lango, Acholi and Teso sub-regions hold the current NRM government responsible for the 1986-87 cattle raids, either due to testimonies that the NRA were involved or by failing to protect them from the Karimojong raiders. Strong distrust of the government followed. In this light the irrigation scheme initially appeared to be an attempt to grab land, such fears being exacerbated by the major importance that land had acquired as an economic resource since the agrarian shift. Consequently, the project was not welcomed, while some local leaders also opposed it, more particularly in the Okile swamp – where, for instance, prominent people like the interviewed local elder claimed land in the context of wetland management disruption. The level of distrust during project implementation can be illustrated by the plot allocation process, which occurred in 2000. While about 3,000 plots were marked out, only about 1,850 were actually allocated (Ongica 2001), due to people rejecting the project. Consequently, the minority who did support it took advantage of the situation by allocating themselves several plots. It seems that such resistance was stronger in Okile than in Itek, for various reasons. First, the more remote location led to greater insecurity – and to heavier losses during the cattle raids – as well as making the project less attractive – the headquarters and therefore investment in machines and buildings for administrative and storage purposes were concentrated in Itek. Second, and probably related to the first point, local leaders opposed to the project seem to have had a stronger influence on people. Nevertheless, it seems that after rice growing was demonstrated by a leading minority of supporters – mostly individuals with

a certain level of economic standing or indigenous/local authority – the project areas were finally cultivated, to the extent that the “protected areas” were encroached upon as well. In a context of growing insecurity, this illegal cultivation was tolerated.

Finally the co-operative society, although it had perhaps been effective some of the time, broke up, and cultivation of the swamps ceased as the LRA war spread through Lango. People either left or were displaced, and the Itek and Okile irrigation systems once again became covered with bush, as illustrated below:



*Picture 9 (left): View from the main dam of the main drain in Itek filled with silt and vegetation in the rainy season (Torretti 2014)*

*Picture 10 (right): Lateral collector channel dry and filled with vegetation early in the rainy season (Torretti 2014)*

However, although war deeply disrupted people’s appropriation of the scheme, it is not the only explanation for their failure to adopt the designed irrigation technology, as we will see.

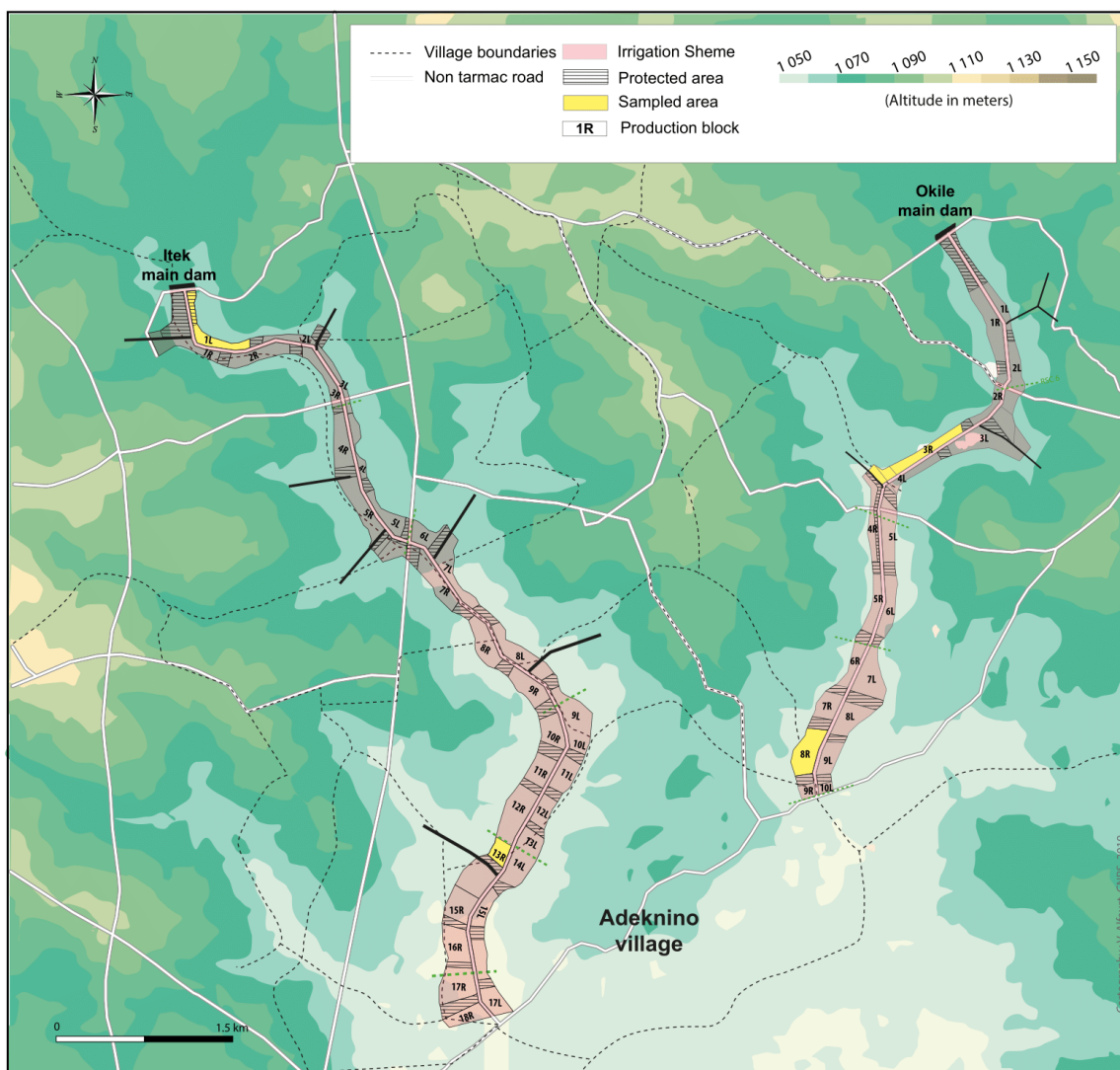
In conclusion, the Olweny scheme design relies on a self-maintained rain- and gravity-fed system, in which water is allocated to individual plots by rota. This implies strong collective action for coordinated scheme maintenance – very important since most of the infrastructure consists of earth channels – and water management, adapting rice growing to a single timetable. To run the scheme, administrative headquarters were built near the northern tip of Itek and a co-operative society was registered. However the OSRIP did not become established as expected. Indeed, at first sight, such a project did seem to reflect the trends of self-appropriation of communal land for cultivation – in this case through allocation of land to individuals, in the name of a government project. However, the project territory that was created did not rely on either pre-existing institutions or practices. On the contrary, it

introduced an external organisational model to run wetlands whose management was, as previously demonstrated, very much locally-based and diverse. The project area thus represented forced uniformization of an institutional mosaic of territories by an external model, to some extent recalling colonial practices. Moreover, the project design relied on self-governance over distances of 8 to 10km for each swamp, involving supposedly elected leaders unknown to each other, in a context in which communication and meetings are significantly hampered by poor phone and road networks, with walking being the most common means of moving about. Second, significant fears of land grabbing, coupled with suspicion about the government's intentions, motivated passive resistance among targeted users. This took the form of low participation in the land allocation process, which gave village and urban elites the opportunity to self-allocate large pieces of land, before people eventually became interested in the project. Nevertheless, during displacement the scheme reverted to bush. The period when people started returning home, mostly in 2005, was one of high rainfall. This, coupled with apparently under-dimensioned infrastructure, the absence of land levelling and land reallocation, made it practically impossible for the designed irrigation systems to work. Given all these reasons explaining why the OSRIP did not take off, it makes sense that, rather than trying to rehabilitate the scheme and run it in accordance with the project guidelines, the great majority of cultivators encountered in the swamps favoured rain-fed cropping.

## 2.2. From planned irrigation to rain-fed cropping

This section analyses the strategies deployed by growers to appropriate what was left of the scheme when they returned home: a coping mechanism appeared in the cultivation of rain-fed rice in the transformed Itek and Okile swamps. This analysis demonstrates the significant diversity of agrarian practices, partly linked to economic resources as they reflect the heterogeneity found within the group of growers. This analysis is based on field observations, some interviews and mapping work conducted in 2014 in four sample blocks, located more or less at either end of each swamp, as shown on the map below:



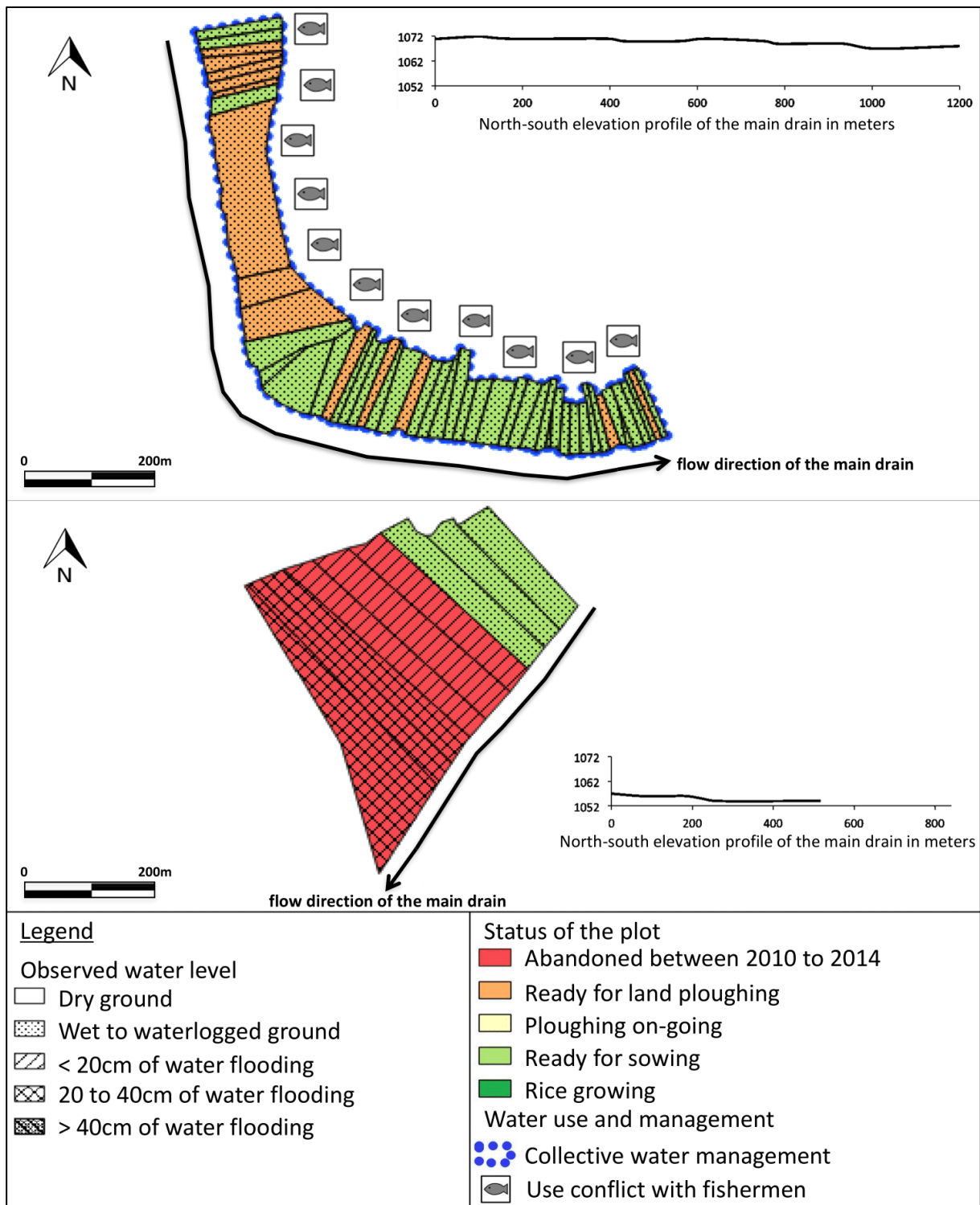


Map 10: Location of sample areas used in fieldwork (Alfaut 2019)

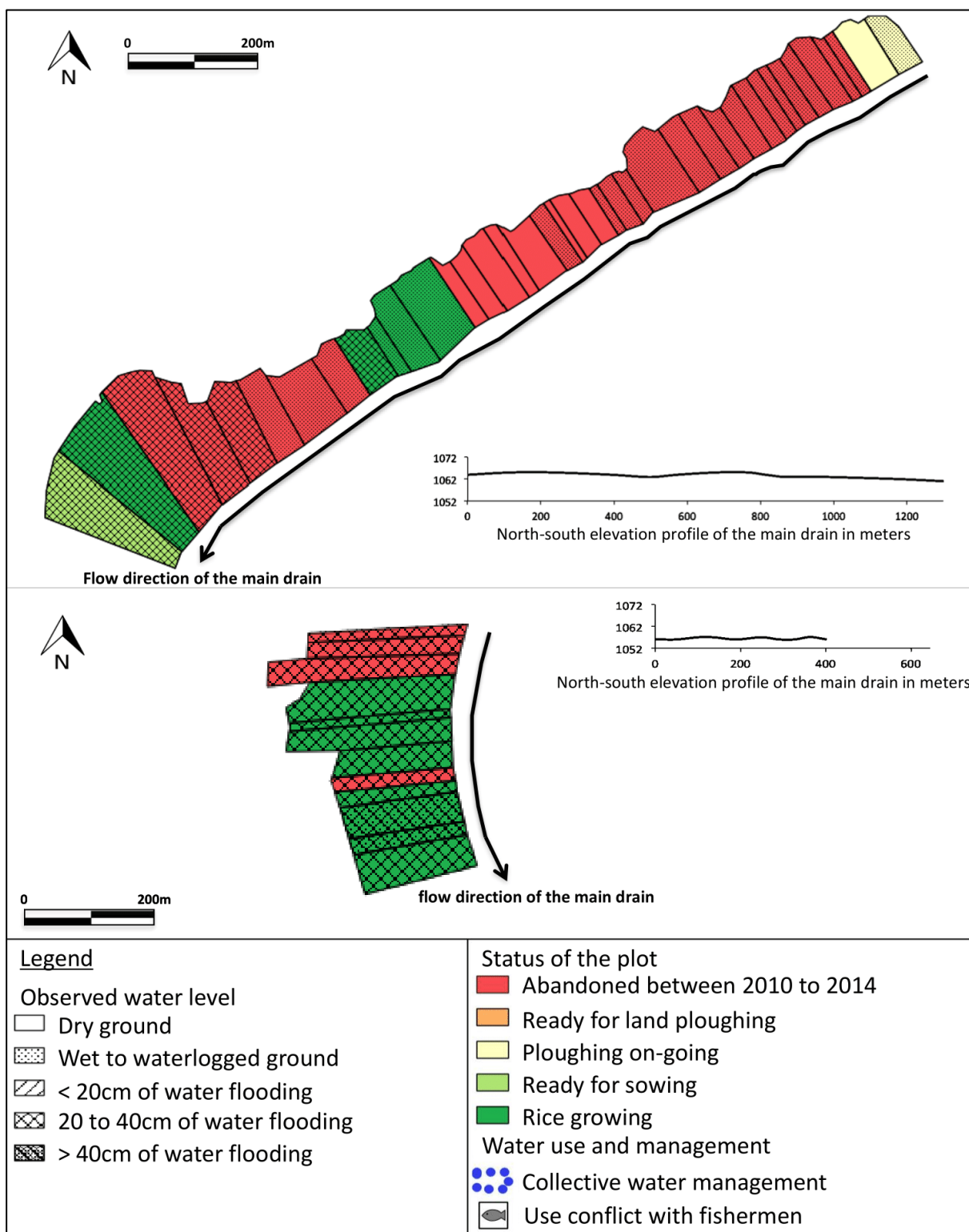
Rice indeed remained the most attractive and widely-grown crop in the Itek and Okile swamps. As we will see in more detail in Chapter 4, since the 1990s, Ugandan rice production has risen significantly. The eastern and northern sub-regions have become the main rice-producing areas, as it has become a lucrative crop. The adoption and spread of rice has increased encroachment on wetland where cultivation is feasible. It is also worth noting that rice’s higher tolerance to water, compared to traditionally-grown crops, increases the attractiveness of growing rice in wetlands. In the Itek and Okile swamps, the main varieties encountered are Kaiso and Supa<sup>59</sup>. Other crops are also cultivated in areas covered by the irrigation schemes, such as vegetables – particularly in the dry season in specific areas

<sup>59</sup> Supa is a late-ripening variety with a modest yield while Kaiso (K85) is an early-ripening variety with higher yield. However, it seems that Supa is favoured by growers because of its better taste and price.

benefiting from the resurgence of underground water by capillarity – or, during the rainy seasons, maize and/or groundnuts. Indeed such crops require less financial investment in labour for land preparation, weeding, bird scaring or harvesting. They also require less water, allowing them to be sown as soon as the first rains come. During fieldwork a wide variety of situations was encountered in terms of cropping calendar, as illustrated by the first mapping work below:



Map 11: Water levels in relation to the status of the plots in blocks 1L (top) and 13R (bottom), Itek swamp (Torretti & Gay, in: Torretti 2014)



Map 12: Water levels in relation to the status of the plots in blocks 3R (top) and 8R (bottom), Okile swamp (Torretti & Gay, in: Torretti 2014)

This showed that excess water, which is sometimes very difficult to predict since it depends on varying annual rainfalls, tends to be the main challenge for rice growers. At the plot scale, it can be caused by several main factors, including:

- micro-topography, not only of one grower's land, but also of their immediate neighbours, which can prevent water flowing through channels but can also cause it to flow from the main drain into plots in some cases (Picture 11 below);
- distance of a plot and its immediate neighbours to culverts allowing excess water to be evacuated into the main drain (Picture 12 below);
- absence of cultivation, which can lead to water flowing through plots instead of through the small channels that growers are supposed to dig, and which can change from one season to another (Picture 13 below).



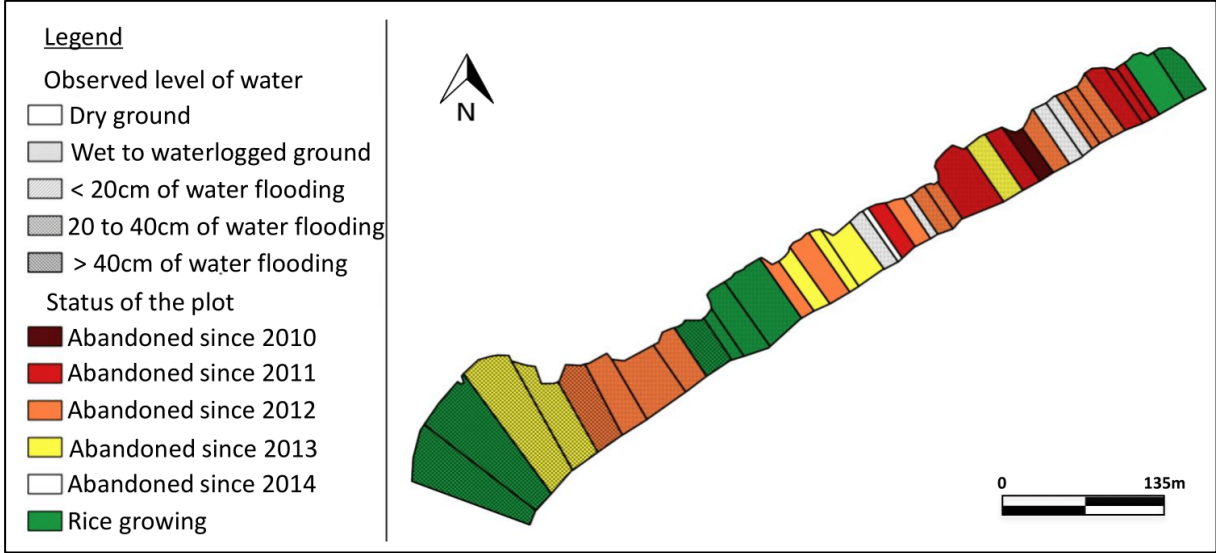
*Picture 11 (left): Flooded plot with flat topography early in the rainy season (Torretti 2014)*

*Picture 12 (middle): Excess water evacuated through a culvert to the main drain early in the rainy season (Torretti 2014)*

*Picture 13 (right): Water flowing from an abandoned plot, thus flooding the neighbouring cultivated plot early in the rainy season (Torretti 2014)*

Consequently, since returning home after the war against the LRA, rice growers have learned how to cope with water-related unpredictability by adapting the rice-growing calendar according to their plot's characteristics. The mapping indeed showed that, at the same period of the rainy season, rice was found at different stages of growth, closely linked to the micro-location and its capacity to cope with water. For instance, some plots were found to be partially under rice production, with land known to be prone to flooding being left aside. Other plots, tending not to have significant water retention capacity, can be found partially under rice cultivation near the main drain, the latter being used as a source of water – sometimes leading growers to aggravate infrastructure degradation to serve their own purposes. In some plots, growers were found to be sowing rice according to different schedules in order to

ensure at least part of the production. Finally, areas badly affected by floods, such as those that occurred in 2010 in northern Okile, can be completely left fallow during the rainy season, and possibly used for vegetable or maize cultivation during the dry season. A mimetic, wait-and-see attitude, especially with growing rumours of plans for the scheme’s rehabilitation since 2008, thus became another coping strategy to prevent losses in areas that proved to be flood-prone, as shown on the map below:



*Map 13: Mimetic wait-and-see strategy in block 3R, Okile swamp  
(Gay & Torretti, in: Torretti 2014)*

Mapping fieldwork also showed that, although different strategies are deployed by rice growers, a varying degree of mimicry is encountered on a very localised scale. Besides demonstrating a physically limited spread of knowledge – conditional on distance between growers, of whom the majority do not own any means of transport –, it also highlights the fact that strategies perceived as worthy are reproduced by growers once they have seen them demonstrated. More intensive practices such as transplantation, which is costly and demanding in terms of both labour and financial investment, have been slower to establish, although it was noticed during fieldwork that increasing number of growers started transplanting between 2014 – where it was mostly observed in northern Itek only – and 2016.

This adaptation involved the adoption of rice growing not as expected by irrigation but rather by managing submersion of the crop using individual strategies to cope with excess water. At the opposite extreme to the designed, gravity-fed irrigation and the onerous, elaborate social organisation it requires, rice growing developed in Itek and Okile out of individual empirical

initiatives. It is likely that such a strategy was the most appropriate one, in the midst of the hectic process of returning home after the war, with growers dealing with abandoned and possibly poorly-built irrigation infrastructure. However this general trend does not mean that it was impossible to conduct collective irrigation in the Itek and Okile swamps, as shown by the block sampled on northern Itek. Indeed this specific area followed a distinct pattern for several reasons. Its location, close to the Lira road and the town of Barr, is also next to the project headquarters, where buildings and machinery were concentrated. In the midst of war and displacement, the proximity to the Barr IDP camp also allowed a certain level of cultivation since people were allowed to cultivate within a few kilometres of the IDP camps. Benefiting from relatively flat topography and direct access to water by opening the main buffer gate, this small area is more suitable for precise irrigation.

Consequently, shortly after most people left their homes during the war against the LRA, a few members of urban elites formed the Lira Rice Promoters Association (LRPA) in 2004. Led by a civil servant – Jackson Ama<sup>60</sup> – assigned to the OSRIP and formerly employed at Agwata farm as Quality Control Officer, the association benefited from support from the National Agricultural Research Organisation (NARO) which donated tractors small machinery at a time when the co-operative society had collapsed. Therefore, the association members – mostly members of urban elites willing to invest in rice growing – accessed land near the project headquarters and the Lira road and invested in rice culture. They imposed their leadership on the local growers who were found in this area as well, the latter having smaller plots to cultivate. In this block, therefore, the cropping calendar was found to be homogeneous, the growers keeping to water rotas established by the LRPA. The water schedule is decided every year by the association's leaders, and water is then released at the buffer dam by opening the water channel blocked by mud and grass.

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<sup>60</sup> The name has been changed.



*Picture 14 (left): Rice nursery and transplanted rice in lines in Itek block 1L in the rainy season (Torretti 2014)*

*Picture 15 (right): Rice plots in Itek block 1L in the rainy season (Torretti 2014)*

Rice growing is thus characterised by particular attention being paid to land levelling and channel opening, which is time-consuming and carried out by hoe but allows water to be managed more accurately, alongside more intensive practices such as rice transplantation or planting in line, which are costly in terms of labour and water, use of agrochemicals, low levels of mechanisation – as illustrated by the previous pictures. The yields are therefore higher, and losses limited by better control over water. Finally, the LRPA members, mostly outsiders, endowed with bargaining power linked to their position in the urban elite, then started not only to cultivate rice using very intensive irrigation, but also secured access to land – possibly taking the first step towards turning the formal grazing areas into a temporary *de facto* open access resource.

In conclusion, as rice had become, since the 1990s, a new cash crop whose cultivation suited wetland conditions, it remained the core crop encountered during fieldwork in the Itek and Okile swamps. However, as previously highlighted, the OSRIP guidelines did not become established. Coupled with the fact that the project area had reverted to bush before people started returning home, irrigation did not become established either. As demonstrated by mapping work, growers preferred the flexibility of rain-fed cultivation in order to adapt to their plot's micro-conditions, mostly in terms of water management capacity. This led to a diversity of strategies, either evacuating excess water in areas prone to flooding or, on the contrary, maintaining water flow in areas prone to drought, as well as a diversity of agrarian practices. In most cases, the cropping calendar was therefore dependent on water micro-conditions. Meanwhile, in some areas, plots were also increasingly abandoned as the risk of flooding was high while rumours of rehabilitation were spreading. Nevertheless, one block in

north Itek appeared to be an exception, since collective water management was found there under strong leadership. This was the result of a producers' association, the LRPA, created the year displacement started by a former Quality Control Officer from previous irrigation schemes from Lira town, and involved in the OSRIP. Led by members of urban elites who could easily access land near Barr camp and the OSRIP's headquarters in north Itek, the LRPA developed irrigated rice at a single block scale, thanks mostly to the Officer's experience. As people came home, the LRPA's claim to land was not questioned and nor was the association's leadership, which by then included more local growers. This finally illustrates the transformation of former communal land, a common pool resource, not only into individualised plots in the project's terms but also into a temporary *de facto* open access resource, as the state has no capacity to impose the requirement of living within a two kilometre radius of an allocated plot nor the half-acre (0.2 hectare) size limit.

### 2.3. Coping with risky investments

This subsection briefly analyses the diversity of agrarian practices. Indeed, the latter appeared to be directly linked to the growers' economic resources, which would influence their willingness to grow rice, as the unreliable and varying water factor makes it a rather risky investment. In this light, extensive, rain-fed rice growing also appears not only to be a strategy to adapt to micro-topography or the distribution of water infrastructure, but also to reduce the necessary investment by reducing labour requirements. Other, more intensive and, therefore, more costly practices are mostly found in the north Itek block or in relatively flat areas where the water factor appears to be more manageable than elsewhere. Adapting agrarian practices to suit the water factor and available economic resources is thus a strategy to cope with the inherent risk of cultivating in wetland.

Indeed, besides adapting the rice-growing calendar to rainfall and micro-topography, growers also adopted extensive practices requiring less labour, time or financial investment instead of the intensive practices anticipated by the project designers. Broadcast sowing, clearing and fertilising land by slash-and-burn, manual land preparation and harvesting are therefore encountered. Ox-ploughing in the swamps is conditional not only on the growers' financial capacity, but also, at the micro-level, to the amount of water that is present and, if it is present, to the possibility of evacuating it when the land needs to be prepared, because of the physical difficulty of working in waterlogged plots. Indeed, for land preparation and ploughing, labour



is more costly in wetlands than in the surrounding dry areas, while for collective working groups a unit of labour is worth less surface area if the land is located in wetland rather than dryland. For instance, Jackson Amai, the former Quality Control Officer from the Agwata farm and a leading member of the LRPA, produced documentation to assess production costs per hectare – including operations (ploughing, slashing, sowing, fertilising, weeding) and inputs using rather intensive crop management technique:

<b>Crop</b>	<b>Investment required (UGX)</b>
Paddy Rice	638,500
Okra ( <i>Hibiscus esculentus</i> )	332,000
Garden Peas	310,000
Onions	436,000

*Figure 19: Production costs per hectare in Itek/Okile including operations and inputs (Data provided by Jackson Amai 2015)*

Consequently, investment in wetland can sometimes be reduced by growers, although at the cost of hasty land preparation or limited weeding for example. As a result, rice yields significantly vary from one plot to another, the lowest being obtained by the growers having, or deliberately choosing, to limit investments in the crop, therefore limiting losses in the case of bad weather.

Finally, most growers do not cultivate rice more than once a year, while the project designers expected three cycles a year. Growers then choose what they perceive as the best period of the year to cultivate rice, not only according to rainfall but also depending on their decisions regarding the dryland cropping calendar, which also tends to vary from one year to another. Consequently, there is no homogeneous or constant calendar or practice for rice growing – the “wet” season being divided into two rainy seasons preceded, separated and succeeded by periods of lower rainfall. Flexibility in terms of agricultural practices and crop selection is favoured over the rigid project design, which considers the plots within the scheme in isolation from the farming systems of which they are part – except for urban and small, local elites, for whom the ability to afford financial investment probably leads to decision-making that is independent of their other cropping or other activities.

The main result of these various strategies has been the development of spatial and social differentiation in the Itek and Okile swamps, thus reflecting the situation previously described in the surrounding uplands. Spatial differentiation can be seen through the unequal, irregular distribution of the rice landscape, encountered in areas within the scheme that are most suitable for rice growing. Social differentiation has also appeared, since cultivating within the scheme often means that growers face significant constraints: competition with the dryland cropping calendar; some or all of the financial investments, including clearing, ploughing, transplanting, sowing in line, fertilising, weeding and harvesting; significant risk of losses in the case of weather-related hazards such as floods or droughts. This, coupled with the fact that the Okile swamp is more isolated with a less well-developed road infrastructure, might explain differences in plot size between the Itek and Okile swamps: by 2015, the average plot size in Itek was 1.6 acres<sup>61</sup> per grower (612 growers sharing about 400 hectares), while in Okile it was 2.3 acres<sup>62</sup> per grower with a higher rate of abandoned and undisputed plots (222 growers sharing about 210 hectares)<sup>63</sup>. When interviewed, such growers proved to be characterised by having a large family able to provide labour, and/or owning an ox-plough, and/or secured by a small income coming from outside agricultural production. Significant numbers of growers are also people with a certain level of local influence, as some of them hold positions endowed with either influence or authority, as shown in the following subsection.

In conclusion, rain-fed rice growing became established in the Itek and Okile swamps, instead of the anticipated irrigation technology, not only because the project area had reverted to bush after displacement and because of the highly variable water factor at the micro scale, but also because it gave growers flexibility to cope with the high and risky investment required for rice growing. Indeed, individual rain-fed cropping allows dynamic adoption of diverse agrarian practices whose demands in terms of labour, risk and financial investment can vary considerably. The coping mechanisms encountered in cultivation of the Itek and Okile swamps thus mirror trends towards commodified agriculture, and both social and spatial differentiation, deeply rooted in the surrounding Langi uplands. As we will now see, the

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<sup>61</sup> 0.6 hectare.

<sup>62</sup> 0.9 hectare.

<sup>63</sup> Data from an informal summary of land use in the Itek/Okile swamps, provided by Jackson Amai, former Quality Control Officer at the Agwata farm and a leader of the LRPA.

development of a land management system specific to the Itek and Okile swamps appears to form part of this same trend.

### 3. MANAGING LAND

This section analyses how a land management system, specific to the transformed Itek and Okile swamps, developed, as the paradox of the presence/absence of the state led to the effective transformation from communal land towards individual plots, but not to the expected allocated plot management. Indeed, adopting rain-fed rice growing appears to have been a fairly spontaneous and peaceful process, focused on water management – though fieldwork observations from 2014 to 2016 show an increase in the number of disputes between growers and fishermen in northern Itek, and more generally with cattle-herders<sup>64</sup>, over access to water. Nevertheless, land distribution resulted in an unprecedented process of individualisation of the common pool, affected by the war, and complicated by the diversity of residual and locally-rooted indigenous management systems, which might suggest struggles or, at least tensions over access to plots in a general context of pressure on land. Therefore, in order to analyse this process, we will explore changes in swamp management through the development of the new land management system. The first subsection focuses on the process of individualisation, while the second explores how this background led to the development of a unique, land-related legal pluralism. Finally, the third subsection demonstrates how this pattern is reflected by flexible and original conflict resolution mechanisms.

#### 3.1. Individualising communal land

This subsection explores the individualisation of the Itek and Okile swamps, first recalling the OSRIP design in terms of land management and the land allocation process in 2000. We go on to demonstrate the gap between what was expected and the situation encountered during fieldwork, based on a second round of mapping.

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<sup>64</sup> The 2008 livestock census estimated about 640,000 cattle in Lango, while only about 60,000 remained shortly after the cattle-raids according to the 1989 national census. In comparison, the 1963 census estimated about 370,000 cattle in Lango, meaning that the number of livestock in Lango today has probably reached the level it was at before the raids – if it has not already exceeded it – in a context of unprecedentedly high population density.

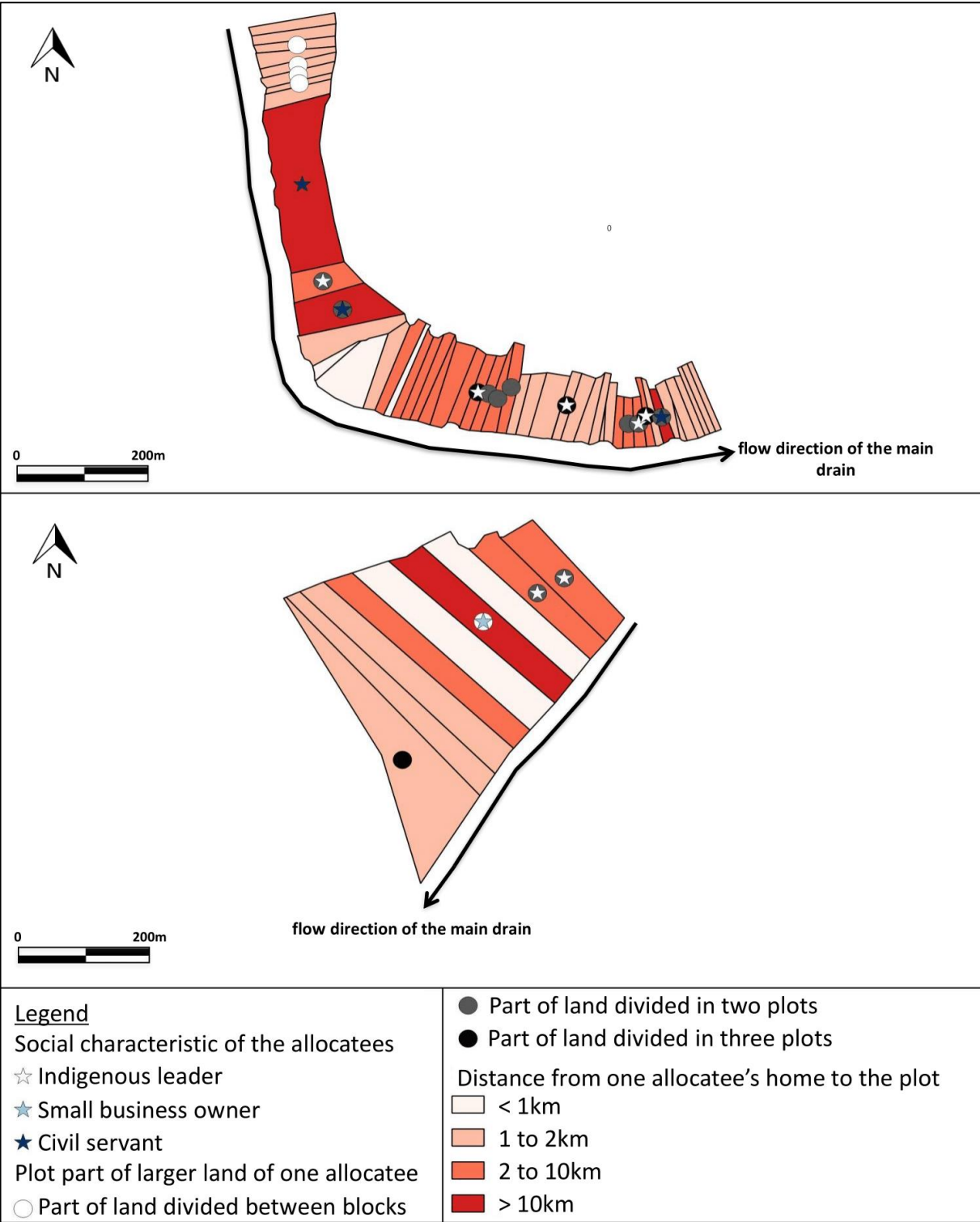
The project's soft component planned for the newly demarcated plots to be distributed to people living within a two-kilometre radius of them. The size of the plots was supposed to be 0.5 acre<sup>65</sup> and only one was to be allocated to each household. Public announcements were apparently organised in the villages, although establishing what methods were actually used is difficult. Strong distrust of the government's motives and general fear of land grabbing significantly undermined the land allocation process, as previously highlighted. Consequently, people choosing to participate in the project in 2000 – and usually also becoming part of the new co-operative society organisation – found themselves with the opportunity to allocate themselves larger plots and/or several plots. Then, according to some accounts, the project area quickly started to attract attention as suspicions faded away and rice was demonstrated to be a significant, new cash crop. At the time plots were not reallocated, the early cultivators' "rights" over the best and/or larger plots being recognised or imposed, like for instance those of the urban elite – including a former Permanent Secretary of the MAAIF (Ministry of Agriculture, Animal Industry and Fisheries), cultivating the largest plot of the sampled northern Itek block. New growers either obtained access to less favourable land or encroached onto bush initially demarcated as protected. Displacement then started in around 2003-04. The northern tip of Itek became the core of intense rice growing by irrigation, under the leadership of some of the urban elite from Lira who cultivated the larger plots, while the rest of the swamps were abandoned for a few years.

The second round of mapping shown below therefore illustrates how this area has a significantly higher proportion of growers living far from their plots, as well as a high proportion of small plots. This results from this land having been more attractive than the rest of the scheme due to the LRPA leadership allowing intense irrigation, the immediate proximity of the dam allowing access to water and a flat micro-topography allowing management of excess water. Apart from this particular area, land was unequally distributed across the Itek and Okile swamps. No re-allocation was conducted as people slowly started to return home, some of them then cultivating one plot or more for the first time within the scheme, or getting their plots back, or sometimes both. Indeed the mapping fieldwork highlighted the fact that a significant proportion of growers were cultivating several plots, the latter not always contiguous or even located within the same production block. Nevertheless, cultivation within the scheme after displacement was a costly process, as bush had grown back to a significant

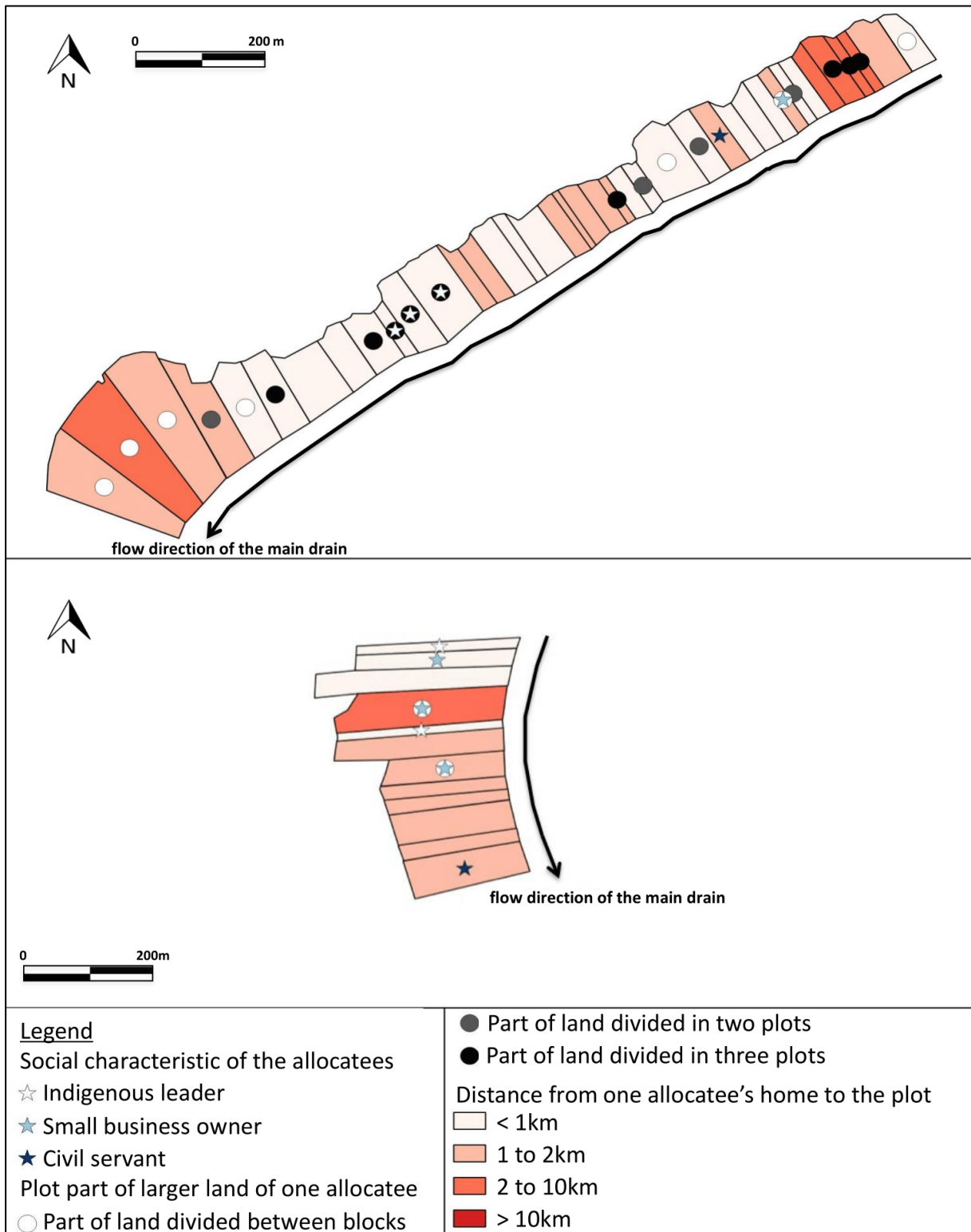
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<sup>65</sup> 0.2 hectare.

extent and clearing was therefore time-consuming and represented a hard task, illustrated in the following mapping fieldwork by the significant proportion of growers holding a particular social position, either with financial bargaining power or influence.



Map 14: Cross-referencing social characteristics to allocatees' distance from plots in blocks 1L (top) and 13R (bottom), Itek swamp (Torretti & Gay, in: Torretti 2014)



Map 15: Cross-referencing social characteristics to allocatees' distance from plots in blocks 3R (top) and 8R (bottom), Okile swamp (Torretti & Gay, in: Torretti 2014)

Therefore only a minority of people living in the surrounding areas could afford it and consequently secured rights over such land over time by maintaining plots under cultivation. Such strategies demonstrate the locally-grounded elaboration of land-related legal pluralism specific to the transformed Itek and Okile swamps.

In conclusion, the individualisation of land in Itek and Okile swamps occurred in a context of fears of land grabbing and strong suspicions of the government's intentions, leading to initial low participation in the land allocation process. This favoured the appropriation of land by a minority who did not abide by the project conditions: the requirement to live near the plot or the limit on the number and size of plots allocated per grower. Next, displacement reinforced these trends, since land was not reallocated, the economic barrier inherent in cultivating a swamp drastically reducing the number of people willing to try. In the context of the presence-absence of the state, an original land management system therefore emerged from these dynamics, as we will now see.

### 3.2. The rise of land-based legal pluralism

This subsection focuses on understanding the land management system that emerged, characterised by legal pluralism and specific to the transformed Itek and Okile swamps. Indeed, since the initial implementation of the Olweny scheme justified and therefore legalised cultivation in the project area – while such activity is legally forbidden in any other wetland – it became necessary to use the OSRIP to provide legitimacy. The land management system which emerged thus relies on the hybridisation of project-related elements with original practices to some extent related to customary usage, as we will now see.

As people returned home, the land distribution pattern within the transformed swamps was recognised by those living in the surrounding areas, alongside new, emerging dynamics such as leasing and new kinds of conflict resolution. Moreover, as previously highlighted, the presence of growers from neighbouring parishes, sub-counties or from Lira town, also temporarily turned the former communal swamps into temporary *de facto* open access resources, until all the newly individualised plots were claimed. The new rights-holders were then no longer defined by their location or membership of local clan sections, but by the financial or bargaining power that made cultivating a swamp affordable for them. Following the establishment of this new land distribution pattern, a unique legal pluralism became established on the ground, outside the planned land management system, briefly described by Jackson Amai, former Quality Officer at the Agwata nucleus farm and leading member of the LRPA, in an informal summary of land use in the scheme:

- I. Tradition and customs have dictated land ownership in Olweny and this has affected land ownership by gender.
- II. Almost all families of married or [cohabiting] couples jointly use the land without demarcating either for wife or husband for rice production, but overall authority of the land rests with the man.
- III. A female separately and fully owns land in the swamp only if she is either a widow, unmarried or divorced.
- IV. A youth owns land in the swamp either by being apportioned it by the parents or acquiring it through own initiatives or efforts. (...)
- VI. The land ownership in the scheme right now has either been by direct allocation or inheritance by a family member or through a change of hands from the original allocatee.
- VII. Most blocks downstream in Itek and a few in Okile were not allocated to many farmers as interest at the time was low and any [needy] farmer would get as much land [as he wanted]. (Amai 2015)

As summarised above, such land management resulted from an appropriation of the project by the integration of some of the institutional aspects of the project design into the indigenous, locally-based structures of the former communal land management system.

Indeed, the planned and designed land allocation was not meant to give ownership to growers but only the use of half an acre per household. This was supposed to be formalised by signing an agreement according to which the beneficiary would certify that they lived nearby and had already been allocated land, as well as undertaking to:

- maintain the plot under cultivation;
- become a member of the co-operative society by paying membership fees;
- abide by the scheme's general management principles such as water infrastructure maintenance, cleaning and opening of channels, respect for water rotas and the defined general cropping calendar.

As previously mentioned, distrust towards the government initially significantly undermined local participation in the project, leading to land allocation being unequal and open to outsiders. Secondly, impoverishment and disruption of social structures due to displacement in wartime and the process of returning home increased pressure on, and conflicts over, land on the one hand and attraction for cultivating wetland on the other. Since, during the war, the temporarily-appointed co-operative leaders left the area, the organisation collapsed before being actually implemented, facing legitimacy issues from the start in imposing its authority over infrastructure and organisation that had themselves been imposed on the population. Therefore, the rules designed for land allocation were hardly implemented in the early years, and not at all after the ceasefire. Growers are aware of the prevailing legal framework according to which Ugandan wetlands cannot be individually held, although this law is usually



misinterpreted since the government is perceived as being the wetlands' owner. Consequently, within the transformed swamps, although plots were individualised for cultivation thanks to a government project, growers deployed strategies that aimed not to have ownership rights recognised but rather to obtain and maintain rights to use, and therefore to cultivate, following the customary principle giving primacy to the first to arrive – as long as land is kept under cultivation. Such management is characteristic of the indigenous land tenure system encountered in the surrounding uplands, as well as the patrilineal transmission of the right to cultivate in the Itek and Okile swamps outside the planned land management system (Gay & Torretti 2015).

Since, on the one hand, cultivation is recent in the Itek and Okile swamps, and on the other it is not yet conducted throughout the year, this also highlights the vulnerability of some growers – those with less bargaining power in terms of money and/or influence – when in conflict over the right to cultivate a plot. Consequently, some actors have been cautious about the development of leasing within the scheme area, although it is widespread in the surrounding dryland. Leases are, for example, favoured between siblings, between whom trust is considered to be higher, or limited to only one season, since, in the case of a conflict, the right to cultivate can be transferred to someone else if that person cultivates for several years in a row. This highlights the difficulty for the more vulnerable growers to maintain the right to cultivate, especially in the context of variable rainfall as well as the capacity of households to cope with the investment barrier that varies from one year to another. Consequently, building on legitimacy by claiming to have kept one plot under cultivation for years was a strategy that might have been used, for instance, by blockleaders interviewed during mapping fieldwork<sup>66</sup>.

Finally it is worth noting that under this new land management system, land-use within the scheme no longer involves previous activities such as gathering resources and grazing, the former only being tolerated in areas of the swamp where growers choose temporarily not to

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<sup>66</sup> Indeed to the question, “When was this plot allocated to its current user?”, interviewed blockleaders answered for nearly every sampled plot that it had been cultivated by the same person since 2001 – meaning from the beginning of the project. This is contradicted by individual interviews and informal discussions as well as by the co-operative society's archives. Therefore we assume that such a strategy might strengthen growers' claims to land, and thus contribute to securing their rights to cultivate. Moreover it demonstrates a capacity to adopt a common posture in order to secure land rights from the local people, probably perceived as being threatened by the current scheme rehabilitation, as we will see later.

cultivate their plots. Indeed, implementing a government project in the area gave growers a higher level of legitimacy at the expense of former activities, when the land was communally used. Although, thanks to land individualisation, the majority of people were then excluded from the resources, the minority of growers could therefore impose their right to cultivate thanks not only to their own bargaining power, but also to the authority of the state materialised by the scheme infrastructure. Consequently, activities such as grazing or sometimes fishing are growing sources of conflict as people have considerably restocked with cattle since the raids of 1986-87 and the war, and since land in the scheme is subject to growing interest due to the on-going rehabilitation of its infrastructure.

This pressure to secure rights over plots has had two main consequences. On the one hand, it has put pressure on growers to maintain their plots under cultivation in order to preserve their claims. On the other hand, and closely linked to the locally-based environmental conditions such as micro-relief and soil water retention capacity, it has also led to the emergence of a market for land. Therefore, the areas that are most suitable for cultivation are more expensive to lease, more particularly during the rainy season when rice growing is possible, also contributing to land differentiation through its partial commodification, since only leasing is acceptable. The widespread use of leasing has possibly also balanced the unequal land distribution by opening scheme land for cultivation to people who either could not access plots when some were still left, or did not have the financial capacity to cultivate it every year. Indeed individual interviews – especially in Adeknino village – pointed to investment, rather than access to land access, as being the major obstacle to cultivation in the transformed swamps, therefore favouring one-time cultivation leases at a period perceived to be appropriate. Others pointed out that due to the harsh cultivation conditions in the swamp, many considered renting as an opportunity to produce highly lucrative crops such as rice when they needed a significant boost to their income to use immediately, for example to acquire an ox-plough or pay a dowry. Although leasing has probably contributed to the re-distribution of the wealth produced by wetland cultivation, it also undermines the possible growth in collective action with respect to irrigation in the long term, as not only do growers not necessarily cultivate their plots each year, but they also sometimes lease their plots to people who, therefore, do not hold any right over the land and would then be less likely to commit to the heavy constraints associated with collective, gravity-fed irrigation.

In conclusion, land-based legal pluralism, specific to the project territory, became established over the years as people returned home at the end of the war against the LRA. This new land management system shows to a certain extent appropriation of the project's guidelines, hybridised with indigenous practices related to former communal land and the surrounding uplands. Indeed, land allocation introduced by the OSRIP was relatively accepted although a minority of growers accessed land that did not meet the OSRIP's requirements. Since neither supervision by the co-operative society nor irrigation technology became well established, some land bylaws emerged out of the customary land tenure system such as the claim of the first to arrive being recognised, the right of use being recognised by actual cultivation of the plot, and patrilineal transmission of the right to use. Seen in this light, growers' claims to plots focus on a right to use rather than a right to ownership, which represents an injunction to maintain cultivation or a form of leasing, preferably to relatives, as well as contributing to the acceptance of outsiders having access to land. Finally, this highlights on the one hand emergence of a market for leasing land, as well as the difficulty of some growers to maintain a claim over a given plot, since some areas are less fit for cultivation than others, mainly due to water-related factors. In the end, the establishment of such a new land management system undermines the adoption of possible irrigation, which is now the focus of the on-going rehabilitation plan as we will see in the following section. Furthermore, by endorsing the individualisation of land, this new system fuels growing conflicts over use. Indeed, transforming communal land into individualised plots that only a minority of people can afford to cultivate has excluded a wide majority of users from the project territory, and therefore from access to its resources.

### 3.3. An original and flexible system for regulating conflicts over land

Finally, this subsection focuses on mechanisms to solve land disputes within the transformed Itek and Okile swamps. Indeed, as the planned co-operative leadership has generally failed to prevail over the project area, we tried to understand how land disputes within the transformed swamps were regulated in the context of unprecedented legal pluralism.

Land in Itek and Okile is managed similarly to the surrounding dryland, where priority to the first to arrive and patrilineal transmission influenced its allocation and which, later, also went through commodification including leasing – not only to local individuals but to outsiders as

well. Rules regarding access to and use of land are thus linked to indigenous land tenure systems applied to individualised plots in accordance with the project design. Reflecting this pattern, conflict resolution in Itek and Okile is also directly integrated into some of the project guidelines as well. Indeed, as land was formerly used communally for extensive activities, conflicts over individual land use hardly existed but appeared during project implementation. Mechanisms to cope with conflicts were therefore mostly created as a reaction to the conflicts themselves as they appeared, and mediated according to the recognised and hybrid land tenure system previously described, mixing both indigenous and project-related characteristics.

The project designers initially expected such mediation to be carried out under the aegis of the co-operative society management through plot and blockleaders. However, the society collapsed as a governing entity, although a few attempts were made to rebuild its organisation. Indeed the IFDC (International Fertilizer Development Center) conducted a few training courses, leading to re-structuring of the hierarchy by adding zonal committees as links between local project-related leaders and the executive board. This attempt, conducted in the early 2000s, during a chaotic period and with a limited number of growers, did not work. Finally, at the local level, new elections of plot and blockleaders were not held after people had returned home. While the first appointments were made in circumstances that were sometimes unclear due to local distrust of the project's implementation, later, during the war, some plot and/or blockleaders also died, leaving their positions vacant or arbitrarily occupied. Consequently the importance of project-related local leaders can vary considerably between different parts of the swamps. Their participation and influence on mediation depends on other people who are usually involved as well, whose authority varies considerably from one place to another throughout the swamp areas: they include Local Council leaders – the LC1 – established during the 1990s, or sometimes indigenous local leaders<sup>67</sup>, though seemingly less frequently. Therefore conflict resolution is strongly linked to the personality of the individual

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<sup>67</sup> The LC1 executive committee constitutes the lowest level of the Local Government administrative system, headed by a Chairperson whose position is assimilated as a village mayor or chief. In Acholi sub-region, the *rwot kweri*, position was initially introduced by the colonial administration. It became considered over time to be one of the customary leaders. In Lango sub-region, positions for the organisation of labour related to the colonial cotton development policy still exist as well, though of less importance, and are now perceived as a type of local leaders whose authority can considerably vary from an area to another.

concerned, involving different sources of authority whose influence establishes a varying, locally-based complex, as illustrated during an interview with an elder in Ayel village in 2014:

One man, he had this plot right there. But he stopped cultivating and let a woman use it for two, maybe three years. Then after that, when he claimed it back she refused and asked for money as compensation for giving it back. So the executive committee of the co-operative solved the conflict, they decided she should keep it because she became the one using it for quite some time. In other places people don't recognize the co-operative at all because that system failed with cotton. So most of the time actually it is the LC1 who lead mediation but not always, it depends. Clan leaders don't do so much those days. (Anonymous, May 2014)

Finally, integrating indigenous land tenure characteristics into the locally-grounded elaboration of the land management system found across the transformed swamps illustrates the major importance given to land as a resource. This pattern thus reflects the strategic importance acquired by land since the brutal agrarian shift which occurred in the 1990s. Indeed, as the Itek and Okile swamps went through significant disruption in terms of ruling institutions, users and rights holders, the local people's re-appropriation of the project terms occurred because land was placed at the core of the transformation. Despite the rejection of the project's collective dimension, it did awaken interest in rice growing and therefore irrigation. As a result, the rehabilitation has been both expected and feared: in 2014, by the time officials launched the rehabilitation, distrust toward government where land is concerned had hardly decreased at all.

In conclusion, since both irrigation technology and the co-operative system were ignored by the scheme's users, who adapted to their main constraints by developing a flexible, rain-fed rice cropping system, land management became interwoven with this trend towards individualised agrarian practices. Such disruption in the use of the Itek and Okile swamps came at a time of fears about land grabbing, suspicion and soon afterwards displacement. This background provided opportunities for outsiders to access land within the project area, turning it into individualised plots with *de facto* open access. Indeed land appropriated outside the OSRIP requirements was not reallocated after the cease-fire. Coupled with the increased investment required to grow rice – due to changing rainfall patterns and the fact that the scheme area had reverted to bush – many users of the communal land are now excluded from the transformed swamps, feeding growing tensions, mostly about access to resources. For the minority of former users who became growers, land management was at the core of the emergence of legal pluralism. The latter relies on a multiplicity of actors – as we have just

seen, the co-operative system having failed in its roles, including the supervision of land use – whose involvement is diverse and locally-grounded, more generally reflecting the land management situation in Lango. The land management practices also significantly mirror the customary usage found in the surrounding uplands, resulting in management of the transformed swamps being influenced by the same general trend of commodification, mostly through leasing. Nevertheless, the OSRIP's initial implementation remains a source of state authority for land individualisation, and therefore the exclusion of a wide majority of users. The growers who benefited the most from this situation proved to be first the urban elite and other outsiders, who thus managed to impose their land claim despite failing to meet the project's requirements – the latter not being always well-known or well-remembered in the area around the swamps. For growers with less economic or bargaining power, the vulnerability of their land claim is significant, leading to the emergence of various coping mechanisms, including the maintenance of at least partial, extensive cropping, or risky leasing, or facing the risk of land disputes if it is not cultivated for some time. The balance of powers relating to control over land is thus at the core of the new land management systems in the transformed Itek and Okile swamps, as reflected by the scheme's rehabilitation which we will now examine.

## 4. REHABILITATING THE OLWENY IRRIGATION SCHEME

This section explores the rehabilitation process by focusing on power balances, in order to identify the main issues at stake and the potential disruption that rehabilitation might cause in the locally-established project's territory management system. Indeed, rehabilitating the scheme might call into question the appropriation and coping mechanisms relating to the initial OSRIP terms, in a context of waiting and uncertainty linked to another centrally-imposed process. To understand the main issues and struggles which were highlighted by this operation, we will introduce the new design of the Olweny irrigation scheme in the first subsection, before focusing on the various power balances it affects: at the level of the scheme's general management in the second subsection, and in terms of land control in the third subsection through two cases of local resistance. Indeed, fears of land grabbing, which had diminished as social consensus became established on the ground over the years, came back to the fore in 2015.

## 4.1. From environmentally-friendly design to productionism

Rehabilitation was officially launched in July 2014 for a two-year period at an initial cost estimated at UGX42.7 billion<sup>68</sup> at the time. Its conceptualisation and design, under MAAIF supervision, were part of a technocratic top-driven process. Although grey literature we have consulted shows a certain awareness of how the ineffectiveness of the institutional framework contributed to the schemes' general malfunctioning, it focuses rather on reinforcing water management by installing heavier-duty, upgraded water control infrastructure, as we will now see. By using this approach those in charge of the scheme ignored the social dynamics that had become established since the early 2000s.

As previously highlighted, growers consider water management to be one of the main challenges in rice cultivation, while better control of water is their main expectation. Indeed, the difficulty of controlling it has contributed to landscape differentiation due to distinct spatial and social dynamics, according to the various risks and investments required. While land dynamics resulting in land-based legal pluralism have hardly materialised spatially, reaching a certain balance in the form of social consensus, water management remains considered as disruptive, especially for rice cultivation – not only by growers, but also by actors at both district and government levels and by the consulting firms hired for the rehabilitation of OSRIP. Thus, for growers, rehabilitation offers an attractive opportunity to improve control of water. Nevertheless it is worth noting that such an opportunity appears to be perceived as rather abstract, in the absence of a history of intensive irrigation in the area. Indeed, expectations have been raised by the technocrats' promise that "somehow" rehabilitation, thanks to technology only known through the media or from speeches, is certain to provide control of water. However, the "know-how" necessary to achieve such a result, if construction occurs as planned, is absent: a tour for a very few to the eastern Doho irrigation scheme, and minimal training funded by the IFDC in the early 2000s were far too little to allow the transfer of irrigation technology to the 4,000 or so growers anticipated in the initial scenario of allocating one acre per grower. As quantitative and distributive water management has been part of the dominant engineering field for a few decades (Fernandez 2014), designing the rehabilitation of OSRIP indeed focused on reviewing water infrastructure in order to reinforce control of water (OO&P *et al.* 2011). The very concept of the irrigation scheme, based on a

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<sup>68</sup> About US\$16 million at this time.

productive vision of water and land management as imported by the Chinese technical team<sup>69</sup>, was not questioned – unlike the limitations imposed by an environmentally-friendly design – nor were the social dynamics that had developed since the early 2000s taken into account. As the rehabilitation of the Itek and Okile schemes appeared to be much more costly than that of other schemes, the decision to go ahead was delayed for a few years and implementation did not begin until 2014, after the Doho (eastern Uganda), Mubuku (west) and Agoro (north) scheme rehabilitations were officially completed. The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) contracted a Kenyan consulting firm, Otieno Odongo & Partners to rehabilitate the Olweny and Agoro schemes, in partnership with a Ugandan company, Arch Design Ltd. As we will see later, the latter are embedded in a patronage network that affected the rehabilitation process.

Nevertheless, as before, the importance of the soft component was underestimated in relation to the hard, with little emphasis given to the lack of locally-based institutions that could ensure the planned self-governance of the irrigation systems. On the contrary, the general objective is to upgrade the non-permanent water infrastructure to cement structures, reinforcing the main buffer dams and adding lateral ones, as well as adding spillways to each buffer dam (OO&P *et al.* 2011). Levelling of the land is also proposed. On the other hand, the creation of the co-operative society is mostly left to individuals and to the supervision of the district administration. However, although they may be unequal in terms of budget allocation, the implementation of the hard and soft components appears to be linked to one another, fuelled by power balances and the struggle for control of land.

Significant difficulties did indeed appear during implementation. Probably linked to significant levels of corruption at government level, a year before the presidential elections, the companies contracted by the MWE (Ministry of Water & Environment) to rehabilitate the scheme requested both more time and a bigger budget. Interviews with individuals from the construction company, Pearl Engineering Company Ltd., and the supervising company, Warner Consultants Ltd., pointed out irregular payments as well as significant underestimation of operating costs to justify such demands, which were granted by the government – thus prolonging construction work until at least mid-2017. As the OSRIP headquarters were initially built in Abolet village, near the town of Barr and the northern tip

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<sup>69</sup> See Chapter 4 for more details.



of Itek, construction work started with the creation of living quarters for workers as well as upgrading the headquarters with the construction of new storage and administrative areas, a guesthouse and a laboratory (see Picture 18 below). Such activities led to a degree of economic boom in the village, with numerous temporary houses constructed to host workers and the development of a food market. In the swamps, construction work started with the upgrading of the water infrastructures in Itek and in Okile (see Pictures 16, 17 below). By mid-2016, upgrading of the main dams was finished but, since work had progressed much more slowly than scheduled and the budget was shrinking, the number of lateral dams was significantly reduced. By the end of 2016, the main drains had not yet dried and cementing of the water collector channels was only starting in Itek alongside new road building.



*Picture 16 (left): Upgraded Itek main buffer dam and cemented water channel (Torretti 2016)*

*Picture 17 (middle): Completed spillway (Torretti 2016)*

*Picture 18 (right): New OSRIP headquarters in Abolet village (Torretti 2016)*

It now became difficult to obtain access to information about the construction work: while in 2014, travelling around the swamps did not present any particular problem, later it became nearly impossible unless accompanied by officials. Meeting with company employees was also difficult, and finally required an introduction from MWE representatives since such requests remained unanswered at district level<sup>70</sup>. Although district Officers can move around, they are institutionally excluded from the rehabilitation, MWE representatives travelling from Kampala once a month to monitor progress with the work. As far as soft components, such as training farmers and building co-operative capacity, district Officers are not allocated budgets to carry out this type of activity and they have, therefore, extremely limited action capacities.

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<sup>70</sup> Indeed, Jackson Amai, who previously introduced us to the sampled areas and thus significantly contributed to the organisation of fieldwork in 2014 became rather un-cooperative once rehabilitation started. He declined to introduce us to the companies involved with the rehabilitation. It quickly appeared though that he had been given a consultant's job at Pearl Engineering Ltd. as Community Liaison Officer.

Moreover, the Itek/Okile co-operative society that they are supposed to support faces significant competition for authority since, on the one hand, it collapsed previously at the time of displacement, and on the other hand, various other groups have emerged, for example the LRPA and smaller groups such as the Itek B co-operative society.

In conclusion, the Olweny irrigation scheme rehabilitation was launched in 2014. Construction work started in 2015, focusing on updating main buffer dams, adding spillways and lateral dams, as well as cementing water channels and levelling of land. This marked the abandonment of the initial, environmentally-friendly design. However, the institutional organisation of the rehabilitated scheme was no different from the initial one, with a general belief on the part of the designers that the same framework would this time become established if the hard components were rehabilitated with upgraded, permanent materials. However, for various reasons, by the end of the two-year period, the rehabilitation was considerably delayed and thus extended. By the end of 2018, only the main buffer dams were completed, with few lateral dams. Few of the channels had been cemented, and no land levelling had been carried out.

## 4.2. Rehabilitation as a reflection of power balances

Since the initial institutional framework was meant to be revived, though with hardly any budget allocated to it, the rehabilitation process once again fuelled the power balances for control of the scheme between several producers' groups which had emerged, mostly after displacement. This subsection explores how the rehabilitation reactivated this power issue, and how various groups responded to it.

District officials could indeed barely hide their lack of means and poor knowledge of the ground, as illustrated during a general meeting held at their initiative in April, 2015. The meeting's purpose was to officially transfer authority from the previous co-operative Chairman to the newly elected one. Out of the 500 growers expected by district officials, a dozen came to the OSRIP headquarters. As the district Commercial Officer gave a speech, highlighting the importance of re-building the Itek/Okile co-operative society as the only legitimate ruling entity, some of those attending the meeting showed their reluctance towards this re-building during the informal discussions that followed. Indeed, neither the LRPA nor small groups such as Itek B are willing to recognise the governmental-driven Itek/Okile co-

operative society, since it lacks legitimacy. They prefer to see their own group under an umbrella system that would leave them with a certain degree of bargaining power. Finally, it appeared that the Commercial Officer, although in charge of capacity-building for the Itek/Okile co-operative society, was unaware of the legal basis for small groups within the scheme. He then appeared rather distraught when informed that no legal means exist to allow the Itek/Okile co-operative society to oversee the irrigation systems alone. The power struggles that emerged that day reflect the interests opposing distinct groups as well as relationships linking them.

Until the rehabilitation process started, the Itek/Okile co-operative society was led by a controversial individual<sup>71</sup>. Rehabilitating though imposed the election of a new Chairman and the constitution of new executive board. Therefore, in late 2014, a retired civil servant from Amach sub-county, was chosen as the new Itek/Okile co-operative society Chairman during a general meeting attended by about five hundred people. However, as previously explained, the Itek/Okile co-operative society had hardly become established as the schemes' managing entity – due to a lack of legitimacy, being externally imposed and trying to apply ways of thinking that were disconnected from local social dynamics, and due to growing distrust toward its leadership as well. Moreover, interviews revealed that power struggles had appeared between the new board and Jackson Amai, former Quality Control Officer of Agwata and leading member of the Lira Rice Promoters Association (LRPA). The latter's influence appeared to be significant, as he acted as a respected advisor during interviews initially scheduled with the co-operative society board, during which board members left him to lead discussions. Such situations reflected a certain balance of power.

Thus although the new board was appointed during a general meeting, the existence of significant connections is likely. For instance, as a former civil servant with considerable experience of agriculture and government, as well as of foreigners, Jackson Amai, former Quality Control Officer in various schemes, developed the use of tools and norms specific to

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<sup>71</sup> During interviews, his unpopularity was explained in the light of several factors. On the one hand, he was seemingly appointed Chairman by very few people from his own home village, most of the other voters not having been informed of the meeting where the Chairman would be chosen. On the other hand, according to seemingly wide-spread rumours he misused significant amounts of funds given to the co-operative society, and sold rice stored by growers at the administrative headquarters for personal gain. Such unpopularity was shown during the general meeting held in April 2015 as some growers attending the meeting accused him of misusing co-operative assets such as motorbikes, whose keys were not returned that day.

the development sector in order to attract external support, also using his connections at government level and looking for partnerships – which we will see in more detail in Chapter 4. The Action Plan “for rice cultivation, household income, food and nutrition security” officially developed by the LRPA in 2008 therefore provided the basis for the development of an Itek/Okile co-operative society Business Plan in 2011, the plan being clearly “development sector”-oriented by its focus not only on business and marketing but also on topics such as “eradication of poverty”, “sensitizing on community domestic violence” or on “HIV, gender balance, youth and disability” (Itek/Okile ACE Executive Committee 2011). Finally, agreements previously established by Jackson Amai to carry out research within the scheme on behalf of the government – probably including significant payment by the government – were renewed, this time between the National Crops Resource Research Institute (NACRRI) and the new Itek/Okile co-operative society Chairman in June 2015 for the sum of nearly UGX10 million<sup>72</sup>. The part played by Jackson Amai in this agreement is of prime importance, as testified by a letter he wrote to the NACRRI Director in September 2015, on behalf of the Itek/Okile co-operative society, although he did not hold any official position on the board. Such payment is all the more significant given the co-operative’s absence of financial capital, and the fact that its expenses were hardly monitored by anyone but the executive board. This follows on from previous research trials of which Jackson Amai was in charge, not only for the NACRRI but also for the Africa Rice Centre, therefore also placing him in charge of “selecting farmers” – among whom some of the new Itek/Okile co-operative society board members were found.

Therefore, since the newly appointed Itek/Okile co-operative society board members already “owed” something to one particularly influential individual, it was unlikely that it would try to impose its authority /over the LRPAs or, by extension, over the Itek B co-operative society either. Indeed, the leader of the Itek B co-operative society is also a member of the LRPA, close to Jackson Amai, thanks to whom he has established a certain network in the agricultural NGO sector, which significantly reinforced his social position: firstly as a rice grower, blockleader and member of the LRPA, then as a leader of the Itek B co-operative society as well as a savings association, later in 2015 as a community representative for Sasakawa Global 2000, a private foundation which employed him to organise agricultural training, and, finally as a parish chief appointed in 2016.

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<sup>72</sup> About US\$2,700 at this time.

Thus Jackson Amai, now holding a consultant's position at Pearl Engineering Company as Community Liaison Officer for the rehabilitation – appeared to be in a key position when rehabilitation started, playing a strategic role in distinct groups, which to some extent give the appearance of a web of patronage<sup>73</sup>. Consequently, although rehabilitation was still on-going at the time of fieldwork, it proved to be unlikely that the Itek/Okile co-operative society would later meet the OSRIP design expectations. Indeed, that would require strong general leadership from the co-operative society, which it cannot provide under present conditions, given the strong power dynamics found at the local level. Moreover another kind of patronage system emerged on the ground in 2015, this time involving actors at all levels and directly focused on land control, which appeared once again to be central.

In conclusion, power balances were both reflected in and exacerbated by the rehabilitation process. The co-operative society, which renewed its leadership shortly after the launch of the rehabilitation, is now facing not only the same challenges as before – since the design, though updated with more robust infrastructure, remains the same – but also new competition with the producers' groups which emerged to fill the project's effective institutional vacuum. These groups, including the locally influential LRPA – in which one individual, Jackson Amai, appeared to be central – clearly did not intend to respect the new co-operative leadership. As some of the groups were legally created, it would clearly be difficult for either the co-operative society, or the decentralised agencies which support it, to challenge these groups. In fact, co-operation is required if the Itek/Okile co-operative society aims to become established, which gives these groups a certain level of bargaining power.

### 4.3. The "land titling" and "Kenyan investors" cases

This subsection shows that power balances are also fuelled by the rehabilitation in respect of controlling land. Indeed, the operation re-kindled former fears of land grabbing. These fears were exacerbated by two particular cases that we will now examine: one regarding the possibility of establishing a land title over the project territory, and the other caused by Kenyan investors declaring an interest in leasing the whole project territory.

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<sup>73</sup> See Chapter 5 for his life story in relation to the development of rice and irrigation schemes in Uganda.

Since rehabilitation was initiated in late 2014 with the arrival of the dry season, the issue of land demarcation quickly arose. By law, the boundary demarcating the wetland from the surrounding customary land is the ecological one. In early 2015 land demarcation was initiated by the surveying team and materialised by marker stones (see pictures below) established thirty metres from the ecological boundary in the surrounding dryland – as decreed by the law according to Jackson Amai, responsible for supervising the technical team with the Environment Officer of Lira district.



*Picture 19 (left): Surveying the scheme boundaries (Torretti 2015)*

*Picture 20 (right): Demarcating the scheme boundaries (Torretti 2015)*

The National Environment Regulations, quoted by both the Environment Officer and Jackson Amai to legally justify land titling, however, state that such regulations apply to riverbanks and lake shores only, thus excluding wetlands (Republic of Uganda 2000: 14).

Nevertheless the operation quickly encountered strong local resistance and had to stop, since the markers were established within the customary land and due to fear that land titling would lead to land grabbing. Indeed the purpose of demarcating was to establish land title, according to Jackson Amai and the Environment Officer. The beneficiary of the said title was, however, unclear, between the Lira District Local Government, the Itek/Okile co-operative society or even the government. For some newly appointed leaders of the Itek/Okile co-operative society, it represented an opportunity to take control of land, which would have not only given the co-operative certain power over growers but also cut off the latter's claim regarding eventual land re-allocation not favourable to the current main growers – among whom were some of the new board members and LRPA leading members. For the Environment Officer, it would be an opportunity for the District to become a central player in scheme rehabilitation

and its subsequent management. Such a strategy was not in all cases deliberate or well-planned. Indeed, the Itek/Okile co-operative society's new leaders were facing a fait accompli as they were not formerly notified; nor did they participate in land surveying and demarcating. Moreover, at the District level, the process appeared rather suspicious since no officer from the District Land Board was aware that demarcation of the Olweny swamps was taking place. On the contrary, they claim such processes to be illegal as located in a wetland, regardless of project implementation:

I am confident you misunderstood something. A land title? In a wetland? That would be illegal, even for an irrigation scheme, and we [the District Land Board] would have known about it. You see, maybe sometimes we can make an exception, because with some agencies, if there is no title, they don't fund because of land insecurity they say. Then we do what we call a Memorandum of Understanding for instance. But the process doesn't change. You have to tell us what you plan to do, because we have our own surveyors to confirm that what you have been doing is alright. Then it becomes the responsibility of the drawing office, then of the mapping office, in Entebbe. It is a long process from which we can't be excluded. (Anonymous, Lira District Land Board, 08/04/15)

For one of the Warner Consultants Ltd. officers, the process was also unclear, as stated during an interview:

No, for me, I don't really know why they tried to demarcate, it was not part of the rehabilitation anyway. But also, what did they expect, taking a bit of communities' land as well like this... Of course it would bring conflicts and maybe a bit of violence too. In northern regions they no longer have cattle, and they already blame government for this, so maybe it would have been good to think further before doing things like this. (Anonymous, Consultant at Warners Consultant Ltd., 17/04/15)

This raised the question as to which body was behind land titling in the OSRIP land. On the ground, Jackson Amai, consultant at Pearl Engineering Ltd., and the Environment Officer stated that the technical team were employed by Arch Design Ltd., one of the companies which participated in designing the rehabilitation of the Olweny and Agoro irrigation schemes at a cost of US\$40million. In this case, Arch Design Ltd. would have supposedly been mandated by the MWE to carry out land demarcation and titling for both the Olweny and Agoro irrigation schemes. In Agoro, as we will see later, the survey team, whose members introduced themselves as Arch Design Ltd. officers as well, was not able to initiate any work, again due to strong local resistance. Nevertheless, in the Kampala main office, an employee of Arch Design Ltd. certified that the company had not been mandated for any land titling project:

I honestly never heard about this. We design from the office so I don't think anyone actually ever went to the field even at the time of the study in 2011. We were in partnership with the Kenyans [OO&P Ltd] because we lack experience in that field, so they did most of the fieldwork I believe. If you want my opinion, I would think maybe, some people at the ministry of water saw the chance to make money, using the company's name to sell surveying services, and get the money straight in their pockets at the end. I do not know if you are aware how expensive surveying is in Uganda. For irrigation schemes like Olweny or Agoro, we are not talking about small money. (Anonymous, Project Officer at Arch Design Ltd, 28/04/15)

In an interview in 2017, an Agriculture Officer working at the MAAIF in Entebbe reacted to this case by declaring that the company would actually be owned by "one of the engineers" of the Water for Production Department. Finally, during informal discussions, Jackson Amai stated that a few individuals from the MWE took initiatives, which would have ceased at the demand of the Permanent Secretary, once the latter heard about it. In conclusion, it is unclear what kind of body or individuals were seeking land titling for the Olweny and Agoro irrigation schemes. It is more interesting to note how such an operation was probably initiated at the top level and picked up on the ground by a couple of individuals, thus being an integral part of a multi-level illegal operation involving multi-level interests: doing business and controlling land.

A second case also occurred during the first year of the scheme's rehabilitation – the "Kenyan investors" case – which we will now briefly describe, since the importance of the land issue was highlighted once again, although in different circumstances. It also illustrated once again the capacity of people from the Itek and Okile area to mobilise themselves against what they perceived to be a significant threat of land grabbing. Indeed in November 2015 a Kenyan company called Graduate Africa Ltd. expressed an interest to the Itek/Okile co-operative society Chairman in leasing the 610 hectares of the irrigation scheme. The Chairman reported this to the Lira Chief Administrative Officer (CAO) in December 2015. The latter then wrote the company a letter, a copy of which was made public by the local radio, provoking a spontaneous meeting in Abolet village of a few hundred local people. Indeed the letter was perceived as a positive answer from the CAO, leading growers to gather to defend the land as their own. Eventually the CAO denied through the media that any deal was already being done.

The rapidity of these events and the reactions they provoked, within only two months, highlights not only the importance that local people place in the scheme land, but also the degree of distrust of the state apparatus regarding any course of action involving land.



Moreover, the 2015 cases demonstrated land as a mobilising issue able to unite growers in their rejection of externally-driven decisions. The consequence of the 2015 cases is significant and is mostly based on increased fear of land grabbing, and distrust of the newly established Itek/Okile co-operative society executive board. In such a context it seems more unlikely, given the importance of land, that rehabilitation would lead to any change in the institutional framework regarding the currently prevailing land-based legal pluralism.

In conclusion, the rehabilitation, following a similar design though updated with more robust infrastructure, both re-activated and fuelled power balances between various actors for authority, including the Itek/Okile co-operative society with its renewed leadership, the LRPA, and various smaller producers' groups. One individual appeared to play a key role in this power game: Jackson Amai. It turned out that his participation was also significant in the land titling cases. These cases crystallised the revived fears of land grabbing. Indeed, titling raised the question of ownership for the first time, while the beneficiary of such titling remained an open question at the time of surveying. Though many were excluded from using the swamps because of the OSRIP, it turned out that people from the surrounding areas widely consider the wetlands to be theirs – contrary to what is stated in the Constitution – and it was their physical opposition to the surveying team that put an end to it. Finally, understanding the reasons behind titling quickly revealed one of the facets of corruption present in such project, that we will analyse in more detail in Chapter 6.

## CONCLUSIONS

In this chapter, we aimed to assess changes caused by the implementation of the Olweny irrigation scheme, using the historical background regarding agrarian and socio-political trends analysed in Chapter 1. We have thus highlighted the main issues raised by the transformation of former communal land into a project's territory for rice production.

In the first section, we focused on understanding the new agrarian dynamics found in the Langi wetlands since the cattle raids, which occurred at the time of Museveni's takeover. Indeed, the new wetland legal framework which came into force under Museveni's leadership furthered legal pluralism in wetlands. Nevertheless, coupled with the impoverishment caused by the cattle raids and the growing population, land, the new backbone of the Langi economy, was placed at the heart of grabbing processes. Indeed, particularly because of depleted

livestock numbers, communal land lost a significant use for grazing, and became increasingly the object of individual appropriation. The diversity of grabbers and grabbing dynamics that we demonstrate, as well as the diversity in terms of ownership, access and use conflicts over communal land, only highlighted the necessity to make a case-by-case analysis. Indeed, situations appeared to be rather locally-based and complex, with the influence of each kind of actor involved varying from one place to another. This is mostly the result of long-term dynamics of, on the one hand, land and agriculture commodification and, on the other hand, clan sections' settlement patterns. Indeed, as they led to ever-increasing social and economic differentiation furthered by recent war-related events, people within villages were found to have widely varying amounts of bargaining power, allowing them to self-appropriate communal land in a way whose consensual nature can vary greatly from one case to another.

In the second and third sections, we used this analysis to contextualise the transformation of the communal land that made up the Itek and Okile swamps into individualised plots due to the implementation of the irrigation scheme. The second section focused on managing water for agricultural production. Indeed, the planned irrigation technology did not become established – any more than the planned institutional framework to oversee the scheme in the form of the Ikte/Okile co-operative society. This was due to various factors: initial fears and suspicion towards the OSRIP leading to unequal land allocation, absence of land levelling preventing the gravity system from functioning as planned, displacement and the reversion to bush of the environmentally-friendly scheme that followed. Instead, as rice became a significant cash crop that suits wetland cultivation, the OSRIP was appropriated by rain-fed rice growing. Indeed, individual cultivation practices gave growers the required flexibility to cope with the conditions inherent in cultivating in the swamps – i.e. with the unreliable and highly variable water factor, making the significant amount of investment required rather risky. In the third section, we analysed how a land management system specific to the transformed Itek and Okile swamps emerged from a unique legal pluralism as people returned home after the war against the LRA. This new system demonstrates an appropriation of the project's guidelines, interwoven with indigenous practices related to the former communal land and to the customary land tenure system prevailing in the area. Moreover, it appeared that the new land management system focuses, in the context of complex legal pluralism, on right to use rather than right to ownership, therefore leading to the most vulnerable growers developing strategies to guarantee their claim. It is worth noting that such a system will very likely undermine future adoption of irrigation technology, as it significantly focuses on

individual rather than collective logic, as well as feeding land-use conflict with the majority of users of the former communal land, now excluded from the swamps due to implementation of the OSRIP. Finally, it appears that, during the period of displacement, urban elites, forming the LRPA group, obtained access to land, furthering the transformation of the swamps from common pool resources to open access resources, since outsiders had land claims recognised, until all the land was eventually claimed as people returned home. The LRPA's significant bargaining power demonstrates power balances at various levels to control land, which also allowed them to impose collective water management for rice growing at one block level. Furthermore, the importance and sensitivity of land is again demonstrated by the rehabilitation process, as seen in the fourth section, which fuelled new power balances, all of them aiming to ensure a certain form of authority over the scheme – and therefore over land allocation – and land ownership.

In the light of this, the dynamics analysed in the project's territory clearly mirror those found in the surrounding drylands. By favouring individually-grown rice, which is risky and costly, the logic of commodified crop and commodified land was extended to the project's territory. Consequently, the latter reflects the high social differentiation also found in the surrounding drylands, through various coping mechanisms. Rice growers are thus far from being a homogenous group, on the contrary, great diversity was found in terms of economic and symbolic resources. Such diversity is also illustrated through power balances, most of them focusing on land resources. This was thus at the core of the emergence of a dynamic and locally-based legal pluralism specific to the transformed Itek and Okile swamps.

# Chapter 3: The Agoro Hills Self-Help Irrigation Scheme in Acholi

This chapter explores our second case study, the Agoro irrigation scheme, located in north Acholi sub-region near the border with South Sudan. Unlike the Olweny scheme, irrigation was not new at this site, and several attempts were made to introduce a scheme following the Chinese-imported design by one key individual, first in the late 1960s, then again in the 1990s. Consequently, to assess the main impacts and changes caused by the irrigation scheme, we have to take into account the several stages it went through, leading up to the most significant and recent one, which was defined as a rehabilitation operation by the government. Therefore, this chapter follows a timeline, describing each step of irrigation practice and external action to implement irrigation on the ground. The first section thus traces the history of indigenous irrigation in the valley. The second section then analyses indigenous irrigation institutions encountered during fieldwork. The third section explores changes caused by the most recently-implemented scheme design, in the context of the previously-described, locally-based irrigation trends. We thus demonstrate how legal pluralism also emerged at the heart of the new Agoro scheme management, although this time it was water-based, unlike the land-based legal pluralism system analysed in the Itek and Okile swamps.

Being rather isolated, the valley was barely affected by colonial and post-colonial policies for a long time, though migration patterns were disturbed by geopolitics related to its border location, as mentioned in Chapter 1. Nevertheless, newcomers settled during early colonial rule were integrated within indigenous groups. Cotton and tobacco were hardly grown in the valley, and cattle-rearing has probably never made a significant contribution to the local economy due to raids from Sudan and to the harsh climate. Nevertheless, the valley, located on the slope of the Agoro hills, has a long history of irrigation (Watson 1952) and an elaborate system, which has been in place since the precolonial era, for organising and managing agricultural practices, described by Wilson Lutara as follows:

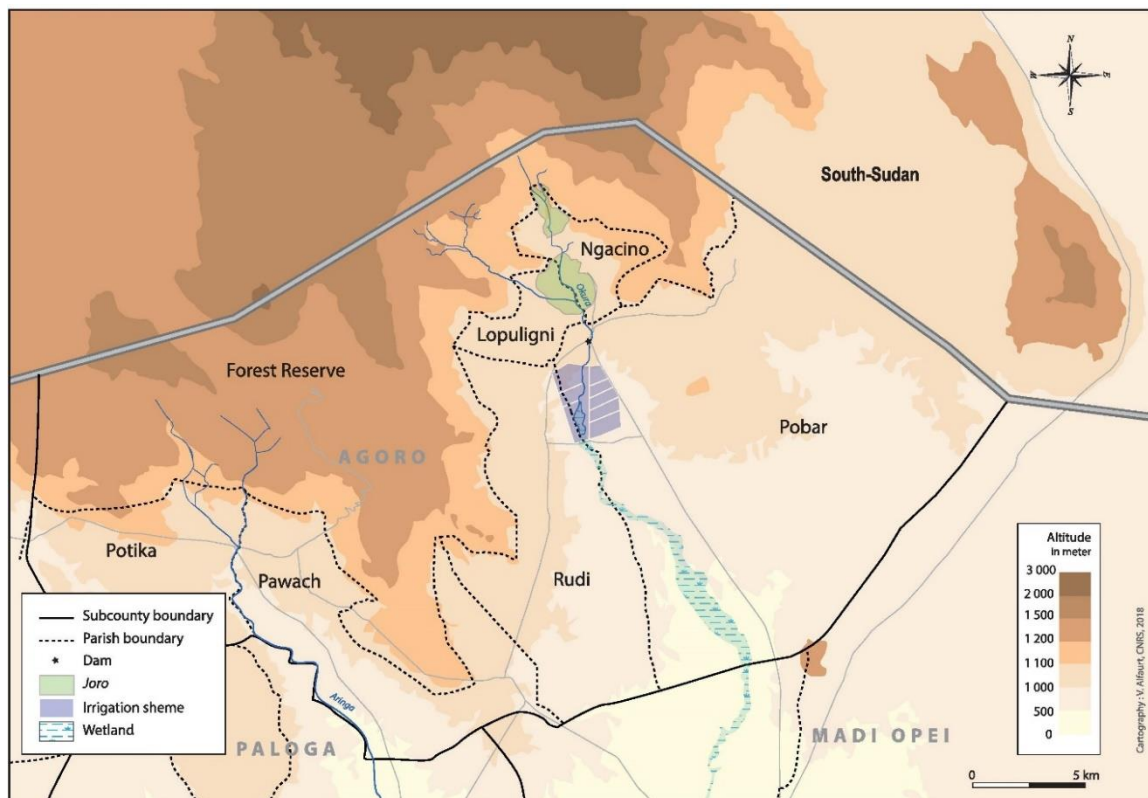
In that area there is a huge depression which extends for miles along the river, and contains some large swamps. It is to these swamps, perhaps, that the Aringa [river] owes its 'all-year-round' flow. The irrigations are in the depressions (...). When water is wanted in the fields, the peasants communally block up part of the river and the water is led into the canals. The canals are also communally made. They are so aligned on the ridges and elevated land, as to command the whole area to the best advantage. It is amazing how these uneducated peasant cultivators make the canals so nearly along the contours as possible without survey instruments. From these main

canals branch canals are taken off at convenient intervals. From these, in turn, yet smaller canals are made to take water to the individual fields or groups of fields.

When the water is no longer needed, as for example during the rainy seasons, the blockage in the river is removed and the canals dry up. In these irrigated areas one finds the most intensive cultivation practices in the whole district. (...) there is a high degree of sub-division in the areas. (...) On these plots, only food crops are often grown: maize, sweet potatoes, sorghum (...). No rotation seems to be followed generally and in most cases the plots are cultivated almost every year and rested only after many years.

It may be pointed out that the irrigated areas are mostly cultivated during the dry season. The normal rain cultivation goes on during the rainy seasons. (Lutara 1956: 48-49)

The possibility of using the Okura river, upstream of the Aringa hydraulic system, thus provided space for an indigenous irrigation system to emerge, settling mobile groups in the valley and therefore leading to a rather unique situation across the Acholi sub-region. Irrigated land indeed constituted a safety net against famine, especially in this part of Acholi where rainfall is lower and less reliable. Indigenous irrigation systems were encountered along ten kilometres, from the top of the Agoro hills where the river system starts down to the plain where the Okura river turns into a rather swampy area joining the Aringa river system. Four parishes of the current Agoro sub-county are located around the irrigated areas, each demarcated from others by the Okura river: Lopuligni and Ngacino parishes are located on the hillsides, while Rudi and Pobar parishes lie on the plain.



Map 16 : Irrigation found in the valley of the Agoro hills in 2016 (Alfaut 2018)

Within the four parishes, land under indigenous irrigation is called *joro*, meaning “soil near a river” or “inside land” by opposition to *woko* – “outside land”<sup>74</sup>. The location of the different *joro* depends upon soil properties, the blackest fertile land rich in alluvial deposits being favoured. In 1968 when Agriculture Officers came to the sub-county to transform the indigenous irrigation system, they focused on one particular *joro* surrounding the Okura river in the plain, in Rudi and Pobar parishes, which later became locally named “the scheme”.

## 1. OPENING UP THE VALLEY THROUGH IRRIGATION DEVELOPMENT PLANNING AND WAR

In this section, we focus on the main trends that contributed to shaping the irrigation practices found at the foot of the Agoro hills. The first subsection explores the first attempt to import an irrigation scheme. The second subsection highlights changes in relation to displacement during the war against the LRA, as the Agoro sub-county was hardly affected. In the light of these events, the configuration of indigenous institutions changed, helping to shape contemporary indigenous irrigation that is described in the third subsection, providing the background to the rehabilitation of the Agoro scheme in 2012-13.

### 1.1. Transforming indigenous irrigation (1968-1974)

This subsection looks at the origins of attempts to transform indigenous irrigation using a Chinese-imported design. Indeed, government intervention in the Agoro sub-county to transform the indigenous irrigation practices into an irrigation scheme resulted from an odd set of circumstances. As we will see in more detail in Chapter 4, the idea was first put forward by a newly-graduated Agriculture Officer, himself a native of a neighbouring sub-county. Convinced by the Chinese design of irrigation schemes that were built in southern Uganda starting in the early 1960s, Ocen Kato<sup>75</sup> pleaded for a budget allocation to transform the Agoro sub-county indigenous irrigation system using the same technical design as implemented in southern Uganda. He argued that since irrigation practices already existed in the valley, the scheme should be self-built and self-governed – unlike the significant investments in

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<sup>74</sup> The indigenous terms *joro* and *woko* are commonly used in the Agoro sub-county to differentiate land near a river and often irrigated during the dry season from the land which is not – unlike in the Olweny swamps where the terms are in English (the *woko* could be compared to the dryland, which is mostly customary land, in the land around the swamps).

<sup>75</sup> The name has been changed.

construction and management allocated to the Kibimba, Mubuku and Doho schemes at this time. Consequently, to reproduce what the Acholi Agriculture Officer had seen in the Kibimba irrigation scheme, about 570 hectares of *joro* from Pobar parish on the border with Rudi – just upstream of the swampy area – was surveyed. Transforming the indigenous irrigation systems relied, on the one hand, on diverting the river water through new water gates and channels and, on the other hand, introducing cash crops such as vegetables and rice. The project was named the Agoro Self-Help Irrigation Scheme and lasted a few years, before Idi Amin’s regime led to its abandonment.

As one of the main impacts of full implementation of such a design for the irrigation system would have led to significant disruption in terms of land management most people probably opposed it. The new water infrastructure was indeed based on an irrigation design – the Chinese model, aiming at rice growing over large, flat wetlands – which did not take into account the local *joro* management, considered to be a “backward” system that needed to be “modernised”. However this first attempt did lead to some changes. Although the few items of water infrastructure that were built quickly collapsed due to lack of local participation, new practices were adopted regarding the construction of *page*. These structures are temporary dams for blocking the river water and are locally made. Since the first attempt to implement an irrigation scheme, the *page* included sandbags, increasing their water-holding capacity when coupled with wooden poles, as shown in the pictures below:



*Picture 21 (left): Construction of an indigenous page for the irrigation scheme  
(Ocen K. 1969)*

*Picture 22 (right): Blocking the diverted Okura river flow for the irrigation scheme  
(Ocen K. 1969)*



*Pictures 23 & 24: WUA members diverting water through a page early in the rainy season (Torretti 2016)*

Finally the main impact of the first government intervention in the valley was development of the cash economy, mostly through vegetable growing, which became a lucrative business, especially in such a dry area. At this time Kitgum town, located about 80km to the south, already numbered 3,000 inhabitants, and under the Agriculture Officers' influence, vegetable production started to feed the growing urban centre, with a particularly significant advantage during the dry season. Consequently, cultivators in the valley adopted changes they perceived as benefiting them: while the abandonment of the *joro* management system promoted by the Agriculture Officers did not become popular – rather leading to significantly low local participation and adoption of the irrigation scheme – some changes, in the form of adopting vegetable growing and increasing the capacity of the *page* to retain river flow, remained.

In conclusion, unlike the Olweny scheme, this first external attempt to introduce a formal irrigation scheme was hardly disruptive for indigenous irrigation. Indeed, as we have highlighted in the first chapter, the Acholi sub-region was not affected as much as the Lango sub-region by colonial policies, and this was also true of post-independence dynamics. Moreover, in the rather isolated and dry Agoro sub-county, indigenous irrigation institutions were hardly distorted, and proved to be highly resistant to an attempt which lacked finance for design, implementation and supervision. Since the Agriculture Officers left the valley after a few years, the imported scheme did not root while pre-existing institutional structures continued to prevail over the *joro*. After that, social structures related to land and water management hardly changed during Idi Amin's regime which put an end to the Agriculture Officers' work in the valley. Later, following the Bush war, while withdrawal of people from national and regional markets had been more or less general since the Idi Amin period, the war against the LRA was a second external event contributing to opening up the valley. As we



will now see, the latter indeed became a key area during the war for rebels, who used it to cross the border. A significant camp for Internally Displaced People (IDP) quickly developed in the 1990s, attracting international donors as well as government attention.

## 1.2. Wartime in the Agoro sub-county

This subsection focuses on the second attempt by Ocen Kato to transform indigenous irrigation in the valley, as well as to introduce rice. In the midst of displacement, which strongly affected the population of the Agoro sub-county, previous resistance on the ground to transforming irrigation did appear to be somewhat weakened. Consequently, the Agriculture Officer's second attempt proved to have more impact than the first, as we will now see.

Indeed, the rice boom that started in Uganda in the 1990s reached the Acholi sub-region as well, mainly around the IDP camps. In 1993 one of the previously assigned Agriculture Officers, Ocen Kato, was assigned from the Kibimba rice scheme back to Kitgum district in order to resume the irrigation scheme he had initiated. In the context of displacement, and the need for the inhabitants of the camp to make an income in order to survive, the focus was on the introduction of irrigated rice-growing using the same water infrastructure designed in the late 1960s. This time, impoverishment and the weakening of social structures due to displacement seem to have favoured the adoption of the previously-rejected design, at the least for some of the former *joro* growers. Finally, bringing seeds from the Kibimba scheme and the use of demonstration plots facilitated the adoption of rice with, as in the Olweny swamps, a certain degree of social and spatial differentiation. Indeed, on the one hand, the aristocratic clan of the Pobar chiefdom and its related clans from the Pobar parish had the most suitable land within the *joro* for irrigation as the micro-topography is relatively flat. On the other hand, they were probably the most receptive to external intervention to change practices since those clans were linked to sources of authority found in the sub-county, which had also previously supported the government. Finally the Agriculture Officer's work once again ceased when he fled due to the extreme violence of the war that followed the Iron Fist military operation in 2003, as we will see in more detail in Chapter 4. In this context, the agreement he initiated with the World Food Programme to fund the "rehabilitation" of the irrigation scheme was abandoned as well.

According to eye-witness accounts, the initiative aiming to spread rice cultivation using the imported irrigation design brought mixed feelings. The water infrastructure design was once again only partially implemented, mostly due to lack of finance, to the general, chronic insecurity and to local rejection – although this time the latter was probably much weaker since the area was hit hard by the war. Caroline Lamwaka describes the situation in the sub-county after a visit in 1999:

The Agoro area was known for rice growing, wheat, simsim, groundnuts, maize, cabbages, and other crops. Once every month a big market is held known as 'Auction Day', where traders from Sudan, Kitgum, Gulu, Lira and even Kampala, Jinja, and other places in southern Uganda come to buy and sell items, including livestock from the Sudan, which supply the Gulu and Kitgum markets.

It was sad that the people of Agoro were not experiencing the relative peace that their counterparts in other parts of Acholi were enjoying. Displacement had had its effect on the population, some of whom had been reduced to relying entirely on food handouts from the World Food Programme. A total of over 2,760 people were displaced at the Agoro Sub-county Headquarters at the foot of the mountain, having abandoned their homes in January 1999. This followed the forced evacuation of the population by the UPDF in December 1998 and January 1999 in the wake of LRA's entry into Uganda from the Sudan through this area. (...) People were hungry. WFP brought them some maize flour, cowpeas, and cooking oil. The more than 2,700 displaced people who resided in the camp at the sub-county headquarters had arrived in a rush, abandoning their homes and fields (...). They said that all those areas [the ranges in the Agoro mountains] had been heavily mined by the UPDF to prevent the rebels from crossing over from the Sudan. (...) People risked the mines because they were hungry.

Insecurity in the Agoro area was not new. Cattle raids from across the border in Sudan began in 1987, and as late as July 1998 the rustlers killed one person and looted many homes. In 1993, LRA rebels burnt homes in the Agoro mountains across a distance of 12 miles from Rudi to Pobar (...) in July 1998, the LRA entered Uganda from Langiya range in the Agoro mountains, and from there attacked and abducted many people (...). They also killed 38 people, many of them children. (...)

[The rebels] took goats and poultry, and uprooted cassava, potatoes, beans, onions, cabbages, and maize from people's fields (...).

Drugs were scarce at Agoro Dispensary. Eighteen people were down with sickness, twelve of them with dysentery as a result of drinking water from the open Okura stream. (Lamwaka 2016: 345-347)

Moreover, the presence of international organisations – which highly increased due to the war – coupled to life conditions in camps eased the introduction of rice growing, the crop being a favoured lucrative crop in such context. The development of land leasing, which was hardly practiced before the war, spread, as noticed by Caroline Lamwaka:

Like the majority of people in the camps, Francis Moro had learnt to survive from one small job to another. For three years, he had rented half an acre of land outside the camp on which he grew rice. (...) At the time when he was growing rice, he got six bags of rice from the rented land worth Shillings 200,000 after paying for labour. (...) But finding a piece of land near the camp to rent was not easy, while getting the money to rent such land was also a dream for many people. (Lamwaka 2016: 364)

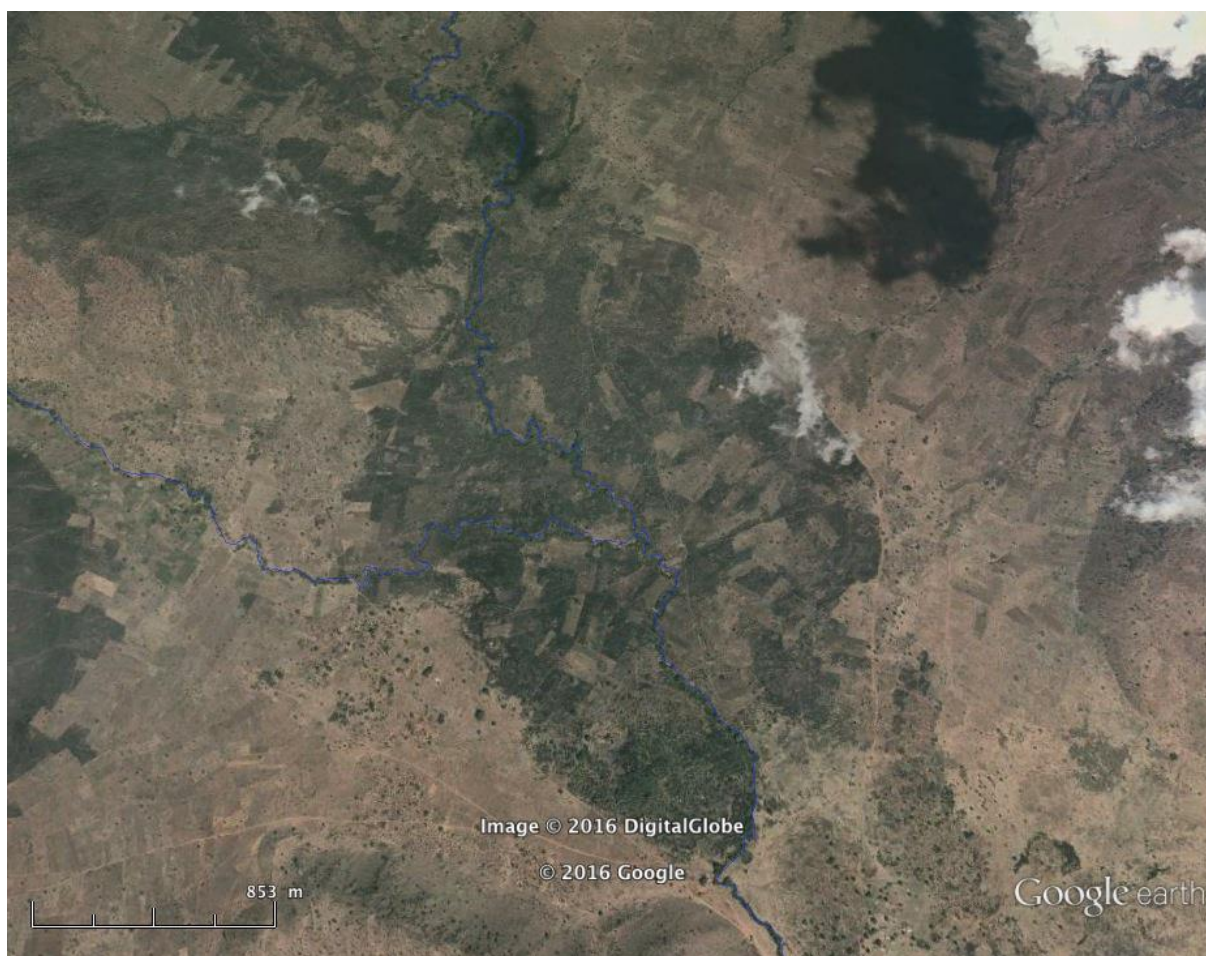
Interviews during fieldwork in 2016 indeed demonstrated that although the communal clan land tenure system remains in place today across the Acholi sub-region – unlike in Lango – the adoption of rice in the valleys of the Agoro hills normalised irrigated land leasing since *joro* is considerably limited in terms of area compared to the *woko* – the dry land which continues to be used extensively with shifting agriculture. This also contributed to the spatial differentiation of the Agoro Self-Help Irrigation Scheme, as the imported irrigation design, unlike the indigenous irrigation systems, relies on a very flat micro-topography in order to carry and control water over distance and time through channels. Consequently, nowadays, the price of leasing one acre of the most suitable land for rice growing can reach UGX100,000 per season. In other parts of the irrigation scheme, where access to water is poor or unreliable, one acre can be leased for around UGX20,000 and, most of the time, for free in the *woko* area.

In conclusion, as the context changed significantly between Ocen Kato's first and second attempts, the valley finally opening up to significant externally-driven events, perception of rice growing also changed on the ground. Since the crop suited camp life as well as becoming lucrative, especially in the 1990s, some of the scheme's elements promoted by Ocen Kato finally rooted among high levels of impoverishment and weakening of indigenous institutions. After the cease-fire this led to a visible spatial differentiation of the *joro* which Ocen Kato aimed to turn into an irrigation scheme. Indeed, though several areas of *joro* land can be found in the valley, rice is grown only in the one located at the foot of the hills, shared by clans from the Rudi and Pobar sub-counties. This *joro* is also locally called the "irrigation scheme", and was the subject of a "rehabilitation" operation conducted in 2012-13, which aimed to implement onerous, heavy infrastructure as well as extending the amount of land under irrigation, as we will see in the second section.

### 1.3. Indigenous institutions for irrigation

Finally, before the next section, which focuses on the Agoro irrigation scheme after the rehabilitation operation, this subsection explores how contemporary indigenous institutions for irrigation are organised in the Agoro sub-county, thus providing better understanding of the institutional changes caused by the scheme. Information was obtained from interviews and field visits conducted in Ngacino and Lopuligni parishes, where *joro* are found upstream.

Ngacino and Lopuligni parishes, where human settlement and irrigation technology are the longest-established in the valley (Watson 1952, Crazzolara 1954), are characterised by hills and foothills. Extremely isolated and far from the road network, these parishes are also characterised by having practically the highest population density in the district<sup>76</sup>. The concentration of clans is particularly high and villages, located on the hillsides, are not necessarily composed of a single lineage. Several *joro* can be found along the Okura river, which marks the boundary between the two parishes, *joro* being locally defined as irrigated land used for permanent agriculture, meaning irrigating every dry season without shifting after a few years, as illustrated in the picture below:



*Picture 25: Aerial view of joro (land under cultivation bordering streams) owned by families from Lopuligni and Ngacino parishes upstream of Central Village, the former IDP camp (Google Earth 2016)*

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<sup>76</sup> In 2006, the population was estimated at around 300 inh/km<sup>2</sup> in Lopuligni parish and around 110inh/km<sup>2</sup> in Ngacino parish, while Rudi and Pobar parishes had a density of about 40 and 25inh/km<sup>2</sup> respectively (UBOS 2006).

Every *joro* is characterised by one or more *page*, which is a hand-made non-retentive dam consisting of grass, mud and shrubs planted using sandbags in the stream to help divert the flow<sup>77</sup>. A network of primary and secondary channels then derives from the *page* to irrigate the *joro*. During fieldwork six *page* were identified alongside the stream network in the slopes above the Okura river, often named after a clan, sub-clan or village. Thus one *page* brings together a group of irrigators based on their geographical location rather than membership of kin groups. The *page* are named after the inherited land they irrigate with primary and secondary channels, in the same way as a garden might be, as sketched below:

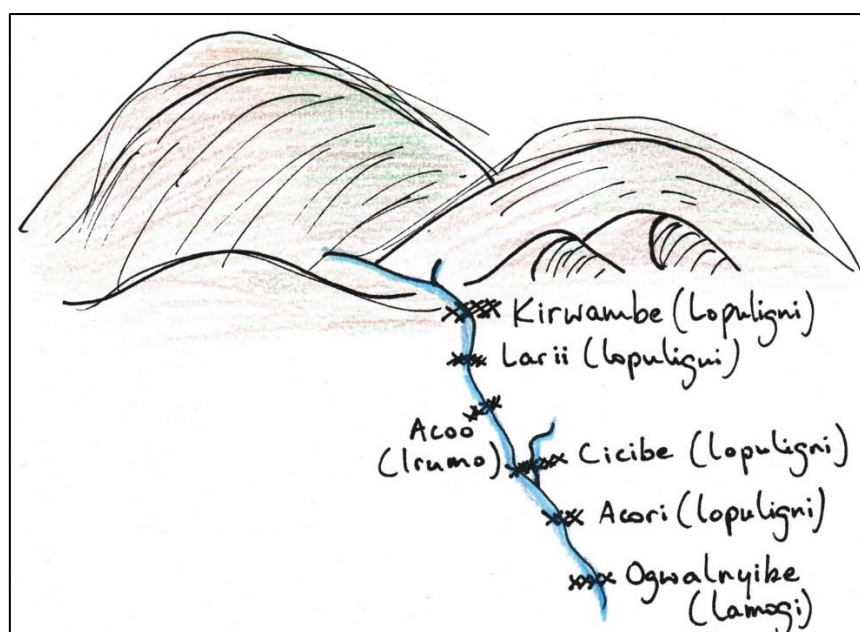


Figure 20: Sketch of the *page* locations identified in Lopuligni and Ngacino parishes (Torretti 2016)

This indigenous irrigation is conducted during dry season not only to improve food security but also to provide a reliable income from selling the surplus. Growers who were interviewed mentioned that, without the irrigated *joro*, it would be unlikely that the inhabitants of those parishes would be able to sustain such a high population density. Groundnuts, maize, cassava, sweet potatoes, vegetables, even a few banana trees and some sugar cane are grown. Local inhabitants have developed a system where the predominant crop changes as one moves up the hill, probably adapted to the micro-environment, as tentatively sketched below:

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<sup>77</sup> The use of the shrubs illustrates that these indigenous irrigation systems are capable of innovation, since interviews suggested that such practices appeared only one to two generations ago.

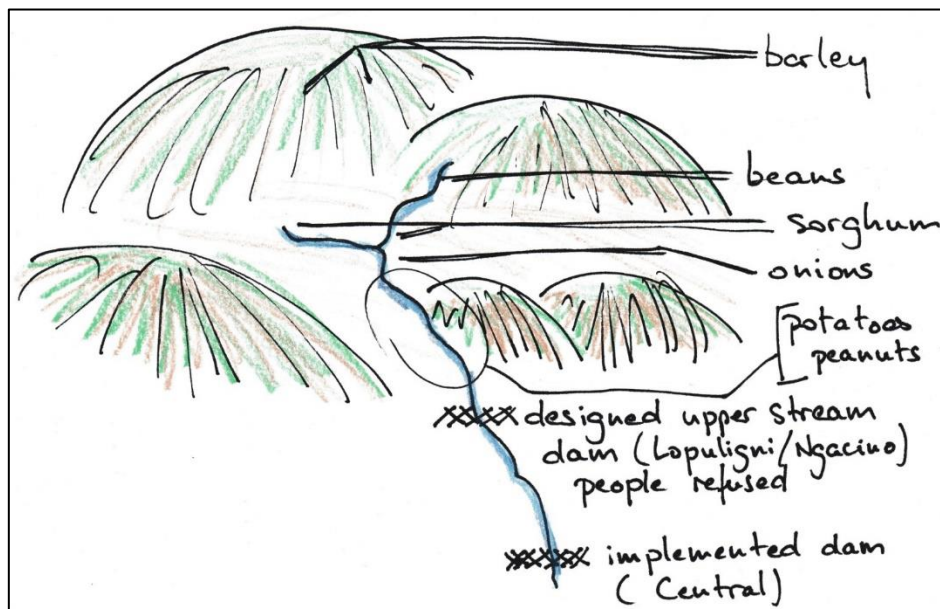


Figure 21: Sketch of preferred crops according to micro-variations in altitude in the valley (Torretti 2016)

During the rainy season the *joro* are left fallow due to frequent flooding of the streams. During that period the land called *woko* is cultivated, *woko* being defined in those parishes as land cultivated during the rainy season or land down to rain-fed agriculture. As downstream, in Rudi and Pobar parishes, distinct bylaws apply to these distinct areas. While *woko* is under the control of clan leaders and the *rwot kweri* in charge of its management (re-allocation between the households every two or three years after changing location, conflict resolution, granting permission to outsiders to freely use the clan's land), the *joro* found upstream are managed by leaders who are re-elected – or not – to their job every year by the irrigators. For most of the *page*, the *rwot kweri* is in charge of mobilising irrigators to open water channels by digging, and to build the *page*. Some of the *page* visited during fieldwork could thus mobilise up to seventy households. A board is then chosen by the individuals who took part in the digging – and who thus gained the right to access water for irrigation. The board is composed of a Chairman – the *ladit maloyo wang pii* – and its committee, and is responsible for management of the irrigation system: they decide on the schedule for water allocation between the different channels, resolve conflict when the rules are not respected and, if necessary, coordinate with other *page* to share water. This latter process is described as fairly peaceful, since no significant dispute between *page* was reported during discussions. There is hardly any coordination between the upstream *page* and those encountered downstream in Pobar and Rudi parishes since so far it has not appeared to be necessary. Indeed, interviews reported that 1992 was the only year in which the severity of the dry season led downstream irrigators

to ask those from Lopuligni and Ngacino parishes to release water. Moreover, the request was apparently readily accepted, since no tension or conflict appeared regarding water sharing in the valley at that time.

Each main channel diverting water from the *page* is thus receives water flow allocated in turn between a few smaller channels. Smaller channels are found alongside each main channel. Water is allocated to individual plots along one secondary channel according to different rules. First, the water flow is blocked during the night. Second, the first irrigator to access water in the morning is the first irrigator that arrives on site, and only one irrigator at a time can access water. Failure to respect the established rules leads to a fine, paid in cash or kind to the *page* group. Cultivators who did not participate in opening channels can access water after negotiating a price to be paid in cash to the *page* group. The money thus collected is then re-invested collectively in the irrigation system – for example buying sandbags. This type of irrigation system, based on people collectively irrigating land with water diverted through *page* is also found downstream within the scheme. In this area two distinct irrigation practices co-exist: the indigenous practice that originated from the Lopuligni and Ngacino parishes, and the practices introduced by the irrigation scheme, as we will see later.



*Picture 26 (left): Planted shrubs diverting water flow in Lopuligni parish in the rainy season (Torretti 2016)*

*Picture 27 (middle): Irrigator opening a secondary canal to access water by means of a group *page* system in the rainy season (Torretti 2016)*

*Picture 28 (right): Irrigating banana trees in Lopuligni parish in the rainy season (Torretti 2016)*



*Picture 29 (left): Joro shared by irrigators from Lopuligni and Ngacino parishes early in the dry season (Torretti 2016)*

*Picture 30 (right): Page blocking water built by a group of irrigators from Lopuligni and Ngacino parishes early in the dry season (Torretti 2016)*

In conclusion, while the impact of Ocen Kato's first attempt to transform indigenous irrigation in the rather isolated Agoro sub-county was mostly limited to the adoption of vegetable growing, the second attempt became better established in the midst of wartime. Indeed, his intervention in a *joro* shared by clans from the Pobar and Rudi parishes eventually led to the adoption of rice, although over a limited area, but still mainly following the design he tried to import from his experience in the southern, Chinese-implemented scheme. Meanwhile, in the upstream *joro* located in the Ngacino and Lopuligni parishes, indigenous institutions for irrigation were mostly unaffected by such external influences. In these areas, irrigators are organised among themselves and active during the dry season. In each *page* group, access to water is conditional on participation in opening earth water channels, dug anew each season. Bylaws, fairly similar in the different *page*, define water allocation as well as fines in the event of failure to comply with them. The next two sections demonstrate how, by transforming the former *joro* management system into a hybrid one, the 2012-13 rehabilitation of the Agoro irrigation scheme modified its management in a disruptive manner.

## 2. IRRIGATING LAND AT THE FOOT OF THE AGORO HILLS

As rice production spread through the valley in part of the *joro* located at the foot of the hills, and more particularly to a few clans in Pobar parish, interest in this particular land increased. Nevertheless, indigenous irrigation remained in place upstream in Ngacino and Lopuligni



parishes, as well as in some parts of the *joro* downstream in Pobar and Rudi parishes, as we will see. In order to assess changes caused by the rehabilitation conducted in 2012-13, this section describes the project territory as encountered during fieldwork. The first subsection therefore describes how land is managed within the scheme, as well as in the surrounding areas. The second subsection introduces the design implemented in 2012-13, while the third provides an analysis of the social and spatial differentiation which emerged from the rehabilitation.

## 2.1. Land management in Pobar and Rudi parishes

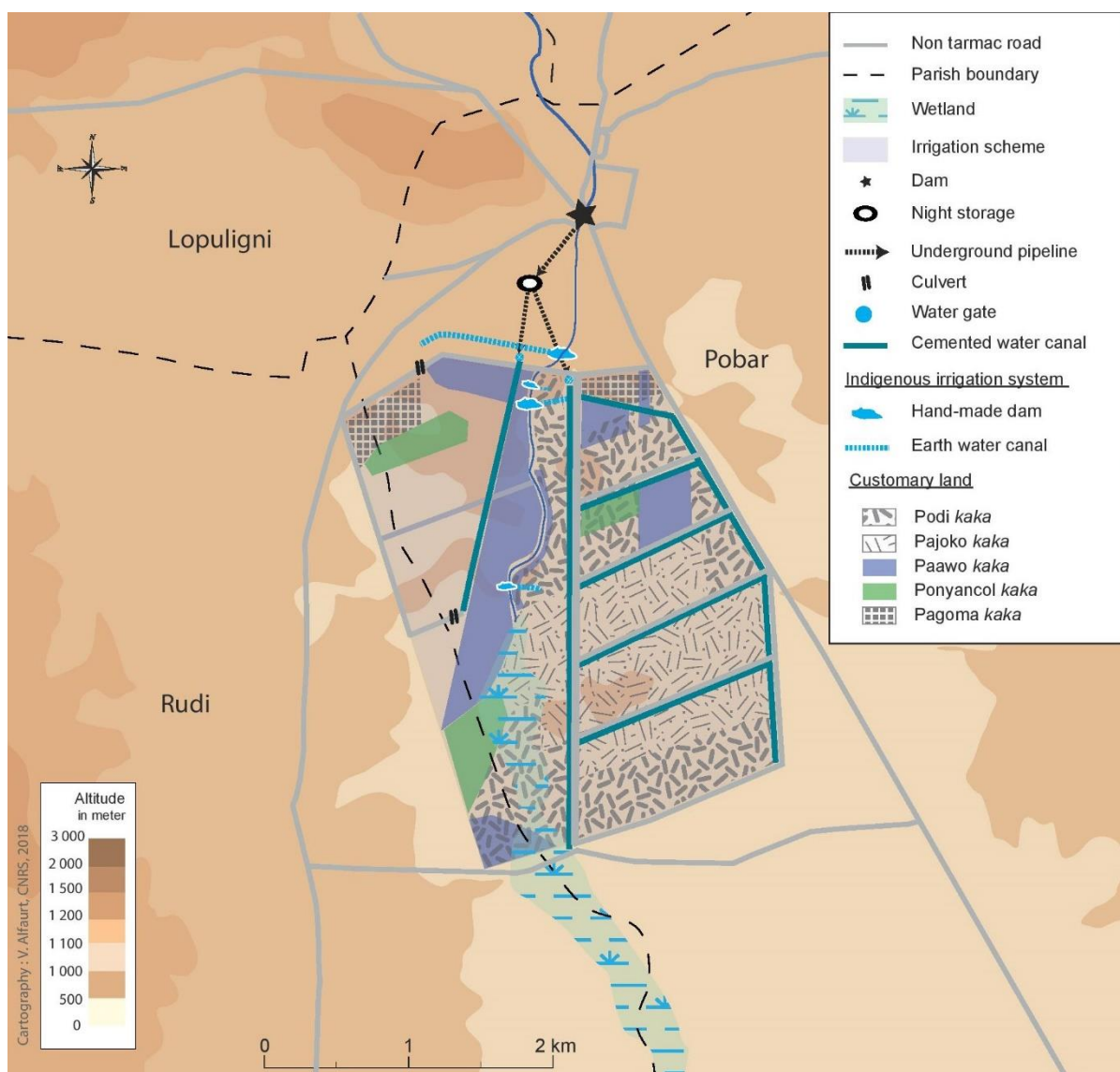
This subsection analyses the land management system found in Pobar and Rudi parishes where the irrigation scheme is located. Indeed, since we aim to identify the nature of changes linked to the land resource caused by the irrigation scheme, we first use mapping to analyse land management inside and outside the scheme, as well as its distribution between the various lineages.

As previously mentioned, indigenous irrigation is also present below the hills, in the plain, though it came later, as migrating groups distinct from the ones upstream settled afterwards. According to local oral history, Bar and Rudi, who were brothers, crossed the valley seven to nine generations ago coming from Sudan. While Bar settled in the valley west of the Okura river, the current native kin clans of Pobar parish being named after his four sons, Rudi kept moving before coming back to settle east of the Okura river. Two clans encountered in this parish claim to be the descendants of Rudi's two sons. Other clans came to both parishes, though to a greater extent to Rudi. In the latter, where this settlement was due to colonial rule, they were welcomed and gifted land by the native kin clans including within the *joro*, causing this land to be much more fragmented than that east of the river. In Pobar parish, minor clans came as well, seemingly later and in a much smaller proportion, and were welcomed by the aristocratic clan more as guests. As such, they were given only *woko* land to cultivate, excluding any rights on it. In Rudi parish, villages are composed of one lineage, while in Pobar parish lineages tend to be mixed. Four of the six clans in Rudi parish – the closest ones – and four of the five clans in Pobar parish – the native ones – own *joro* land within the scheme. Due to the high degree of land fragmentation found today, not all the households in those clans have access to *joro* but most extended families do.

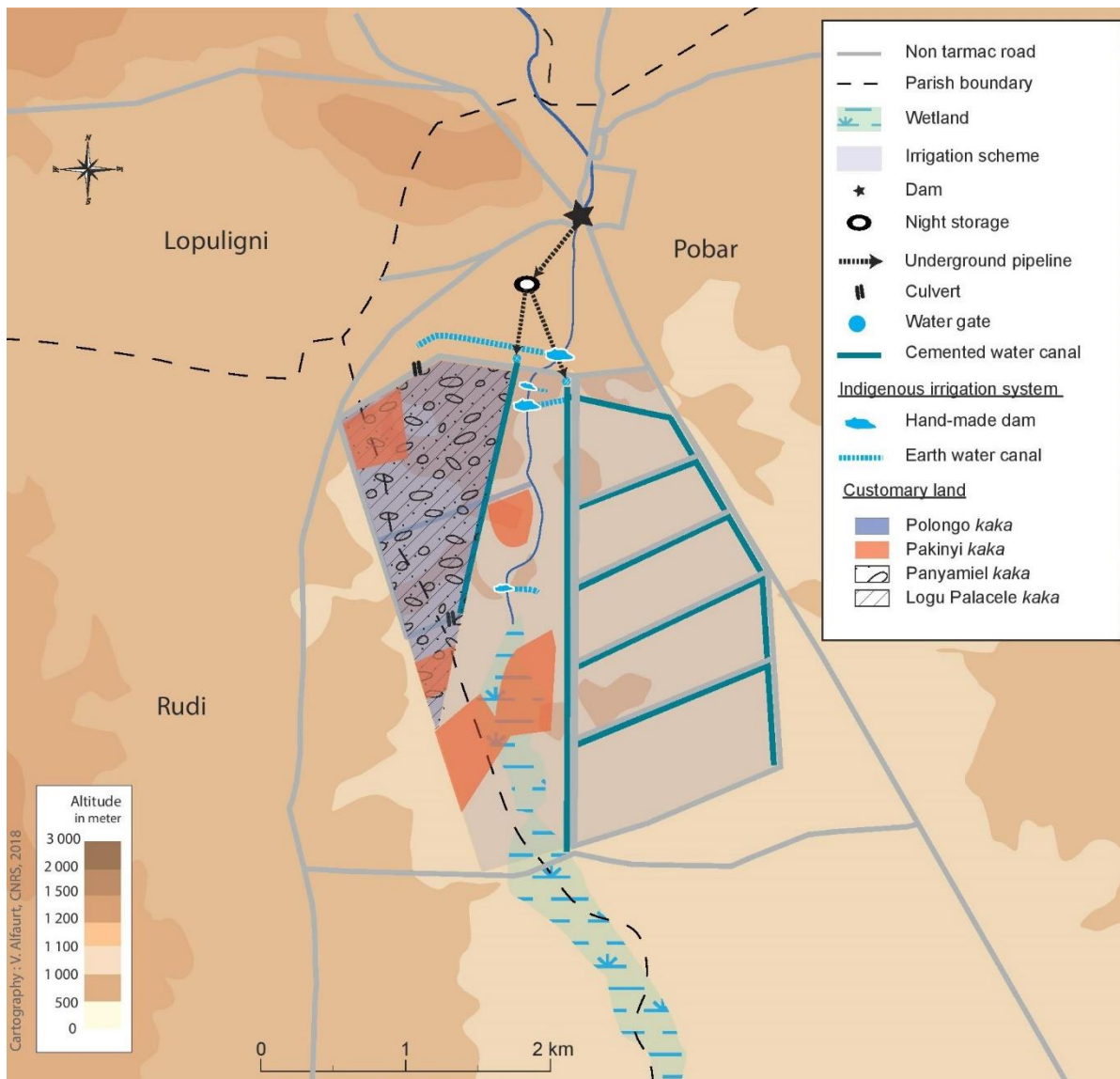
In Pobar and Rudi parishes, *joro* is called “wetland”, “inside land”, “family land” or even “inherited land” while the *woko* is named “dryland”, “outside land”, “clan land”. Each clan has its own bylaws, collectively established for several generations, tending to be similar among the different clans. The *woko* land is held similarly to most of the land in the Acholi sub-region: rights over land are communally held and guaranteed by membership of a clan. The *rwot kweri*, collectively chosen among clan members, is in charge of land management – meaning looking for fertile land, allocating it to families in the context of shifting agriculture, solving potential land conflicts – sometimes in association with other types of clan leaders such as the *ladit kaka* or knowledgeable elders. Households are then granted a right to use land they are allocated, mostly for cultivation, usually for two to three years. For outsiders, leasing land considered as *woko* is not accepted among every clan, but when it is, cash compensation is not usually expected. For all the clans interviewed, selling land, whether in *woko* or *joro*, is unacceptable. Besides being a significant economic asset, land seems clearly linked to clan identity and history. Also, selling land meets with resistance from Acholi philosophy, according to which land belongs jointly to the ancestors, the living and the coming generations. Finally, a few clans who were interviewed mentioned guests living on their land – meaning outsiders who have established themselves on the land of one clan for an indeterminate but temporary period – whose presence seems particularly significant on land belonging to the royal clan of Pobar, the Podi *kaka*. For this particular aristocratic lineage – the *ker kal* – guests have been welcomed to the point that the clan has developed a land management system based on several *rwodi kweri*: a *rwot kweri maiye* manages the *joro* from which guests are excluded, and two *rwodi kweri manwoko* manage the *woko*. Nevertheless none of the clans interviewed reported guests holding any rights over land or even participating in the collective decision-making process regarding land, nor do they have access to *joro*, unless severe droughts occur.

Although in most cases the *joro* is ultimately owned by the clans, consequently making selling unacceptable, rights linked to land management are left to households. They are transmitted through patrilineal succession, unlike the *woko*, and are not necessarily linked to permanent cultivation. In most clans, household heads are free to divide land between their sons or to lease it to outsiders, as long as they previously informed the clan's *rwot kweri*. Leases are more strictly supervised in a small number of clans since they receive a certain percentage of the lease price. The funds thus collected are then redistributed in the interests of the clan and its members, for example contributions to burials or supporting land claims in court on behalf of the clan. For nearly all the clans interviewed, the *rwot kweri* has no authority or control over

*joro*. In the case of a land dispute, the neighbours are mobilised, since the high degree of fragmentation has led to heterogenous land distribution among clans. The micro-environment is therefore used for complex land demarcation, such as particular trees, ant hills, and/or variations in micro-topography. Nevertheless, reflecting the settlement history of the clans on the plain, a certain pattern appears in the irrigation scheme land, which extended former *joro* slightly east of the river into former *woko* of the Pobar parish clans. West of the Okura river, land tends to be owned mostly by households from Rudi parish, with a higher fragmentation and clan mixing, while land east of the river tends to be owned by households from Pobar parish, as illustrated by the following map:



*Map 17: Approximate location of most of the joro land in the irrigation scheme owned by the clans (kaka) of Pobar parish (Alfaut 2018)*



*Map 18: Approximate location of most of the joro land in the irrigation scheme owned by the clans (kaka) of Rudi parish (Alfaut 2018)*

In conclusion, the *woko* and *joro* land management system is also found downstream, in Pobar and Rudi parishes. Both kinds of land are communally held by clans but with distinct bylaws, giving households more authority over *joro*. This illustrates significant resilience from indigenous institutions as they recovered from displacement, as found more generally across the Acholi sub-region (see Chapter 1). While *woko* land management appears to be rather similar across the sub-county, the distribution of *joro* land among lineages appears to be closely linked to settlement history. Clans from the Pobar parish, who were central to the formation of the Pobar chiefdom, own most of the land east of the river while land west of the river tends to be owned by clans from Rudi parish. In the latter parish, kinship between lineages appears to be weaker, as several clans were settled under colonial rule but given *joro* land by previously settled groups. Consequently, clan land is more fragmented west of the

river than to the east, where only two clans – the aristocratic Podi *kaka* and their kin Pajoko *kaka* – own most of the land where Ocen Kato introduced rice growing.

## 2.2. From *joro* to the irrigation scheme: the 2012-13 rehabilitation

This subsection describes the design implemented during the construction work conducted in 2012-13 by Dott Services Ltd., under contract to the MWE. Nevertheless, as occurred in the Olweny case study, the gap between the expected design and actual implementation was significant, as we will also see. In the end, the actual “rehabilitation” considerably transformed access to water, although not in the manner intended by the Ministry of Water & Environment.

Funded by the Farm Income Enhancement and Forest Conservation (FIEFOC) programme at a cost of UGX27 billion<sup>78</sup>, the *joro* previously forming part of the scheme was meant to be “rehabilitated” following once again the same general design used in the 1960s. Feasibility and technical studies were carried out by Arch Design Ltd. and OO&P. The targeted area, covering about 670 hectares, was larger than that envisaged by Ocen Kato, coupled with considerable water retention infrastructure. Indeed the Okura stream was meant to be fully diverted from its bed and stored in a basin, mostly during the rainy season (see the following layout plan).

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<sup>78</sup> About US\$10 million at this time.

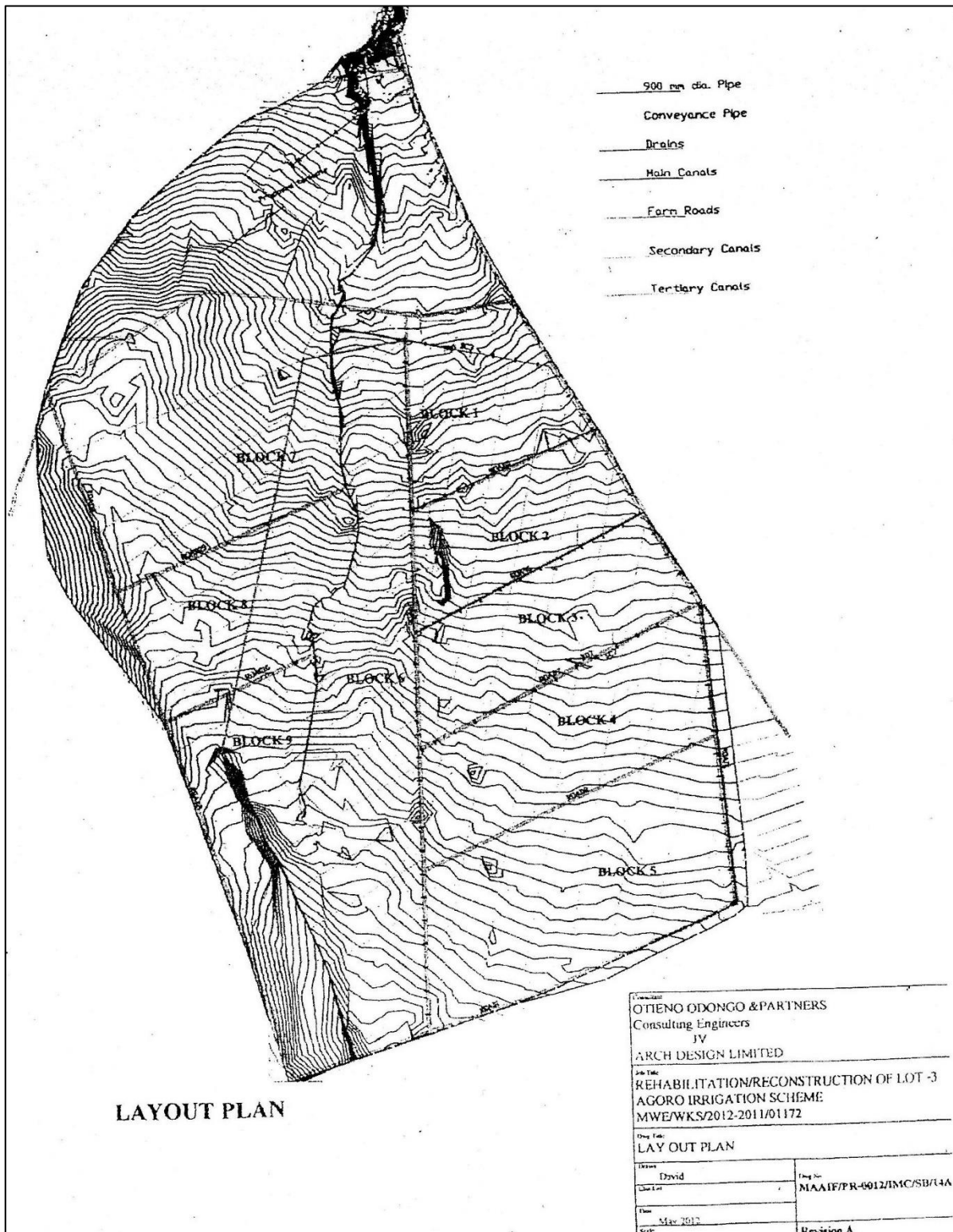


Figure 22: Layout plan of the Agoro Self-Help Irrigation Scheme  
(OO&P & Arch Design Ltd., 2012)

This time, water channels were also intended to be cemented, except for the tertiary channels, dug by hoe and demarcating plots. Cemented channels were also intended to demarcate production blocks, as water gates would allow water rotas to be implemented, not only between distinct plots within one block but also between different blocks as well. As with

the Olweny irrigation scheme, a co-operative society model was preferred and the ASHISCS (Agoro Self-Help Irrigation Scheme Co-operative Society) was registered in April 2013 to oversee the irrigation scheme. Buildings for administrative and storage purposes were thus built to allow it to fulfil this role. Construction work started in 2012 and ended in 2013. For the first time, most of the Okura stream was diverted through a spillway thanks to a cemented dam, located upstream of the Central village – the former IDP camp – to feed a storage basin by an underground pipeline, as illustrated below:



*Picture 31 (left): Fenced, cemented dam diverting water to the spillway and underground pipeline at the end of the rainy season (Torretti 2016)*

*Picture 32 (right): Diverted water (in front) and the old Okura streambed (behind) at the end of the rainy season (Torretti 2016)*

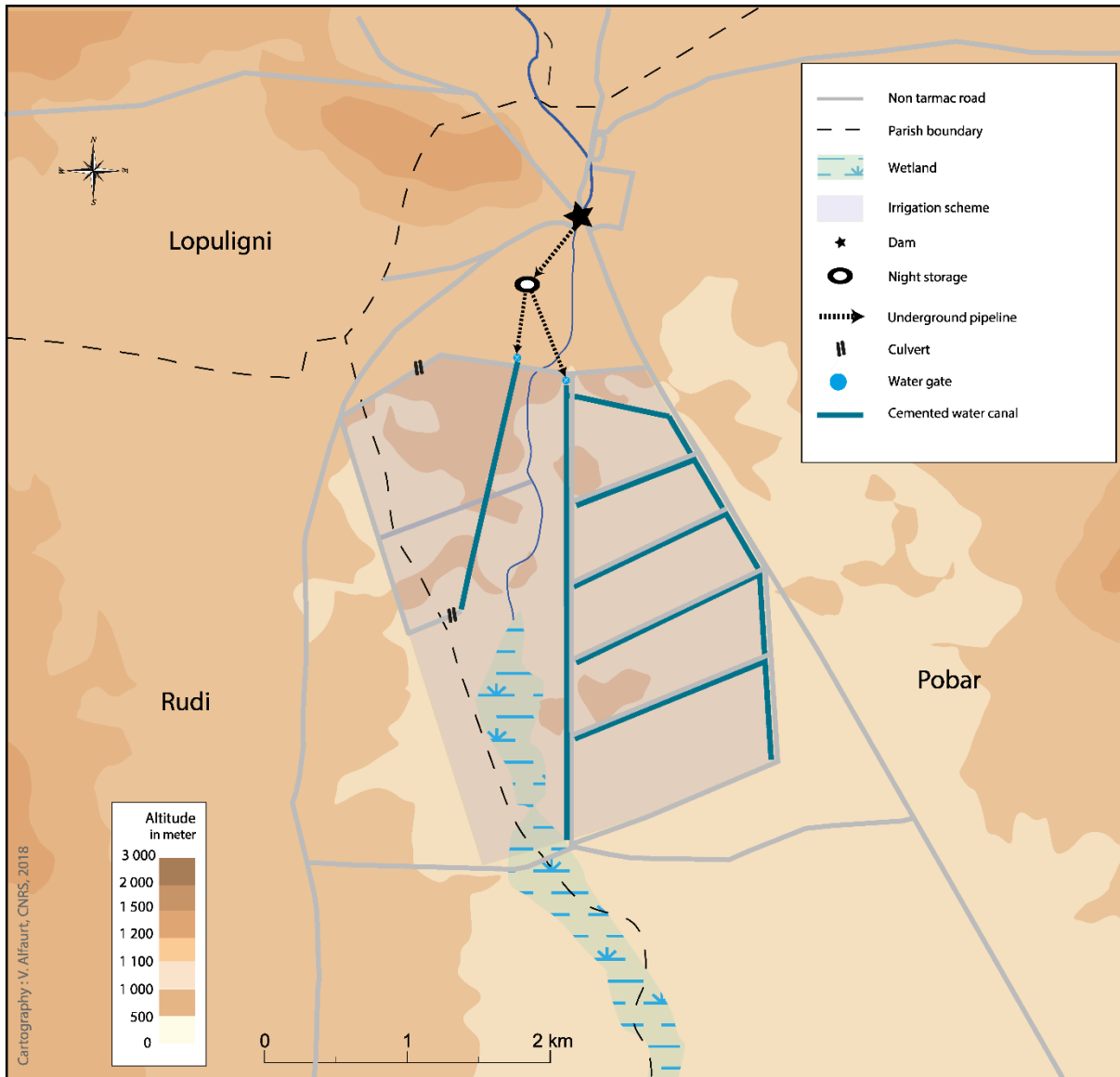


*Picture 33 (left): Diverted water meeting the former Okura streambed at the end of the rainy season (Torretti 2016)*

*Picture 34 (right): Night storage basin at the end of the rainy season (Torretti 2016)*

From there, several underground pipes feed a network of cemented channels, partially reproducing the 1960s design. This rehabilitation did, therefore, eventually materialise the irrigation scheme, based on the model of those developed in southern Uganda, as previously

attempted. However, the process met with significant resistance and did not go as planned. The following map shows the actual implementation of the infrastructure:



*Map 19: Infrastructure actually implemented after the 2012-13 rehabilitation (Alfaut 2018)*

The building of roads and cement channels in the scheme led to some loss of land for some clans, which did not encourage cooperation and exacerbated feelings of exclusion from the process. Moreover, the construction company was denied access to a large part of the transformed area by *joro* cultivators when the company apparently tried to level the land. Indeed, such an irrigation scheme, as in the Olweny swamps, requires a flat micro-topography, as water flows over significant distances by gravity. On the contrary, indigenous irrigation copes with an irregular micro-topography thanks to the flexibility provided by hand-dug



channels over small distances, which can adapt to rainfall within a single season, or from one season to another, by being re-shaped. Nevertheless, land levelling within the scheme would tend to eliminate current land demarcations between households and be likely to lead to the collapse of the *joro*, which has a specific, central social relationship to land in the valleys of the Agoro hills. People therefore became mobilised and significantly undermined the rehabilitation process in order to preserve a land management system that was unique in the sub-region, and which had operated since the precolonial era. This was illustrated for instance in a letter addressed to the manager of Dott Services Ltd. during the first Annual General Meeting of the co-operative society:

Sir, you are aware that tertiary canals from BC2 were not dug because some farmers refused to allow access (...), you are also aware that this side of the scheme will never receive the scheme water unless these tertiary canals are opened. (...) This letter therefore serves to give you a go ahead to start opening the canals without any issue of compensation to whatever will be destroyed. With copy of this letter, you will also use the police to handle anybody who will cause problem during the work and the above society will be responsible for handling the cases. (Chairman of the ASHISCS, 21/06/2013)

One of the members (...) said farmers refused for land to be levelled because they did not understand what it was meaning and no sensitization was done to farmers. He said during construction, community members were not given the chance to advice the contractors. (Minutes of the 1st AGM of the ASHISCS June, 2014)

In a post-war context, where land represented people's sole remaining economic asset, and given the particularly significant importance of land under irrigation in a dry climate, the top-driven imposed approach adopted throughout the rehabilitation process not only led to collective action to deny access to the construction company, but probably exacerbated existing fears of land grabbing, though some informal discussion conducted during fieldwork showed divided opinion (Anonymous, August 2016):

-So, were you among the people who denied access to land to the construction company?  
-Well, yes, but only in the beginning. (...) Because in my village, people started to talk, and some told me: 'You can't do that. This is for us to have development'. So when they say that, you stop, because it makes you feel guilty, but also it makes you think that, yes, let us trust it is in the name of development. But they [Dott Services Ltd.] didn't come back, so...

Such experience may also partly explain the quick and radical response of the people when surveyors came later, in 2015, introducing themselves as the Arch Design Ltd. technical team. It was reported during discussions that they were indeed evicted the same day by a large, hostile group of people. Such operations conducted by outsiders and coming from central

government probably contributed to exacerbate feelings of land insecurity, to which clans responded by strategies such as collecting cash from leases or communal rice production, in order to support one clan's land claim if the case went to court – a situation we will describe later.

Finally, the design itself sometimes proved to be inappropriate. First, instead of the several cattle watering points in the design, only one was built near the dam, creating conflicts with cattle owners, since most of the water flow was now diverted into the scheme. Second, some channels and roads on the western side were not opened, and most of the channels that were implemented – be they cemented or not – are characterised by significant depth, which does not allow water access unless the water level is high, since cemented infrastructure has limited flexibility to adapt to varying rainfall, especially when the latter remains too low to allow full water release (see pictures below).



*Picture 35 (left): Abandoned cemented canal in the northwest of the scheme in the rainy season (Torretti 2016)*

*Picture 36 (right): Bush in the northeast of the scheme (Torretti 2016)*

In conclusion, the “rehabilitation” introduced unprecedented irrigation infrastructure, following the design envisaged by Ocen Kato, although extending it. The main change is the diversion of the Okura river through a dam in order to bring water thanks to new channels, instead of from the riverbed as before. Nevertheless, the construction work was not completed, while users consider some of the structures that were built to be unfit for irrigation and have therefore rejected them. In the end, after the “rehabilitation”, part of the *joro* that used to be irrigated became deprived of water for irrigation: on the one hand, the new channels are unfit for use and, on the other hand, diverting the stream led to a drastic reduction in the water flow, limiting the possibility of continuing indigenous irrigation (see

previous pictures). Clans from Rudi parish turned out to be the most affected by this loss of access to water for irrigation. Though unfinished, the rehabilitation thus deeply affected indigenous irrigation practiced within the *joro*. With a dam diverting the Okura river, the water flow does not allow as much indigenous irrigation as it used to. The cemented channels became the new main source of water for irrigation, and their design considerably changed the geographical and social distribution of the resource in the *joro*. Indeed, with the new design, while some *joro* land was deprived of water, other land was on the contrary opened up for irrigation, on the eastern side of the scheme in Pobar parish.

### 2.3. Highlighting spatial and social differentiation

Finally, this subsection focuses in more detail on the changes brought about by the scheme, in terms of loss/access to water for irrigation, and their main consequences in terms of spatial and social differentiation. Indeed, such dynamics were also exacerbated by the action of international actors, familiar with the area since the war, and mobilised by the new co-operative society, as we will now see.

While the AVSI foundation organised training on irrigation, the International Rescue Committee (IRC) funded and/or put in place several projects in the sub-county, at the ASHISCS's request. First came a study tour for ASHISCS board members and technical staff to the western Mubuku irrigation scheme in September 2013. Second, a "Pobar Value Addition Unit Management Plan" was established with funds from the SIDA (Swedish International Development Agency) and consisted of rice and groundnut threshers, and other small machineries for post-harvest operations. Although the project was apparently aimed at Pobar communities – including Central, the main village in the sub-county – the co-operative society placed ownership and supervision of the assets under its management. Finally, in December 2013, the IRC funded land levelling in blocks 4 and 5 of the scheme, located on land owned by the aristocratic Podi clan and one of its kin clans. As the budget allocated to this operation was limited, and required the co-operative society to provide the machinery to conduct the levelling, only two blocks were in fact selected. The site therefore comprised land that was not only owned by the most influential clans but also where the micro-topography, more regular than elsewhere in the scheme, had already favoured significant rice production since the 1990s. With a growing level of rice production concentrated in the southeast of the scheme, this area quickly became the site of lucrative rice-growing and the cost of leasing a

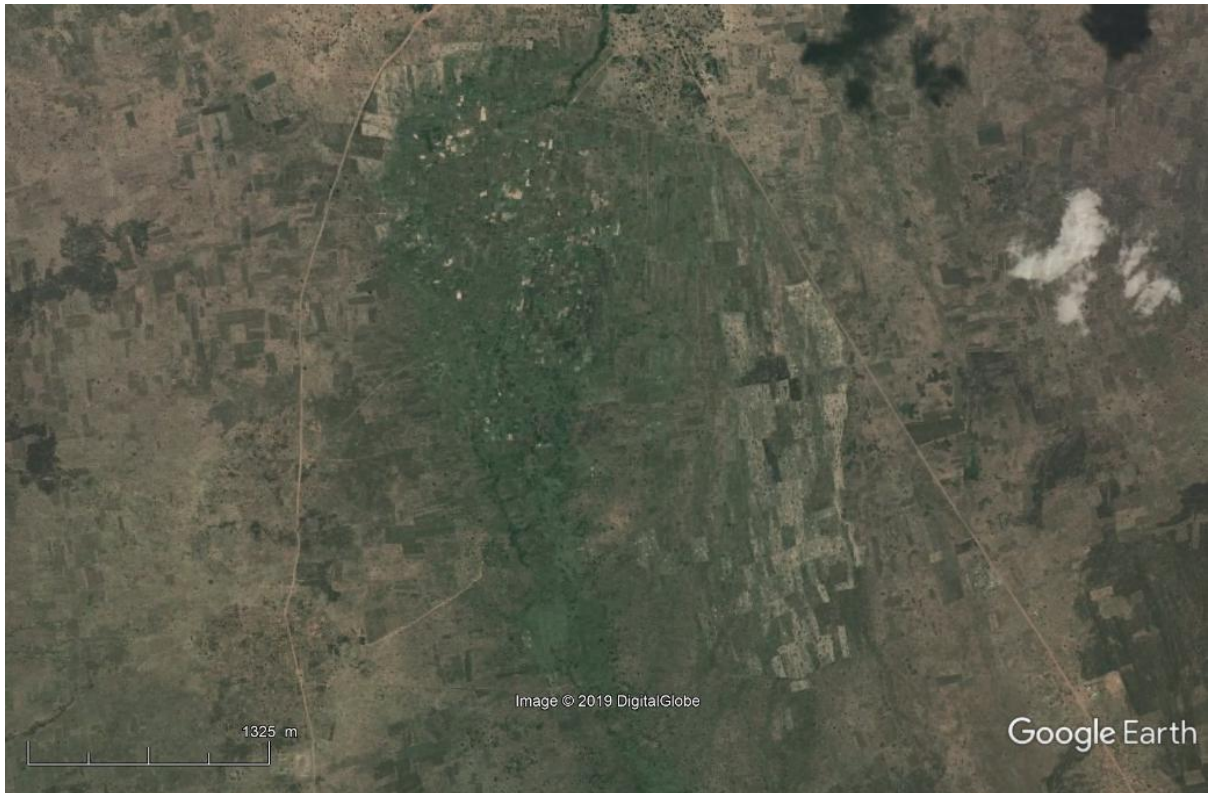
plot became extremely high. As the involvement of those irrigators in rice cultivation increased, their blocks were also selected by the Japanese International Cooperation Agency (JICA), requested in 2014 by the MAAIF to support the scheme following a request from the ASHISCS to fund extra water gates alongside the cemented channels, improving water allocation to those blocks (see pictures below). Meanwhile, alongside the drained Okura stream and more generally on the western side of the scheme, water access became difficult if not impossible. Land previously irrigated is now largely left fallow or used for rain-fed agriculture, becoming hybrid land with characteristics close to *woko* land, but managed as *joro*. Consequently, the most landlocked areas are now cultivated in a similar way to the *woko*, differentiated from this dry land only by the land tenure system which prevailed while under irrigation.



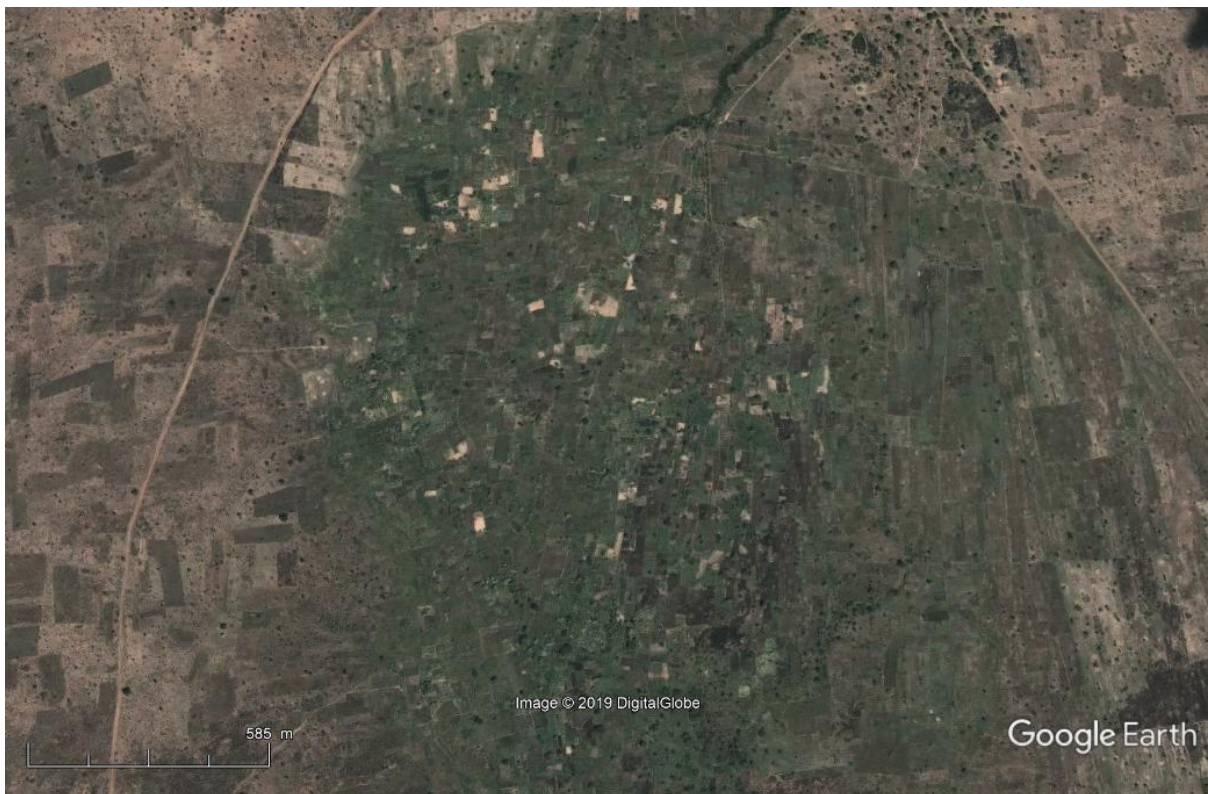
*Picture 37 (left): Rice maturing in the southeast of the scheme early in the dry season (Torretti 2016)*

*Picture 38 (right): Water gate (middle) added by the JICA early in the dry season (Torretti 2016)*

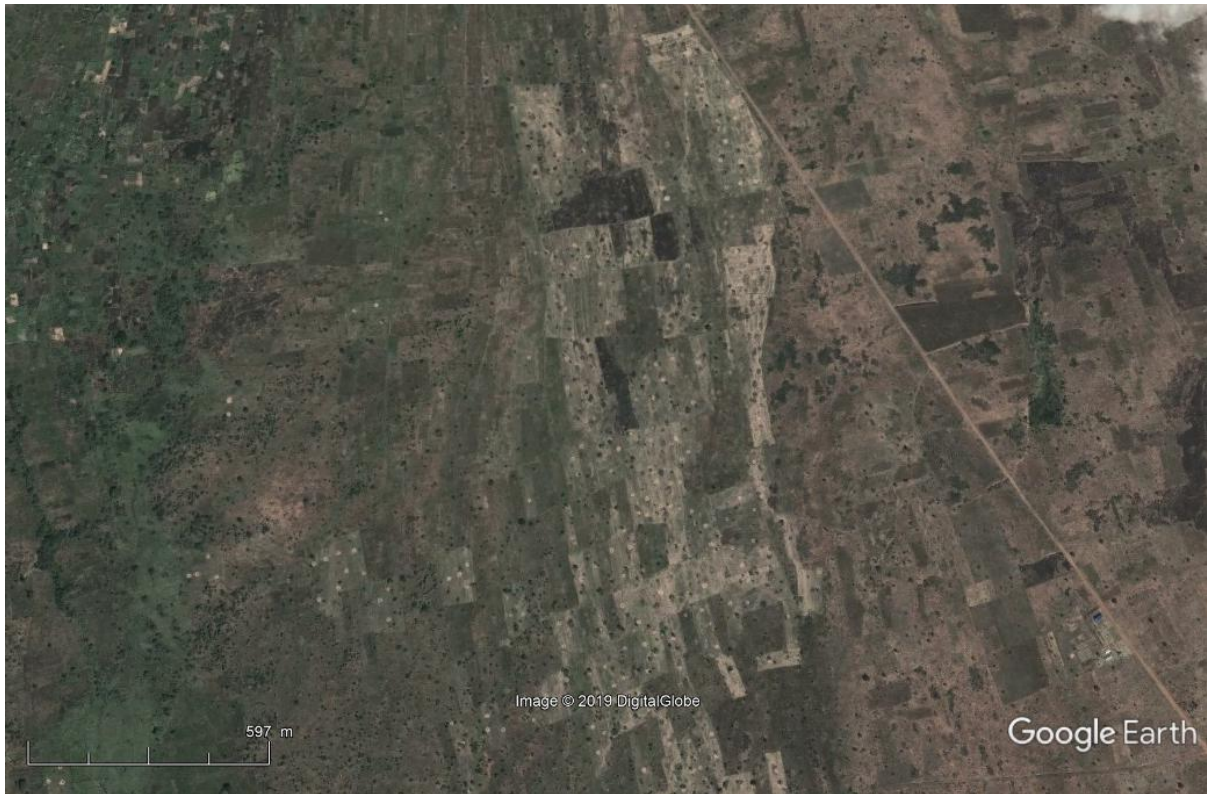
In conclusion, the new irrigation system put in place by the “rehabilitation scheme” mostly benefitted households from Pobar parish, by extending the amount of land under irrigation and improving access to water for irrigation and, therefore, increasing rice production capacity – with irrigation conducted mostly by submersion. Meanwhile, most of the *joro* located in Rudi parish lost its access to water for irrigation and, consequently, most of its added value compared to the *woko* land also resulting, according to some accounts, in the undermining of local food security. Therefore, an unequal distribution of irrigable land emerged among the clans, and consequently social and spatial differentiation followed, driven by the growing of cash crops such as vegetables and, above all, rice, as illustrated by the pictures below:



*Picture 39 (above): Aerial view of the Agoro irrigation scheme (Google Earth 2019)*



*Picture 40 (above): Aerial view of the northwest of the Agoro irrigation scheme dominated by bush and un-coordinated "traditional" crops (Google Earth 2019)*



*Picture 41: Aerial view of the southeast of the Agoro irrigation scheme dominated by coordinated rice growing (Google Earth 2019)*

These major changes have significantly contributed to reinforcing the existing balance of power between the clans of Rudi parish on the one hand and those of Pobar parish on the other, as they contributed to concentrate the main economic wealth in the hands of some of the latter. This situation has apparently led to a tense relationship in the valley, as the economic, social and symbolic domination of the aristocratic Podi *kaka* and some kin lineages has significantly increased. This new water allocation configuration has led to the emergence of new institutions, including the co-operative society as well as new irrigators' groups, whose interests vary from one actor to another, as we will now see.

### 3. RISE OF WATER-BASED LEGAL PLURALISM

Finally, this subsection analyses how the disruption of water distribution, which led to social and spatial differentiation dynamics caused by the construction work of 2012-13, affected the former *joro* management. Indeed, although institutions for governance of *joro* land appeared to be resilient, new actors did emerge from the implementation of the new Agoro irrigation scheme, highlighting the elaboration of a water-based legal pluralism. The first subsection thus focuses on the new co-operative society, whose source of legitimacy and authority relies

on the centrally-imposed nature of the scheme, which became weak in a similar way to the Itek/Okile co-operative society. The second subsection introduces the Water Users Association (WUA), created in an attempt to impose the irrigation practices encouraged by the scheme design. The third and final subsections focus on how locally-based actors and institutions deploy new strategies either to cope with the scheme's design (third subsection), or to access new land considered as suitable for irrigation (fourth subsection).

### 3.1. The Agoro Self-Help Irrigation Scheme Co-operative Society (ASHISCS)

This subsection introduces a new actor in the form of a co-operative society, highlighting the gap between its intended and actual roles, as well as the strategies deployed by its members to serve various interests.

Indeed, as for the Olweny irrigation scheme, a co-operative society was registered to oversee the Agoro irrigation scheme in April 2013. Like its counterpart, its purpose was to organise the scheme's general maintenance, water allocation, crop production and sale and training of farmers. Indeed, the purpose of the irrigation scheme design in Agoro was to organise production in distinct blocks as in the Olweny scheme, but in this case with each of them dedicated to one particular crop, according to a water rota between blocks set up by the co-operative society. This would suppose, as in the Olweny scheme, coordination between blocks as well as alignment of all the cultivators in each block on the same cropping calendar. Several positions were established to conduct these tasks: an executive board, employed water scheme attendants since, unlike in the Olweny swamps, several water gates need manual opening and closing to effect the water rota between production blocks, technical staff including Secretary/Manager, Production and Marketing Officer, Accountant, Extensive Agriculture Officer, Administrator, security agents. Therefore, unlike the Olweny swamps where running of the co-operative relies on unpaid work, the ASHISCS was to some extent established more like a small NGO. In both cases, the centrally-imposed approach of the rehabilitation process significantly contributed to weak decision-making as there is limited capacity for action, with little money to run the organisation, and developing into general distrust as the scheme's design was hardly appreciated, due to the previously-highlighted changes it introduced, as well as to the willingness to eliminate *joro* land demarcation.

This is illustrated for the ASHISCS for example by challenges in setting up the co-operative society, since it was highly dependent on the goodwill of central government, illustrated by few repeated requests to use the scheme facilities, after technical handover in April 2013, or by the Ministry of Water & Environment keeping assets such as the tractor key until December 2013 despite requests from ASHISCS. Eventually the ASHISCS request to have Dott Services Ltd. back on site, despite Lamwo District's support, failed, as illustrated by the following quotes from letters addressed to the Lamwo District Chief Administrative Officer:

in as much as the team appreciated the Government efforts in having the scheme rehabilitated, the general feeling of the job not being well done was very strong. (...) There is a need to have the contractor back on site as soon as possible to correct those identified construction defects. (Anonymous, Lamwo District Engineer, 18/10/2013)

several attempts have been made by the management of the Cooperative society to follow up with the contractor on the unfinished works and others that need to be done again but all have yielded no result. Above all, the contractor mysteriously disappeared from the site (...) The management of the cooperative society now requests the district to come together and advocate for the finishing of all the works left by the contractor within the period that the contractor is still mandated to complete his work before 10<sup>th</sup> of April 2014 when he is supposed to fully leave the site and be paid his retention fee (Chairman of ASHISCS, 22/10/2013)

Nevertheless, on the ground, the co-operative society suffered from the same lack of authority, capacity and legitimacy as the Itek/Okile co-operative society, which led to low local subscription: by mid-2014, about 90 cultivators were fully registered as members. Membership fees therefore represented a minor proportion of the unit's budget and did not allow staff salaries to be paid: by mid-2015 the number of water scheme attendants was seemingly reduced from 9 to 3 executive board members – whose allowances were a big call on the budget at each meeting – from nine to four, and only one security guard remained. Unpaid salaries also led to significant turnover among the technical staff. Therefore, the co-operative society faced two main challenges to build up authority over the scheme: on the one hand, issues due to its design and functioning and, on the other hand, the gap between the productive use of land envisaged by the body and the indigenous *joro* land use which resists it.

Indeed, the operation of the co-operative society reflects the consequences of the extended period spent at war and in displacement, when both the general population and state agents were to a large extent supported by international donors. This influence affected all sectors of the Acholi sub-region, as both NGO workers and state agents learnt the codes and norms



of the humanitarian aid sector. Thus, when Clare Paine (2014) describes the revival of *Ker Kwaro* Acholi, a sub-regional institution that emerged during wartime in an attempt to prevent complete breakdown of the indigenous authorities, similarities with the functioning of the Co-operative appear:

The secretariat of Ker Kwaro Acholi has undoubtedly cast the institution in a more favourable light for donors, who require administrative and technical capacity from the local organisations they partner with. Providing funds for the salaries of project officers who they engage with directly has brought experienced development practitioners to Ker Kwaro Acholi. However, with everyday practices of the secretariat, and by implication many of the *Rwodi* and the Paramount Chief, revolving around donor programmes and their agendas, Ker Kwaro Acholi seems to many people to function more in the likeness of a development NGO, which sparks concerns over the possibilities for Ker Kwaro Acholi to be responsive to the needs of the clans and not be tied to the conditionalities and agendas of international donors. (Paine 2014: 191-192)

The ASHISCS archives demonstrate a similar propensity to act more as an NGO than a Co-operative. In the two years following its registration, reproducing some practices encountered in the development and humanitarian sector, the ASHISCS made many attempts to form partnerships with various entities such as the Acholi Private Development Sector, the Mercy Corps, AVSI, JICA, IRC, SIDA, NACRRI who funded rice trials over 2 hectares for UGX5 million<sup>79</sup> with the partnership likely to be renewed in 2015, FIT Uganda, Technoserves, the Uganda Development Bank from whom a loan of UGX500 million<sup>80</sup> was considered in 2014, the Agoro International Vocational Institute, Gulu University, Kitgum SACCO, the World Food Programme and the International Potato Center, which seemingly paid the Co-operative about UGX10 million<sup>81</sup> to use land for potato trials in 2016. Some attempts therefore succeeded, though most of the time these were apparently to the benefit of the executive board or technical staff, since they were, for example, selected for study tours and training courses and given authority over small donations. Moreover, since membership fees are low, the funds from partnerships enable the executive board members' allowances to be paid – budgeted at UGX13.5 million<sup>82</sup> for the 2015/2016 financial year for example – and technical staff salaries, sometimes paid afterwards. The partnerships are also the subject of a communication strategy since they have a visual component in the form of flyers and posters displayed at the co-operative society buildings (see following pictures). Cultivators selected

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<sup>79</sup> About US\$1,500 at this time.

<sup>80</sup> About US\$192,000 at this time.

<sup>81</sup> About US\$3,000 at this time.

<sup>82</sup> About US\$4,000 at this time.

for training or study tours are sometimes called “progressive farmers”, meaning people supporting the body and receiving symbolic capital back through access to training or tours outside the sub-county.



*Picture 42 (left): Meeting room at the ASHISCS (Torretti 2016)*

*Picture 43 (right): Papaya growing in the ASHISCS compound (Torretti 2016)*

Since the co-operative society was quickly faced with significant financial problems because it does not function as theoretically designed and therefore cannot raise the expected operating budget, other means have been used to collect funds: introducing fish into the storage basin, planting papaw trees in the co-operative society compound, renting out the excavator, mainly to the Lamwo District and organising tours of the scheme, mostly for school pupils and students. In conclusion, the technical staff’s main activities are networking, fundraising and bureaucracy – reflected by an annual work or business plan that is seemingly disconnected from the socio-economic realities on the ground.

These technicians, recruited by the executive board members, are educated people mostly not native to the sub-county, since a formal recruitment process is used. According to some of them, commitment and motivation to carry out their assignments quickly decreased since, on the one hand, they encounter un-cooperative cultivators on the ground who are unwilling to comply with the “agribusiness”-oriented land-use planning designed to accompany the irrigation scheme and illustrated in an archived speech of the ASHISCS Chairman:

The mindset of the community towards commercial use of the land within the scheme has still remained a big issue to be addressed. People still want to practice the traditional subsistence farming which is no longer recommended in an irrigation scheme. (ASHISCS Chairman, September 2015)

Probably due to their educational background, most of them share the ASHISCS Chairman's opinion, seeing indigenous practices as backward and putting a drag on scheme development. They thus appear to be disconnected from local realities not only by being outsiders, not sharing the same relationship to the land as the irrigators in *joro* land, but also by their educational background. On the other hand, salaries are usually paid neither on time nor in full. Given their position as outsiders and their educational background, they are hardly interested in voluntary work, and they often use their position as a temporary one to help them get another post, usually in the development sector<sup>83</sup>.

In conclusion, as the Agoro irrigation scheme was being "rehabilitated", a co-operative society was registered to oversee the scheme as in Olweny. Nevertheless, this institutional arrangement hardly produced different results. Suffering from lack of authority and legitimacy, as it was externally-imposed and run more as an NGO either by the local elite or by educated workers perceived as outsiders; staff members also appeared to have significant personal interests. As the ASHISCS also promotes the scheme's technocratic vision of irrigation, which disrupted access to water and deepened economic, social and symbolic inequalities in the valley, this body hardly benefits from local support. Finally, the minority that partially supports the ASHISCS is found among the people who benefitted most from the 2012-13 construction work: the rice growers from the Pobar parish clans. In an attempt to reinforce its authority, the ASHISCS and their few rice growing supporters decided to establish a Water Users Association (WUA), based on a model they saw during another study tour of the Mubuku scheme in July 2015. The WUA was meant to take care of the water management component, as seen in the Mubuku scheme, but would remain under the co-operative society's authority, which would therefore act as an umbrella. As we will now see, this represented an opportunity for the rice-growing minority to access formal positions of authority.

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<sup>83</sup> For instance, the former Marketing and Production Officer worked for a year before being hired by the International Potato Center, the former Assistant Accountant worked for less than a year before being hired by Kitgum SACCO, the two former Secretary/Managers also stayed for about a year each before leaving to work for the World Food Programme and another NGO based in Gulu. Finally, the Extensive Agriculture Officer stayed for about six months before being hired by a Ugandan NGO in the Teso sub-region.

### 3.2. The Water Users Association (WUA)

This subsection analyses the power balances between the different categories of scheme users in order to understand how creating the WUA was used opportunistically by some to access positions of authority, thus reinforcing their own access to water. Officially established in 2015, the WUA was put in charge of organising scheme maintenance and water allocation within the different blocks. Based on voluntary work and with elected, native leaders, its organisation mimics the indigenous irrigation system to a certain extent. Individual labour must indeed be provided to the group in order to benefit from access to water. Failure to respect the established rules leads to fines, collected by the group in cash to be reinvested in for example sandbags for *page* construction. In addition, the WUA innovates by imposing one day's work per on all its members, used for maintaining roads, buildings and *page*. WUA membership quickly grew to about 60. This success can be explained on the one hand by the legitimacy of being locally-based, contrary to the ASHISCS whose technical staff are outsiders. On the other hand, kinship links the great majority of WUA members, including their leaders, since they come from Pobar parish. Therefore the Chairman of the WUA is the *ladit kaka* of the aristocratic Podi clan and a brother to the current sub-county *rwot moo* – one of the richest people in the area, who works for USAID and lives in Kampala. His father was also *rwot moo* and was strongly supportive of the new irrigation design in the 1970s and 1990s. One of the Chairman's sons is also a water scheme attendant, therefore holding a significant position as being in charge of opening gates and allocating water. His nephew is Vice-Chairman of the ASHISCS.

Consequently a strong new organisation appeared, reflecting locally-based social structures, supposedly under the umbrella of the co-operative society but mostly representing the interests of rice growers, the majority of whom are from Pobar parish. The WUA's authority and legitimacy comes from its members and leadership, tied by kinship and organised similarly to the indigenous irrigators' groups. Driven by their interest in rice growing, carried out on their own land, the group thus runs the scheme for the benefit of its members, most of them located alongside the Okura stream and in the south-eastern part of the scheme. Water distribution through the scheme channel network reflects such aims, since the water rota favours the production blocks in those areas, to the detriment of most of the western side, which is hardly contested by the ASHISCS staff since they lack authority, capacity and willingness.

Moreover, in order to increase the water volume flowing toward those rice producing areas, in 2016 the WUA started including indigenous *page* in the scheme. The low level of water left in the Okura stream is furthermore affected by the WUA, whose *page* diverts a significant volume to feed the central and eastern side of the scheme, as shown by the pictures below:



*Picture 44 (left): WUA's page diverting the Okura stream through a hand-dug canal (background) in the rainy season (Torretti 2016)*

*Picture 45 (middle): Water diverted by the WUA's page flowing toward the scheme's main water distribution system in the rainy season (Torretti 2016)*

*Picture 46 (right): Water from WUA's page feeding the scheme's main water distribution system in the rainy season (Torretti 2016)*

As the WUA demonstrates significant ability in gathering irrigators and collectively running that part of the scheme in which they have an interest, this new institution has deepened the imbalance of water distribution among the *joro* by reinforcing the new geographical water allocation implemented in the design. Therefore the association faces the challenges of persuading users who do not benefit from the rehabilitation design to become members while its actions have become unpopular among them (informal discussions 2016):

They [the WUA] force Rudi people to work, but for us we can't do anything with the water!

Some plots cannot be reached by water. So there is no benefit to work with the water association.

They [the WUA] want to divide people and be like a clan.

[The WUA members] are aggressive people, strong water users. They think the priority should go to them because they grow rice, and they think because of the scheme they have the government with them.

Indeed the feeling of legitimacy encountered among the ASHISCS technical staff and WUA members also feeds the belief that the co-operative society and the WUA are “within their

rights” regarding water allocation due to their legal and formal basis. Nevertheless, the implementation of the scheme is perceived in a very different way between WUA members and the other *joro* users. On the one hand, most cultivators do not think highly of the new scheme design (interviews 2016):

The most important thing they [the government] should do is to come and sit with the communities. It is painful for us that they come and do things without consultation. We have knowledge about this land and this river too. We should discuss together and they should not come to do whatever infrastructures they want.

People they don't want to adopt this modern scheme because they don't like it. And also, because they fear the government, they don't understand why they are spending billions on it, I mean, what does the government gain by doing it? That is the question they are wondering but they fear the answer. They don't believe it is just for them to develop.

While the scheme design is rejected by the majority of *joro* users, the co-operative society and even more the WUA are also building their legitimacy by using state law to reinforce their authority (interview 2016):

this scheme, it is a government project, so we have the law with us, water should come to us.

However, in this case, using the legal state framework might be a double-edged sword. Indeed, as reminded by technical staff from the Ministry of Water and Environment visiting the scheme (interview 2016), the indigenous use of *page* – including the one under WUA control – is illegal:

It is illegal to divert water from a main source. So this thing the Water User Association did, they have to remove it, quickly. If all those people, including also those from upstream in the hills, if they keep on taking water from the streams, then they would be taken to court.

Such a statement concerns not only *joro* users practicing indigenous irrigation, be they from the plain or the hills, but also the WUA itself, which did not follow the MWE technical staff injunction. Consequently, attempts by the WUA to gain authority by referring to the formal state framework might lead to conflicting results in the future, particularly in a context where indigenous practices are reappearing within the scheme<sup>84</sup>.

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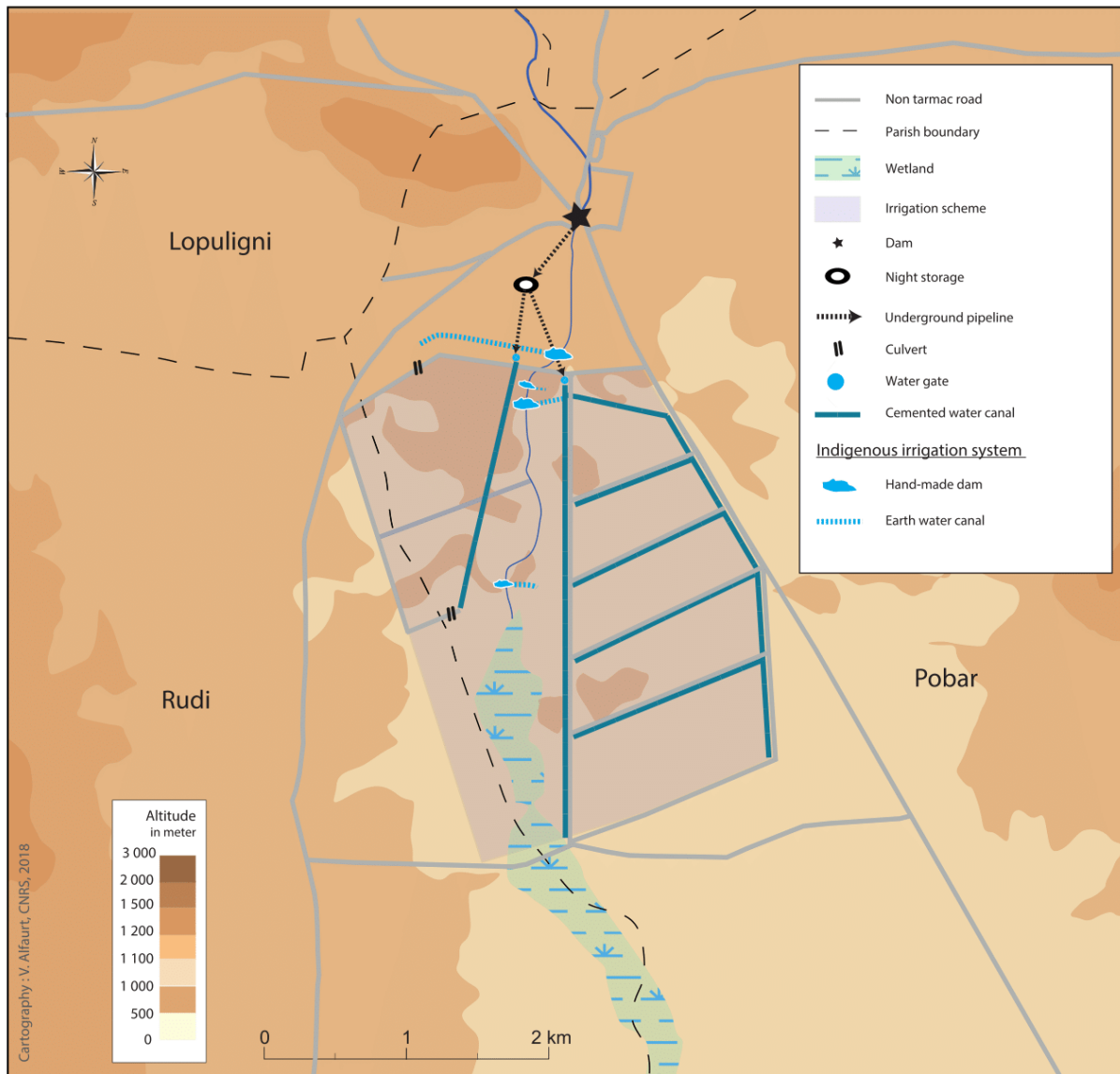
<sup>84</sup> Indeed, according to the National Environment Statute (Republic of Uganda 1995c: 28), “no person shall, in relation to a river or lake, carry out any of the following activities- (a) use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; (b) excavate, drill, tunnel, or disturb the bed otherwise; (c) introduce any plant or part of the plant whether alien or indigenous in a lake or river; (...) (f) divert or block any river from its normal course; (g) drain any lake or river”.

In conclusion, the WUA was established by the ASHISCS in 2015, with the support of a minority of rice growers under the leadership of the head of the aristocratic Podi *kaka*, whose family is connected to the ASHISCS and Pobar *rwotdom* leadership. In this light, the WUA appears to be more like a formal institution, set up to defend the interests of rice growers in terms of water allocation, with particular attention being paid to that part of the scheme mainly owned by the Podi *kaka* and their kin clans. The WUA thus finds a significant level of legitimacy not only because it reflects the existing structure of domination, but also by integrating itself into a formal, legally-based entity, characteristic of indigenous irrigation groups. It thus appears that the WUA is contributing to social and spatial differentiation mechanisms, by successfully reinforcing the new, unequal water distribution within the scheme to the benefit of most of its members.

### 3.3. Adapting the scheme to indigenous irrigation

In response to the new water distribution system in the scheme, coping mechanisms have however emerged among cultivators for whom access to the river's water has suddenly become difficult or simply impossible. Consequently, many no longer irrigate – such land reverting to bush – or cultivate in a manner similar to that used on *woko* land. Nevertheless, this subsection explores strategies to maintain irrigated crops that were found during fieldwork.

Mainly carried out by cultivators on the western side, mostly located alongside the Okura stream, they focus either on gathering together individuals to form new irrigators' groups around *page*, and/or on adapting indigenous practices to the new geographical water distribution across the *joro*. We now describe the four *page* that were found during fieldwork in the rainy season of 2016, whose location is shown on the map below:



Map 20: Location of identified indigenous irrigation systems near and within the Agoro irrigation scheme (Alfaut 2018)

The most northerly example brings together 13 households from the Paawo clan, a *kaka* from Pobar parish. Located outside the scheme though still on *joro* land, the *page* was established in March, when rainfall was considered to be low, and diverts the Okura water west of the stream (see following pictures). Where the water flows, a few rice fields are found, the cereal being recently grown as knowledge of its cultivation and its attractiveness spread across the *joro*. The Paawo *page*, re-used for the second time in two years, is organised in a very similar way to the one found upstream in Lopuligni and Ngacino parishes. The surplus water flows through the scheme at the limit of the western side, where a single culvert installed by Dott Services Ltd. allows some control over the resource. Thus in this area crops such as rice, vegetables or even sugar cane are found at a micro-scale, as a result of the association of an



outside *page* with few newly implemented infrastructure elements – the latter being used in an unexpected way.



*Picture 47 (left): Paawo's main page early in the dry season (Torretti 2016)*

*Picture 48 (right): Paawo's minor page early in the dry season (Torretti 2016)*

Slightly downstream is another *page* within the scheme that was built for the first time, a hundred meters upstream of the one installed by the WUA. This minor one is, however negligible, being the result of one single individual's work, and consequently lacking the labour to make the structure efficient enough to divert water to irrigate ten acres. Then, downstream of the WUA's *page*, which was built for the first time since the rehabilitation – although its location is the same as the one initiated in the 1970s – the stream is considerably reduced. Indeed the WUA's *page* diverts a significant volume of what is left of the Okura stream to feed the cemented channels bringing water to the central and eastern part of the scheme.

Two other *page* were found to be under construction at the end of the rainy season, a few weeks after the WUA constructed theirs. They both aim to irrigate fields during the dry season, mainly to grow maize and vegetables, in a similar way to which indigenous irrigation was, and still is, conducted – and unlike the rice growers who cultivate during the rainy season and, therefore, have their greatest need for water at that time (see following pictures). Organised in a similar manner to the one found upstream, the hand-dug channels are meant to irrigate about 20 plots in one case and 50 in the second. For the biggest, called *Posa* – after its location – the indigenous system was being re-used for the second year, while the smaller *page* – called *Tiipilwak* (“work for your people”) – brought together a certain group of people for the first time. The reasons for going back to indigenous irrigation practices are similar for the two groups (interviews 2016):

The modern canals don't go through this area. So it is our local arrangement to have water.

Before the rehabilitation the level of the stream was higher, and also now the weather has changed, there is low rain. Before the soil was full of moisture. Now we need those *page* more than before, so we organise ourselves. People have divided in smaller groups.

Some members of both groups are part of the WUA; some are not. This is mostly related to each individual's situation, since those who are also part of the WUA and own plots within the scheme consider that they benefit from fair access to water from the new water distribution system. On the contrary, non-WUA members rely on the *page* group in order to open unprecedented water channels and, thus access water for irrigation on their own initiative through collective action. All the irrigators interviewed indeed spoke of more difficult access to water for irrigation in general, motivating and linking people into new groups among whom kinship is not central to their cohesion. More particularly in the *Tiipilwak page*, the fact that the need to access water for irrigation was a driving factor in bringing people together – rather than pre-existing social links – is clearly illustrated by several members who do not own the plots they plan to irrigate but instead lease them. Such a practice tends to bring together for a limited period of time – usually one season – people who did not necessarily know each other before. Some even aim to lease neighbouring plots in order to raise collective labour more easily. The success of such new groups in efficiently fulfilling their initial purpose highlights the pressure applied by the need for water for irrigation, and also the necessity for collective action to access it.



*Picture 49 (left): Construction of the Tiipilwak page early in the dry season (Torretti 2016)*

*Picture 50 (right): Irrigated cabbages on a Posa page member's plot early in the dry season (Torretti 2016)*

Finally, no upstream-downstream water conflict was reported during fieldwork linked to the emergence of new *page* since 2015. As mentioned, in the Lopuligni and Ngacino parishes coordination between *page* is described as being sufficiently easy and efficient to share the volume of water in the Okura stream, although every *page* unit has its own organisation and is independently operated.

In conclusion, since the implementation of the scheme disrupted water distribution in the former *joro*, strategies appeared not only among rice growers to reinforce their water access through the scheme infrastructure, but also among cultivators who had been deprived – albeit to varying degrees – of access to water. For the latter, coping with the scheme marked the renewal of indigenous practices with *page*-centred self-rule, although this time including new characteristics illustrating changes, such as leasing, which can lead to the formation of groups whose logic is based on commodification rather than of kinship.

### 3.4. Disputing new land for irrigation

While the previous subsection focused on actors who deployed strategies to adapt indigenous irrigation to the scheme's configuration, this subsection focuses on groups of people who deployed coping mechanisms outside the scheme. Indeed, rather than developing new ways to access water on *joro* land, an unprecedented land dispute case encountered during fieldwork illustrates a strategy to obtain easy access to water by accessing new land for irrigation.

This case opposes two groups of people: one from Rudi parish and the other from Pobar parish. As a large part of the *joro* – especially that located in Rudi parish – became deprived of water for irrigation, the Rudi group aimed to access land which can be irrigated to grow rice with the idea of compensating their loss of access to water in the scheme. On the other side, particularly in Pobar parish, a significant number of people have been historically excluded from *joro* land, since they were welcomed as guests to the Pobar *rwotdom*. Consequently, for the Pobar group, accessing new land represented an unprecedented, new opportunity to finally benefit from irrigation, and particularly from the significant economic potential of rice growing. In the context of strong indigenous institutions that were resilient to the war, preserving the *joro* management within the irrigation scheme, the opportunity did not arise to access land within the scheme by self-appropriation as it did for example in the north of

the Itek swamp in the Olweny irrigation scheme. Consequently, the Rudi and Pobar groups – each apparently consisting of one particular lineage – rather focused on looking for new land and appropriating it as new *joro*.

Given the configuration of the river system, the only space considered irrigable, and on which land ownership is vague enough to be claimed by both groups, is located downstream of the irrigation scheme. Indeed, as the locally-accepted historical land demarcation between Rudi and Pobar parishes is the Okura river, the whole swampy area itself located downstream had thus far been considered as a border between land belonging to different lineages. It thus represents unclaimed land, since no cultivation had ever been attempted before. Therefore, the dispute over this wetland led to the most significant conflict ever in the sub-county.



*Pictures 51 & 52: Rice maturing in the swampy area downstream of the Agoro irrigation scheme early in the dry season (Torretti 2016)*



*Picture 53: Aerial view of rice growing in the swampy area downstream of the Agoro irrigation scheme (Google Earth 2019)*

Since it is located far from villages or the road network, accessing the wetland is rather difficult, and sometimes perceived as unsafe. Most of the collective working groups apparently refuse to walk up there. Consequently, anyone who wishes to cultivate there has to rely mostly on family labour. Ox-ploughing is not feasible, and the few growers complain about tsetse flies, snakes and the fear of malaria. Cultivation is consequently not only physically and economically difficult but also risky, given the possibility of flooding. However, two clans appeared, disputing the area: the Otere guest clan, established in Yuwaya village, Pobar parish, and the Pakini clan from Rudi parish. The wetland concerned covers an area of about 300 acres (see previous pictures). Of this area, about 100 acres is undisputed, being cultivated by a single member of the urban elite from Kitgum town, kin to a clan from Pobar parish. Tensions were clearly illustrated during fieldwork when it proved difficult to visit the disputed area.

The land dispute had apparently been on-going for about four years by the time that fieldwork was carried out, the case by then having been taken to the High Court in Gulu, as the two clans struggled to establish legally recognised customary rights over this land. This case has had a significant impact on the valley. First, it was significant enough for the previous LC3 Chairperson, responsible for the sub-country level, to be forced to quit his position, his

successor choosing not to become involved and contributing to the case being taken to court. On the other hand, the case also highlighted the limits of the legal system in settling land disputes, as well as the major importance of land – and fears of land grabbing. It thus seems that the habit adopted by a few clans of putting money aside to help secure land was inspired by this case. Going to the highest courts over land matters is indeed very costly and subject to corruption, therefore highlighting the importance of bargaining power – as seemingly well understood by the clans of the Agoro sub-county – as described by Rose Nakayi for *mailo* land, a tenure system specific to the southern Buganda kingdom:

The institution one can access for justice is determined by a number of factors, including one's ability to afford the expenses that come with it. (...) the tenants are financially constrained and most can only access local council courts, whereas the landlords undermine these courts and therefore bypass them for better options such as magistrates' courts and the High Courts, which offer enforceable decisions. The poor are conscripted for lesser quality of outcomes from these institutions, which are, at times, influenced by corruption. (Nakayi 2018: 278)

Moreover, it is worth noting that the current administrative boundaries of the Agoro sub-county do not reflect the historical situation as they include within Pobar parish not only the upstream water infrastructure – dam and basin storage, built on land historically belonging to communities from the Lopuligni parish – but also the irrigation scheme as a whole. It seems likely that the major land dispute also led to such a strategy by prominent and influential member(s) of clan(s) from Pobar parish, who therefore probably used their bargaining power to legally secure land rights to the benefit of Pobar parish clans. Indeed, in an area where land falls under customary land tenure and where administrative territories reflect historical ones, this new demarcation would likely support any claim to the irrigation scheme made by clans from Pobar parish.

In conclusion, since *joro* management survived the scheme's implementation, at least with regard to land management, the land resource did not become subject to a trend of self-appropriation, as it did in the Olweny scheme for example. This led to coping mechanisms developing among the cultivators whose access to water was affected: they developed strategies focusing on the re-appropriation of access to water through indigenous irrigation practices, alongside new irrigators accessing *joro* plots by leasing. Nevertheless, for a wide majority of cultivators who have lost access to water, as well as for people historically excluded from *joro* – and therefore from the opportunity to irrigate – the attractiveness of irrigation and rice growing provided the background to an unprecedented case of land

dispute. This emerged out of unclear land ownership, which for the first time became crucial in the context of these contemporary dynamics. In the end, dynamics of self-appropriation are found on areas where management systems hardly exist, thanks to the absence of elaborate systems such as *joro*, although these dynamics occur in a slightly different way to that in the Olweny scheme. Indeed, while in the Olweny scheme such appropriations were carried out by influential individuals, in the Agoro sub-county disputing land is a collective action led by clans – with the notable exception of the area appropriated by a single member of the urban elite from Kitgum. Finally, as most of the identified dynamics and strategies that emerged from scheme implementation focused on how to access water for irrigation in the context of an increasing number of actors but a resilient indigenous land management system, the legal pluralism that emerged can be qualified as water-based.

## CONCLUSIONS

In this chapter we introduced our second case study, the Agoro irrigation scheme, located north of Acholi sub-region. As irrigation has existed within the Agoro sub-county since the precolonial period, assessing the impacts and changes caused by the scheme required a chronological approach describing the successive attempts to transform indigenous irrigation practices. We have thus analysed the changes that took place as the result of disruption of water distribution, in the context of significantly resilient indigenous institutions, particularly with regard to land management.

In the first section we highlighted how indigenous practices merely changed as the first attempt was made to introduce an irrigation design based on the Chinese model seen in southern Uganda at the time. Such resilience has to be considered through the prism of the long-term dynamics identified in Chapter 1, which highlighted the fact that the impacts on the Acholi sub-region were less significant than in Lango. Consequently, by the time Ocen Kato attempted to transform indigenous irrigation practices in the Agoro sub-county, the Acholi sub-region was significantly bypassed by the logic of commodification: few cash crops were grown, integration with market and road infrastructure was much less significant. Consequently, indigenous institutions did not go through similar erosion dynamics, and remained resilient to Ocen Kato's action, with the exception of adopting vegetable growing since this was not considered to be disruptive. Nevertheless Ocen Kato's second attempt succeeded in introducing rice growing. Indeed, this came at a time of displacement, during

which the rice crop proved to be as suitable to camp life as it was lucrative. Nevertheless, the recovery of indigenous institutions observed during fieldwork demonstrated their considerable resilience. Indeed, at the time of fieldwork, indigenous irrigation appeared to be widespread, with self-organised institutions close to Elinor Ostrom's model of sustainable resource management for irrigation.

The second section then introduced the Agoro scheme's implementation, qualified as "rehabilitation" by the government, on former *joro* land. The disruptive nature of implementing technocratic design over a territory, whose pre-existing structure was not only present, but deeply rooted and of major importance, was then highlighted. Coupled with the simultaneous introduction of rice, a lucrative cash crop that best suits the local climate thanks to irrigation, social and spatial differentiation appeared in the former *joro* area. Indeed, as wartime eventually ended the valley's isolation and contributed considerably to opening it up, including to markets, the importance of rice became capital, to the extent that the economic differentiation between rice growers and others could be compared to the economic boom of the first cotton growers in the Lango sub-region. Moreover, such differentiation was furthered by the convergence between the scheme's implementation and the micro-topography, favouring specific areas of the former *joro* for rice growing also owned by the aristocratic Podi *kaka* and a related clan. As former *joro* owned by dominated clans, mostly from Rudi parish, became at the same time deprived of access to water, the main impact of the scheme's implementation is found in the deepening of the economic, social and symbolic domination pattern in the valley.

The third subsection thus analysed strategies employed by actors, made more numerous by the scheme's implementation in reaction to the disrupted access to water. As indigenous land management institutions efficiently recovered from wartime and displacement, guaranteeing customary rights held by clans and households, land resources in the scheme did not become the focus of land grabbing or disputes. Instead, mechanisms appeared to focus on coping with the new access to water. With the new co-operative society failing to have its authority and legitimacy recognised – its NGO-like functioning probably undermined by the personal interests of its staff – a Water Users Association was created. Having close connections both to co-operative society members and to the leaders of the aristocratic Podi *kaka*, the WUA has added to the disruption of water distribution by carrying out the maintenance and operation aspects of the scheme relating to the allocation of water to rice growers.



Meanwhile, strategies are also being deployed by people deprived of irrigation, focusing on reproducing indigenous practices adapted to the new scheme management. Reflecting the opening up to a logic of commodification with the widespread adoption of rice as a cash crop, this is characterised by new trends such as leasing of land or forming irrigation groups based on a temporary lease instead of on kinship. All of these coping dynamics are thus centred on access to water, involving a diversity of actors whose legitimacy is also variously grounded. In the end, these dynamics have led to the development of a new project territory, marked by high social and spatial differentiation in which various irrigation practices co-exist, as does, therefore, a water-based legal pluralism specific to this area. As illustrated by the significant land dispute case downstream, the scheme's implementation thus represents the first step in a new path towards disputes over resources, besides the significant introduction of commodification logic in agrarian practices that was introduced with rice growing.

# **Part II: Making Public Action for Irrigation**

Part II answers the questions raised by the bottom-up analysis of irrigation schemes, by exploring the contemporary dynamics of public action for irrigation. We question why irrigation schemes were at the core of the rehabilitation process, which also reinforced a previous technocratic approach, which had led to a gap between stated objectives and actual impacts. Moreover, the absence of any evaluation of the changes introduced by the rehabilitated schemes also raises questions related to the motives of the top-level actors who are behind the recent boom in irrigation schemes in Uganda: who does what, why and how?

We hope that exploring the high-level aspects of irrigation schemes will allow us to deconstruct the dominant discourses, narratives and tools relating to public action for irrigation. We thus aim to analyse the logics and strategies of the actors involved in this process, as well as the dynamics of the power balances existing between them. Chapter 4 therefore analyses the context in which the Chinese cooperation teams introduced irrigation schemes, and the influence of their legacy in the midst of multiple changes. Chapter 5 then focuses on how reviving public action for irrigation under Museveni's leadership, first contributed to the (re)construction of the Ugandan state and, secondly, in Chapter 6, to the political survival of Museveni and the NRM regime. Indeed, in Uganda, recent public involvement in irrigation does not result from a coordinated plan, but is rather the product of various experiences, during which public action materialised before a public policy. This had an impact on how actors could use public action to promote their own interests, as we will see, due to the absence of clearly defined legal frameworks related to irrigation.

# Chapter 4: Trends in rice growing and irrigation in changing contexts

This chapter explores the dynamics at the intersection of several levels of analysis and of various research interests, in order to deconstruct trends in Uganda relating to rice and irrigation. More particularly, it focuses on the stages in the introduction of rice irrigation schemes that have followed independence in the global context of changing ideas and practices, and national crisis. The first section thus explores the influence of the Asian “Green Revolution” in Uganda, since rice production and irrigation practices were insignificant before that. The second section then shows how the irrigation schemes introduced thanks to Chinese cooperation collapsed as a consequence of the prolonged national political and economic crisis. The third section shows how the northern sub-regions contributed to the rice boom which eventually occurred in the context of displacement and wartime.

To facilitate understanding of these multiscale dynamics, a chronological approach has been adopted, using Jackson Amai and Ocen Kato’s life experiences as starting points, since they proved to be key individuals during fieldwork. Indeed, this not only provides better understanding of their thinking at the time of their involvement in the Olweny and Agoro schemes, but also shows how development politics shaped the courses of their lives. In order to conserve the value of such life stories, this chapter explores trends in rice growing and irrigation in a changing context until the end of the war against the LRA in Uganda in 2006. This therefore includes events that occurred under Museveni’s leadership, a period which is focused upon in depth in Chapters 5 and 6.

## 1. RICE IN THE ASIAN “GREEN REVOLUTION”

This section focuses on Chinese activity and influence in Uganda relating to the introduction of rice and irrigation. Indeed, although rice was already present in the country, brought through trading routes linking the Indian sub-continent to the East African coast, by the time of independence production was low and concentrated around the Kyoga lake basin. Nevertheless in the 1960s, rice quickly found itself at the heart of Ugandan as global development politics, which will be the focus of the first subsection. This decade was characterised by the rise of “Third-worldism”, and by the concept of “development”. The “Green Revolution”, a political tool promoted as a technological package to industrialise

production methods, became a paradigm of the growing development sector (Pestre 2014a, Edgerton 2015). This package includes the industrialised and land-use planning-oriented promotion of irrigation, as will be shown. Widespread in the 1960s and 1970s, this water-based technology was expected to contribute to feeding the growing world population at a time when a significant proportion of it was facing severe, repeated droughts. In China, where relationships between civilisation and rice growing were at the core of numerous studies (Gourou 1984, Monin 2017), this approach had already been adopted for several decades, closely linked to rice production. The second subsection shows how such an approach materialised in Uganda during Jackson Amai and Ocen Kato's early days, at the same time reflecting broader trends. Finally, the third subsection explores in more detail than Chapter 3 Ocen Kato's first attempt. to reproduce the Chinese model in Agoro sub-county.

### 1.1. The advent of "development" through the technocratic transformation of Chinese irrigated rice growing

This subsection first focuses on the advent of technoscience, as a new facet of "development". It then explores the form that this dynamic took in spreading a "Green Revolution" in Uganda through Chinese cooperation, which was at the origin of the first Ugandan irrigation schemes.

International aid and cooperation began on the eve of World War II, through the League of Nations. China, which was a member state, became one of the first countries to request capital and technology transfers, mostly regarding land use and infrastructure-heavy development, such as productive water management. This therefore marked the first step towards the Asian rice boom. Indeed, the rice boom grew quickly in Asia, from as early as 1943 when the USA initiated an agricultural research programme for technology transfer, first in Mexico and then in Asia. "Modernisation" spread, combining scientific and technical knowledge production and leading to profound transformations in both agriculture and industry. This research programme, whose results were later called the "Green Revolution", marked the dependency of the Global South on Global Northern industries (Cornilleau & Joly 2014, Edgerton 2015). Indeed, European economies were ruined during World War II. Under American leadership, the concept of "development" quickly became a political tool to ensure American dominance, placing "development" as a desired outcome to achieve universal happiness. During his inaugural speech in January 1949, American President Truman, irrevocably integrated the

universality of technological and knowledge production with the new “development” concept in the following words:

We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half of the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas. For the first time in history, humanity possesses the knowledge and skill to relieve suffering of these people. The United States is pre-eminent among nations in the development of industrial and scientific techniques. The material resources which we can afford to use for assistance of other peoples are limited. But our imponderable resources in technical knowledge are constantly growing and are inexhaustible. (Truman 1949)

This worldview illustrates distinct beliefs. On the one hand, it highlights the new world of scientific governance through technoscience. On the other hand, promoting worldwide governance also established a universal model, created by the USA, that other countries – said to be “underdeveloped” at the time by comparison with the American model – had to apply in order to “develop”. Finally, although it allows for limited material resources, such limits in this newly-emerging paradigm were overcome by faith in the scientific promise of providing technical solutions (Rist 2013, Pestre 2014a, Bonneuil & Pestre 2015). Therefore, increasing economic growth, Gross Domestic Product (GDP) and reliance on external aid – all thought of in technocratic and quantitative terms – were introduced not only as the only means possible but as a major obligation as well (Rist 2013, Chaléard & Sanjuan 2017). This world view results in extractivist governance of natural resources. Nature is perceived as a resource requiring rational exploitation (Mahrane & Bonneuil 2014, Bonneuil & Pestre 2015). Land use planning takes on a quantitative and distributive dimension (Fernandez 2014), particularly with the advent of cost-benefit analysis to manage the required significant investments, which would deeply disrupt landscapes (Boudia 2014). Finally, the production of scientific and technical knowledge in agriculture and industry become pillars of the expanding “modernisation” (Pestre 2014b, Bonneuil & Pestre 2015).

These trends were strengthened during the 1950s and saw countries – known at this time as “Third World” – become an ideological battlefield in the Cold War between the USA and the USSR (Union of Soviet Socialist Republics). On the one hand, “development” took the form of economic and technical cooperation, focused upon production and accumulation processes and supported by private investment and international aid. Indeed, the latter was by then becoming the new key tool of international relations, seen as a means to counter the socialism

that was spreading across the world while supporting market expansion (Rist 2013, Chaléard & Sanjuan 2017). On the other hand, mirroring the rising concept of “development”, the Cold War was characterised above all by its techno-scientific approach that gave priority to controlling the environment and its resources<sup>85</sup>. This forms the background to the spread of the “Green Revolution”. Like ideas about “modernity”, it presupposes the universal nature of scientific methods, going beyond the diversity of societies and cultures across the world (Hackett *et al.* 2008, Cornilleau & Joly 2014).

For the Asian rice-producing societies, having land on plains and in deltas, coupled with appropriate weather, had allowed knowledge of irrigation and irrigated rice to develop over a long period, as well as providing support for high population density and expanding settlements in the deltas (Gourou 1982, Monin 2017)<sup>86</sup>. Such know-how was particularly well adapted to the adoption of the growing technological package then being promoted, including intensive land-use development and planning for water control, agrochemicals, improved and/or hybrid seeds, new crop management techniques focused on practices and intensification of production at plot scale, and the integration of rural populations into the market system. Yield booms in the Global North and Asia, including for rice, has ever since been based on the capitalisation of production units, logics of commodification, intensification and mechanisation of crop management techniques alongside the adoption of agricultural inputs, and, finally, intensive exploitation of natural resources (Cochet 2011).

These dynamics thus partly explain how a country such as China, which is nowadays the world’s biggest rice-producer, made use of its pluri-millennial agrarian and rice-producing legacy – together with early adhesion to international technological and knowledge transfers – to compete for influence with the USSR and former colonial powers in Sub-Saharan Africa (Rist 2013, Monin 2017). Several African countries obtained access to Chinese cooperation during the 1960s, through the replication of a farm model based on irrigated rice production, developed in communist China under Mao’s leadership (Aurégan 2017). In this respect,

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<sup>85</sup> At the time, such interest was driven by both concerns about and willingness to examine possibilities of controlling the climate and weather of one particular country, and therefore its agriculture and food production, by controlling the atmosphere (Pestre 2014b).

<sup>86</sup> It is worth recalling the distribution of the population density in Agoro sub-county, the highest in the District occurring precisely in the two parishes where indigenous irrigation first developed in the hills, despite the development of the Central village on the site of the former IDP camp.

although in Sub-Saharan Africa irrigation might first have been attributed to colonialism, newly independent states quickly took control of it – a trend made easier by the emerging international institutions’ position on irrigation as a necessity for increasing food production. However, unlike in Asia, the rapidly-increasing number of large hydraulic schemes were deeply embroiled in politics, at a time when the first post-independence governments needed to establish legitimacy. This would lead to irrigation schemes that were often either promoted or forgotten, depending on the different countries’ political development (Faggi 1990, Bertoncin & Pase 2012). Moreover, the implementation of top-driven and externally-imposed practices, considered universal and context-free by designers dissociated from the reality in the field, very often met with resistance on the ground for reasons we have previously seen.

In conclusion, the Chinese approach of adopting industrialised and “modernised” agrarian practices in order to transform its own pluri-millennial rice cultivation and irrigation is closely linked to the rapid changes in agriculture in the Global North and in Asia, where environmental and political configurations allowed the “Green Revolution” to take root. The emergence of the development sector, as a new, privileged tool for international relations at the time of the Cold War, opened a window of opportunity for China to use soft power and promote its new irrigation scheme model, including in Uganda, applying planning and technocratic approaches to capitalist projects. This constitutes the irrigation scheme model introduced in Uganda in the 1960s by the Chinese cooperation teams, a model that became the point of reference in the country in the absence of any alternatives.

## 1.2. Jackson Amai and Ocen Kato – early days

This subsection briefly describes the Kibimba irrigation scheme – which was the first scheme implemented in Uganda as well as Jackson Amai’s and Ocen Kato’s first assignment – and the political context in which it occurred. Indeed, in East Africa, the rise of “Third-worldism”, characterised by the independence of many former colonies and a significantly interventionist state policy, is illustrated in the 1960s by the concept of self-reliance evoked in the Arusha speech in 1967 by Julius Nyerere, the first Tanzanian President, as a criticism of the western concept of “development”. In a world in the throes of the Cold War and where the Global South was, therefore, often taking sides, Ugandan President Milton Obote’s gamble on socialism led to a Chinese cooperation programme in 1965. In Uganda, several schemes were designed by a Chinese technical team; three of them were implemented: the Mubuku scheme

in the west of the country as a demonstration farm, then the Kibimba and Doho schemes in east-central and eastern Uganda. Unlike the Mubuku scheme, located at the foot of the Rwenzori mountains, which was also used as a resettlement project for populations from southern Uganda, the Doho and Kibimba schemes were implemented on virgin wetlands. In the late 1960s, a few freshly graduated Agriculture Officers were posted to the Kibimba scheme. Among them were Jackson Amai, a native of Lango, and Ocen Kato, a native of Acholi. British Rule had initiated militarisation and ethnicisation of the exercise of political power in Uganda as seen in Chapter 1. The colonial administration mainly perceived people from the north as a source of labour for cotton growing, infrastructure development and the army. Access to education and civil servants' positions was limited. However, this later became easier when Milton Obote, a Langi, came to power. After training together in a school in the Luwero, near the capital Kampala, Jackson Amai and Ocen Kato were sent to the Kibimba scheme as their first assignment.

Located near Lake Victoria, about 1,000 hectares were drained to implement the irrigation scheme. The Chinese team considered that the rainfall, on which the scheme relies for water, and the flat topography were favourable to establishing a gravity-fed irrigation scheme like those developed in the preceding decades in the Chinese deltas. Subsistence agriculture predominated in the surrounding areas. For a few years, the Kibimba rice scheme illustrated the "modernisation" of agricultural practices in the country, as later described by both Jackson Amai and Ocen Kato. The scheme had several objectives, since it also aimed to find an alternative to the cash crops previously favoured by colonial administration such as coffee, sugar cane and cotton whose prices were low at the time (Asowa-Okwe 1996). Rice was then heavily promoted with the introduction of improved varieties, mechanisation of production and post-harvest operations and the use of chemical inputs. Irrigation was achieved using large-scale infrastructure such as dams and cemented water channels and distribution gates (Buyondo 1977). The management system put in place by the Chinese team introduced practices such as water rotas and water control. Reflecting the "Green Revolution" and more generally the development sector at the time, with the rise of developmentalist governments in many countries (Pestre 2014a, Bonneuil & Pestre 2015), land-use planning projects such as irrigation schemes are resolutely technocratic and centrally-imposed, often implemented without consideration for pre-existing land use and agricultural practices (Bertoncin & Pase 2012). Shiv Visvanathan defines the developmental states that were emerging in the 1960s thus:



A word that was popular in biology and adapted to politics by Harry Truman, development became frequently used as a synonym for change, progress and innovation. The idea of the developmentalist state is more specific. It first expresses the idea that development is the subject of a catalysing gesture initiated by the state of which it represents the main ideology and skill. The developmentalist state institutes a tacit social contract through which it justifies its existence by promising its citizens security and development. The state sees itself as a project. The transition from under-developed to developed becomes a field in which one can have a career. Science, i.e. modern western science, is promoted to become an agent for change and a political object on the part of the state. Utilitarian and instrumental as witnessed by the key idea of “technology transfer”, science becomes the vehicle of development itself, illustrated by the principle of substitution for imports. The developmentalist state thus presents itself as a set of perspectives pointing towards the promise of economic change.<sup>87</sup> (Visvanathan 2015: 107)

In Uganda, Chinese cooperation illustrated a form of state empowerment through the establishment of centrally-imposed irrigation schemes, supposed to contribute to the country’s agrarian “modernisation” following the developmental state ideology described above. Finally in Uganda, as in many other countries, the impact and influence of irrigation schemes are hardly questioned (Zie 1992).

In conclusion, irrigation schemes became part of a strategy introduced by the socialist northerner Milton Obote to set the Ugandan state on the road to developmentalism. Those first attempts, outside any public irrigation policy, to promote irrigated rice production thanks to Chinese cooperation, were life-shaping experiences for Jackson Amai and Ocen Kato. They not only gained experience in rice growing, a pioneer crop in Uganda at the time, but also in the technocratic practices of the development sector. The main results of this experience seemed to have been a dichotomous perception of agriculture, as reflected by the “Green Revolution” itself and among the international community. Indeed, in the interviews conducted with Jackson Amai and Ocen Kato, as with many other informants, the agrarian practices in promoted irrigation schemes are referred to as “developed” or “modern”, alongside planning and infrastructure-heavy project approaches. This is in opposition to indigenous and subsistence-oriented agriculture, more negatively connoted as “backward” or “traditional”<sup>88</sup>. This dichotomy is materialised by the implementation of schemes, as they oppose the “modern territory of the project and the territory said to be traditional and as such

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<sup>87</sup> Translated from the French.

<sup>88</sup> More generally, such an approach to indigenous practices continues to be illustrated on a regular basis on various occasions. For instance, under Museveni’s leadership political training courses called *mchaka-mchaka* were organised throughout the country whose “historical element encompassed Uganda’s pre-colonial history, political and economic geography, colonialism, backwardness and underdevelopment” (Dolan 2009: 115).

considered as primitive”<sup>89</sup> (Bertoncin & Pase 2012). Nevertheless, Jackson Amai and Ocen Kato parted ways shortly after that. Jackson Amai was assigned in the early 1970s to the newly implemented Doho scheme. Meanwhile, Ocen Kato was posted back to Agoro sub-county as Agriculture Officer in Acholi, as we will now see.

### 1.3. Ocen Kato, or reproducing the Asian “Green Revolution”

This subsection looks again at Ocen Kato’s first attempt to transform indigenous irrigation in Agoro sub-county, but this time from another perspective. As previously highlighted, in Acholi rainfall is much lower and more unreliable than in the southern part of the country favoured by the Chinese team for irrigation schemes. Consequently, with strong pastoralist influence, agriculture was also of less importance at the time – though this trend was already changing. Native of what is today Lokung parish, neighbouring Agoro sub-county, Ocen Kato was aware of the history of small irrigation systems at the foot of the Agoro hills, unique in Acholi. After training in the southern Luwero, and working at the Kibimba rice scheme, he strongly advocated that the Obote government establish an irrigation scheme in the valleys of Agoro. Believing the pre-existing practices of irrigation would make the adoption of an irrigation system based on the Chinese model “natural”, he also argued that, by using local labour and resources, investment would be low and therefore financially sustainable for the government. Unlike the other schemes, Ocen Kato’s proposed project did not involve Chinese cooperation but focused on two Agriculture Officers who would be responsible for reproducing the Chinese model, thanks to the participation of the inhabitants of the valley. In 1968, with the support of some sub-county leaders, Ocen Kato’s arguments were accepted and he was assigned, with another Indian Agriculture Officer, to implement the scheme. Surveys delimited about 600 hectares considered fit for the implementation of such a gravity-fed scheme, located on the existing *joro* shared by clans from Pobar and Rudi parishes. However, though a native of the surrounding area and aware of the complex indigenous institutions involved in the local irrigation systems, Ocen Kato aimed to create a production’s territory by erasing the *joro* system. Land would be managed to suit the technical optimisation of water control, with the demarcation of production blocks and the adoption of a collective crop calendar, “emptying” the *joro* of its existing social structures. In this way, Ocen Kato’s intentions directly reflected the conceptualisation and implementation of the Kibimba scheme, and more generally the

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<sup>89</sup> Translated from the French.

“development” approach to establishing medium and large-scale irrigation schemes across Sub-Saharan Africa at the time.

Nevertheless, the vision of agriculture Ocen Kato defined as “modern” soon had to face local social realities as well as the consequences of political events. Indeed, the strong local roots of indigenous practices were set aside by Ocen Kato and his colleague. “In the name of development”, a goal perceived as superior and consequently hardly questionable nor questioned, Ocen Kato, alongside a few leaders from the state administration system, tried to erase the pre-existing territoriality of the *joro*. Confronting the top-led vision of “development” with structures and dynamics on the ground led to mitigated results. Some objectives were achieved, such as the introduction of vegetables grown as new cash crops to supply Kitgum town. However, as previously described, the “modernisation” of irrigation did not take place at this time. Local participation was low, mostly due to the rejection of the new land and water management systems, which would have deeply disrupted the balance between the clans in the valley by disrupting allocation of, and access to, irrigable land. Consequently, the demarcation of production blocks materialised by earth canals did not last and the few items of water distribution infrastructure, such as water gates, were abandoned after the departure of Ocen Kato and his Indian colleague. Rice was hardly adopted since, in the 1960s, “rice is such a difficult crop to deal with at all stages that the people just see no point in growing it since it can now be obtained cheaply from the shops” (Lutara 1956: 24). Consequently, as seen in previous chapters, Ocen Kato’s lasting achievements were the adoption of vegetable growing and an upgraded model of hand-made dams involving sandbags to allow easier and more effective water retention.

Indeed, Ocen Kato did not stay long in Agoro sub-county at this time, his ambition being disturbed by political choices. After a year in the valley, he was sent to Cairo in 1969 before he could manage to take any rice seeds from the Kibimba scheme to Agoro sub-county. In Egypt, Ocen Kato was trained in irrigation, a result of a new configuration of the relationship between Egypt and Uganda. This relationship was conflictual during the colonial period (Ntambirweki 1996, Collins 2001) during which the British administration not only recognised historical Egyptian rights over the Nile waters but also agreed that Uganda should not implement any project that might affect the Nile’s volume and distribution (Nile Waters Agreement 1929). However, after World War II, negotiations about the sharing of the Nile waters changed to become highly political and strategic South-South cooperation between

Egypt and upstream countries. The construction of the Owen hydroelectric dam near Lake Victoria, with Egyptian funding and completed in 1968, illustrates this convergence (Collins 2001). The project also reflects the beginning for Egypt of a strategy of including other countries under its umbrella in order to maintain dominance over the Nile waters in a context of changing regional politics (Blanc 2012: 207). For Uganda, initiating irrigation schemes then represented one facet of diplomatic relations with Egypt, probably eased at that time by Obote's choice of socialism. Nevertheless, Ocen Kato's position remained vacant after his departure. Moreover, shortly afterwards, Idi Amin's military coup in 1971 once again froze relationships with Egypt and led to the expulsion of the Indian and Pakistani community from Uganda in the following year. Consequently, as Ocen Kato came back to Uganda, he was finally posted back to the Kibimba scheme in 1974, while his former Indian colleague, having left the country, was not replaced either. These events occurred when UGX30 million were finally secured for the 1973-74 financial year to develop an irrigation scheme in Agoro sub-county. In the absence of Agriculture Officers, the attempt to establish a scheme was abandoned while the country entered a long period of violence and crisis. As previously noted, during Idi Amin's regime, both the army and the administration went through bloody purges, targeting mostly Langi and Acholi. Since, at the time, Ocen Kato was assigned to the Kibimba scheme and Jackson Amai to the Doho scheme, both were spared from the massacres. Reflecting the economy in general, management of the Kibimba and Doho schemes, previously introduced by the Chinese cooperation teams, quickly collapsed.

In conclusion, the first attempt to transform indigenous irrigation in Agoro sub-county was driven by Ocen Kato's advocacy, favoured by the national policies in force at the time. This case illustrates the attractiveness of "modernised" agrarian practices, as Ocen Kato, though being a native of the area, still discarded indigenous structures due to his exposure to what was perceived as "modern" practices. The Chinese technocratic and productionist model, materialised in the Kibimba scheme, thus became a point of reference for one of the first generations of Agriculture Officers in the independent state. Finally, geopolitical considerations, including a national crisis, put an end to this first attempt.

## 2. SPREADING RICE AND COLLAPSING SCHEMES

This section focuses on a period of political and economic crises, marked by the Idi Amin regime and the Bush war that followed. Although this particular national context did not prevent rice growing from slowly becoming established, the irrigation schemes were affected by state withdrawal as well as other factors, which we will now see through Ocen Kato, back at the Kibimba scheme, and Jackson Amai, then transferred to the Doho scheme. The first subsection introduces both schemes in more detail and explains how they were affected by the changing national political and economic context. The second focuses on the rice boom that finally occurred, when the Agriculture Officers were assigned to the north of the country.

### 2.1. Securing incomes in a country in crisis

Covering about 1,000 hectares on the eastern side of the foot of Mount Elgon, the design of the Doho scheme is globally the same as that implemented in the Kibimba wetland: a gravity-fed irrigation system. Nevertheless, in Doho, water is diverted directly from a river, thus not requiring the water pumping system used on the Kibimba scheme, mainly during the dry season. Moreover, in the Doho scheme the focus was placed exclusively on rice production, while in Kibimba it also focused on seed production and distribution. Finally, the management of the Doho scheme is mostly decentralised, since the scheme is located further away from Kampala and benefited from far less investment, including in terms of mechanisation. Consequently, the Officers posted to the Doho scheme, including Jackson Amai, were more autonomous. The final and particularly significant difference lies in land management. Whereas the Kibimba scheme became a national venture and the state its main stakeholder, the Doho scheme was meant to be taken over by the indigenous population in exchange for payment of taxes. These distinct management systems led to distinct tasks for the civil servants. Responsible for land allocation as well as water distribution, the staff assigned to the Doho scheme quickly faced discontent since people considered them to be the main beneficiaries of the project. Civil servants' salaries were indeed irregular and low at that time, in a context of political and economic crisis. In the Kibimba scheme, staff were given access to land to cultivate, as the indigenous population was excluded from access to land and benefited from the scheme only in terms of unqualified, temporary jobs. On the contrary, in the Doho scheme staff could allocate plots to themselves, potentially at the expense of the local population. Consequently, balances of power quickly emerged between the most influential

people in the Doho scheme to obtain access to the largest plots and/or easier access to water for irrigation (Zie 1992, Asowa-Okwe 1996). As an Agriculture Officer, Jackson Amai was then in a dominant position, for example overseeing both land and water management and tax collection. The struggle for power intensified and created conflicts as rice was slowly taking root in the country, most particularly in the east, as a staple cash crop, while wetland resources slowly came under pressure.

Both schemes had significant impact and influence, particularly in the context of the 1970s, characterised by the Ugandan state and its economic collapse, and the search for alternative cash crops. Furthermore, rice became attractive as other sectors such as coffee and cotton collapsed (Asowa-Okwe 1996), and wetlands represented flat, virgin land proved to be suitable for the new cereal (Mwaka 1991). The implementation of the schemes led to local economic booms, with the construction of new infrastructure, schools and clinics. With two rice crops a year, the need for labour led to an increase in its price in those areas as well as to the proletarianisation of workers, particularly at the Kibimba scheme (Zie 1992). Rice growing became strategic and was carried out mostly in the east, and to a lesser extent in the central-eastern region. The area under rice cultivation increased from about 3,000 to about 20,000 hectares between the early 1960s and the early 1970s, national production following similar trends with an average yield of one ton per hectare (Kikuchi *et al.* 2014). However, during the Idi Amin regime and the following Bush war, the annual volume produced became irregular until the early 1990s. Nevertheless, an exponential increase may be seen from the mid-1980s, demonstrating a widespread interest in rice, since irrigation by submersion spread in wetlands from the 1980s in the central-eastern and eastern regions.

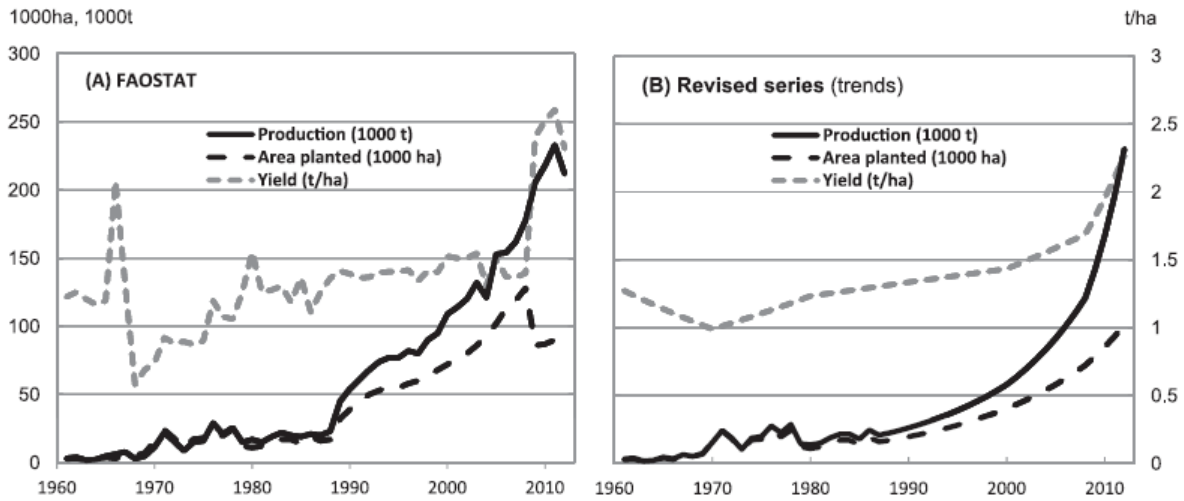


Figure 23: National rice production in Uganda (Kikuchi et al. 2014)

At the same time, the Kibimba and Doho schemes were descending into turmoil, reflecting national trends as the country entered crisis and deepening isolation under Idi Amin's dictatorship. With the end of state control over certain commodities such as rice, incomes decreased significantly for most producers. Food crises appeared locally, seemingly due to labour being dissociated from subsistence crops while its price increased, as it gradually became an integral part of the local cash economy, transformed with the implementation of the schemes (Zie 1992). Moreover, although it was a national venture, after its initial implementation the Kibimba scheme did not receive the significant capital which would have allowed the maintenance of mechanized production as initially intended. The major budget cuts that accompanied the scheme's structural adjustments did not resolve the financial crisis. As in the Kibimba scheme, the Doho scheme's infrastructure gradually fell into neglect that was not reversed by the shift to liberalism and adjustment plans. Indeed, in the Doho scheme, dissociated, centrally-imposed design, as well as conflicts opposing staff and growers, prevented the initial management system from becoming established. Planned collective action to manage water over large distances did not take place, nor did the demarcation of land into production blocks, the latter being the focal point of deepening conflicts. Attempts to solve these issues in 1984 by establishing a co-operative society failed, mostly because the society lacked the legitimacy to impose its authority (Zie 1992). Consequently, land in the Doho scheme went through similar trends as the surrounding wetlands, which were cleared to cultivate rice, be it rain-fed or irrigated by submersion. This trend mostly affected central-eastern and eastern regions, but also spread up to the Kyoga lake basin where rice growing

intensified, initially in the 1980s, and more particularly in the 1990s (Bertrand & Nabuguzi 1991), significantly contributing to the Ugandan rice boom of the 1990s.

In conclusion, while Ocen Kato and Jackson Amai were assigned to southern irrigation schemes designed by the Chinese cooperation teams, rice growing eventually spread slowly. This trend must also be considered in the context of economic collapse, in which long-established major export crops became less attractive. Alongside the increase in rice production, a cash crop targeting national urban food markets, unlike coffee or cotton, came tensions over access to land suitable for rice growing, showing that such conflicts were not new in the later Olweny and Agoro irrigation schemes. Rather, with a dominant position as a scheme Officer, Jackson Amai in particular had the opportunity to grow rice personally. Such an opportunity quickly became a necessity, as the political context favoured the ethnic cleansing of Langi and Acholi, as well as the economic collapse of the country that led to state withdrawal from the management of irrigation schemes and many cuts in civil servants' salaries. Although rice growing spread, irrigation schemes on the other hand tended to collapse.

## 2.2. Back to the north

This subsection explores the new dynamics that arrived in the context of the rice boom and Museveni's takeover, at the time when Jackson Amai and Ocen Kato were finally assigned to the northern Olweny and Agoro irrigation schemes.

Rice production indeed became significant in the 1990s. This decade was marked by the country's first period of political stability since independence, after Museveni took over Kampala and put an end to the Bush war in 1986. Meanwhile, in response to the increase in rice production, the rice sector became more structured with an increase in the number of millers and traders across the country (Kijima *et al.* 2013, Tokida *et al.* 2014, Barungi & Odokonyero 2016), which finally occurred independently of any public policy/intervention. Indeed it rather resulted from the situation created by the legacy of Chinese cooperation, more or less carried on by Ugandan Officers, coupled to a decade of isolation at local as well as national levels leading to disruption of agrarian practices and ways of thinking. As a consequence of this period of isolation, "development" workers in Uganda were hardly influenced by the prevailing international ideas during the 1970s and most of the 1980s, due



to the Bush war waged by Museveni. Jackson Amai and Ocen Kato, who came back north in the 1980s, then continued with the legacy of the 1960s “Green Revolution” through the Olweny and Agoro irrigation schemes.

The political dimension of the schemes was already significant, as the Lango and Acholi sub-regions had not only been historically associated with central power since independence but also with opposition to Museveni through the emergence of rebellious groups. Moreover,

In March 1987 the NRM government’s first Rehabilitation and Development Plan (RDP) was published, covering the four years to 1990/91. The term “rehabilitation” was included to emphasize that, following fifteen years of turmoil, the rehabilitation of existing infrastructure took priority over new investment. The first RDP was essentially an update of the Recovery Programmes produced during the Obote II period (1981-85), rather than a totally new plan. (Whitworth 2010: 130)

Consequently, the perspective of an irrigation scheme in the Lango sub-region, revived in the 1980s under the short-lived Obote II period, was not abandoned by the new NRM government. The project’s concept was supported successively by various international donors, illustrating the changing international environment that occurred in the 1980s and 1990s and that will be explained later. The first feasibility studies were conducted by the Chinese cooperation team using United Nations funding during the 1980s. The design was, once again, similar to the Kibimba irrigation scheme, proposing the development of the Olweny swamps located in Agwata sub-county near Lake Kwania – part of the Kyoga lake system. The targeted area covered around 200 hectares for rice irrigated by gravity and pumping. Perceived as too costly, the design was then reviewed, favouring the Itek and Okile swamps whose topography was considered to be more suitable to an exclusively gravity-fed system – also favoured by the new ecological considerations of the period. However, pressure from local politicians led the government to implement part of the initial Chinese proposal in the form of the 50-hectare Agwata Nucleus Farm. This was finally constructed in 1994 without further design work.

Jackson Amai was thus transferred from the Doho scheme to Agwata farm as a Quality Control Officer, finding himself once again in his native region. The year before, Ocen Kato had also been transferred from the Kibimba scheme – which was about to be privatised as part of the

structural adjustment plan<sup>90</sup> – back to Agoro sub-county. However, the situation they encountered in their native sub-regions was characterised by the social and economic traumas that followed the 1986-87 cattle-raids, alongside growing civil war as the conflict against the LRA intensified and spread.

In conclusion, as the rice boom was occurring, Jackson Amai and Ocen Kato eventually came back to their native sub-regions to carry out new assignments. While Ocen Kato was again posted to Agoro sub-county, Jackson Amai was posted to Agwata farm, a project designed under Obote II but implemented under strong political pressure from Museveni's new government. Nevertheless, the war that was developing in the north would quickly have a harsh impact on the Agriculture Officers' work as well as their lives, as will now be shown.

### 3. RICE IN WARTIME

This section explores how the context of war, against which the Agriculture Officers' actions were now placed, represented an unprecedented configuration for another stage of the development of rice in Uganda – especially with events such as the Langi agrarian shift prominent in Lango and displacement, which lasted between one and two decades in Acholi. Furthermore, we will finally see how Jackson Amai's (first subsection) and Ocen Kato's (second subsection) lives were affected by the war and how, in turn, the events of the war influenced the courses of action they adopted in the midst of violence.

#### 3.1. Becoming a development broker

This subsection explores Jackson Amai's experience on his return to the Lango sub-region, and more particularly how he came to play several roles, thus becoming what some authors such as Thomas Bierschenck, Jean-Pierre Chauveau and Jean-Pierre Olivier de Sardan (2000) have called a development broker.

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<sup>90</sup> Emmanuel Nyirinkindi and Michael Opagi describe the context as such: "When the National Resistance Movement came to power in 1986 it inherited a PE [Public Enterprise] sector that was in fast decline. Buildings and equipment were run down, destroyed, and looted, many records were missing and legal issues unresolved, and the workforce had little motivation to work. The 'performance of these enterprises was characterised by low productivity, high losses, and rising debts (...)' (Collier and Reinikka 2001: 37). Given the very limited resources at its disposal and the massive financial challenge of rebuilding almost all sectors of the shattered economy, the new government decided to rationalize its PE portfolio and to operate along commercial lines as far as possible."

As previously mentioned, in the early 1990s rice was a booming crop in central-eastern and eastern Uganda – still without any public intervention or policy for rice. Yet in the north its adoption was limited to the shore of Lake Kyoga, which made the northern sub-regions' contribution to national production low at this time. A harsher climate with less rainfall represented much less favourable conditions for rice growing, as historical socio-agrarian dynamics pointed to the adoption of irrigated rice as being challenging (Haneishi *et al.* 2013) – with the notable exception of the inhabitants of the valleys of the Agoro hills and its immediate surroundings, thanks to their long-existing irrigation practices.

Nevertheless, for Jackson Amai, the Agwata Nucleus Farm was a significant opportunity. Recent construction work and water control, enabled by major investment in water infrastructure such as pumps, led to high yields. Compared to the thousands of hectares of the Doho scheme, the management of 50 hectares did not raise similar issues of user coordination, particularly since staff were also given significant access to land. With this new scheme Jackson Amai benefited from income from rice production as his experience and network grew. However, the war against the LRA quickly hit Jackson Amai. On 10<sup>th</sup> October 1996 at around midnight, LRA rebels abducted about 140 schoolgirls – later called the “Aboke Girls” by the media. The deputy headmistress and another teacher followed the rebels through the bush. They convinced them to release 105 of the schoolers, but had to leave the others behind. This event was widely covered, including by the foreign media with, for example, the making of “The Mission”, a film about the failed 1994 peace talks and the abduction of the Aboke Girls. Nevertheless, in reaction, Jackson Amai said during an interview to The Observer:

I collapsed in the school's compound when I learnt that my daughter (...) was among the girls retained by Kony. It was devastating. I and other parents were in great shock. (The Observer 2013)

Parents of the abducted Aboke Girls then formed the Concerned Parents Association (CPA), of which Jackson Amai took leadership as Chairman, initially in order to demand the immediate release of the girls, stoppage of abductions and rehabilitation of the abductees. The purpose was thus not only to be a political lobby defending the rights of soldier-children, in order to present them as victims rather than murderers, but also to participate in the re-integration process of the returnees after they deserted the LRA, as declared by Jackson Amai during the same interview:

We absolutely need reparations from government because it is guaranteed to protect us under the Constitution. Before the Aboke abductions, there were intelligence reports that the LRA was in the area and could attack anytime. So, government should have provided protection. What surprised us was that the rebels [spent] five hours at the school and there was no challenge at all from the UPDF. The army only came in the following day when it was too late and the rebels had abducted the girls. [But] before we talk of reparations, we would that the girls who returned with children born in captivity are given meaningful education support. Some are so traumatized and need specialized medical attention. (The Observer, 31/01/13)

The CPA however did not stop at advocating for the Aboke Girls, but became influential and involved with a wide range of actors from civil society actively seeking to end the conflict, to the point of offering to make contacts with the LRA to establish dialogue with rebels – which the government refused in 2004, alienating civil society’s voice as well as showing lack of political will to end the conflict (Dolan 2009). The influence of the CPA also reached other high-level individuals, as demonstrated by its meeting with a prosecutor of the newly-created International Criminal Court (ICC) to express concerns about the repercussions that the appearance of LRA leaders’ before the ICC might have on the abducted children. Indeed, this was widely seen by civil society in north Uganda as strongly undermining any further possibility of ending the conflict by peaceful means (Finnström 2008, Lamwaka 2016, Dolan 2009, Branch 2013). Finally, the CPA’s renown can be illustrated by the financial assistance provided by foreign governments with respect to the children’s abduction, as shown for instance by an article from the Monitor, a mainstream Ugandan newspaper:

Mrs [Hillary] Clinton also said her country through USAID will provide U.S. \$500,000 directly to local groups including Concerned Parents Association and Gulu Save the Children Organisation to help them find abducted children and give them the medical care they need to heal. She also said they will provide another U.S. \$2 million over the next three years for a new Northern Uganda Initiative that will help people plagued by rebel activities get jobs, rebuild schools, health clinics and their own communities. (The Monitor 1998)

While creating the CPA, Jackson Amai used his experience as a development agent: he mobilised his network, contacted potential donors and organisations, demonstrating his mastery of “development” sector codes through framework documents and the associated vocabulary. At the time, Jackson Amai’s income from rice production was becoming significant thanks to the Agwata farm where he started to grow rice, which probably facilitated meeting the association’s initial expenses.

Moreover, the second phase of the Olweny irrigation scheme, delayed by a review of the technical design, was eventually implemented in 1999 for a period of two years. As briefly

mentioned in Chapter 2, this design was influenced by the new international environmentally-friendly paradigm that emerged from the 1992 Earth Summit at Rio de Janeiro. The irrigation scheme was less infrastructure-heavy than the Kibimba or Agwata farm schemes. With general distrust toward the project and the government's intentions, inhabitants of the Itek and Okile area did not participate as expected, as highlighted in Chapter 2. With the increased violence and the spread of the war in the early 2000s, most of them left their villages for the neighbouring Barr camp or town. In this context, Jackson Amai found a way to benefit from the situation. Becoming a leader of the Lira Rice Promoters Association he created in 2004, his contacts within the MAAIF led the association to be supported mainly in the form of donations of machinery and tractors. LRPA's members' access to land, mostly in Itek swamp, near the road to Lira and the Barr camp, was facilitated by this support, as it significantly contributed to increase their legitimacy and authority. Jackson Amai's long experience with irrigated rice and leadership then facilitated the adoption of the collective crop calendar, intensive rice growing practices, including transplantation and uses of inputs, and collective water allocation, in this area of northern Itek. As people came back from the camps, LRPA members' access to land was thus not challenged, Jackson Amai's fame for his advocacy work for abductees' children probably also helped.

Meanwhile, in Agwata, rice production had fallen since 2002 when power was cut due to repeatedly unpaid bills, therefore preventing growers from pumping water any longer. Besides rice production, the rehabilitation of the Olweny irrigation scheme in Itek and Okile swamps now became another, significant source of income for the former Agriculture Officer. With his long-term involvement with the scheme, since its beginning at Agwata farm, Jackson Amai became a key player in the project. Though not directly involved in the Itek/Okile co-operative society management, he remained an influential member, often consulted by the recently-elected executive board. His connections with institutions led to an experimental project with NARO being conducted in several plots of the Itek swamp, from which the Itek/Okile co-operative benefited financially, as well as enabling him to personally conduct a survey programme for the Africa Rice Centre, demonstrating the extensive network he uses as a resource for both patronage and cronyism, as seen in Chapter 2. Finally, he became involved in the Olweny scheme rehabilitation as a consultant, officially in charge of relationships with communities despite being an outsider to this particular area.

In conclusion, developments in rice and irrigation led Jackson Amai to gather extensive knowledge and experience both in terms of irrigating rice and mastering the codes and norms of the development sector. When he was assigned to a new irrigation scheme back in his home area, at a time characterised by prolonged crises and increasing violence, the context provided him with as many opportunities as constraints, enabling him to increase his personal influence and income, through various actions, often as a reaction to the unstable and unpredictable war environment. This put him at the interface between the people and development sector actors, honing skills in development broking in which he remains a key actor today with respect to the Olweny scheme as it undergoes rehabilitation.

### 3.2. Camp life and suffering

This subsection focuses on Ocen Kato's actions during wartime. Assigned back to Agoro sub-county, where an IDP camp had developed, he found himself at the epicentre of violence, especially as the valley was favoured by the LRA rebels to cross the border to Sudan. Isolated and regularly exposed to violence, Ocen Kato found himself in a rather different situation to that of Jackson Amai, as will now be shown, while still aiming to transform the indigenous irrigation system so that the area could grow rice, based on his experience on the Kibimba scheme and while abroad in Egypt.

In 1993, when Ocen Kato came back to Agoro sub-county he found a camp already formed in the valley and called Central village. This time, however, Ocen Kato arrived with rice seeds from the Kibimba scheme. Since rice was finally booming in the country, he decided to focus on its adoption, at the same time as reviving his previous attempt to replicate the Kibimba scheme design on the *joro* of the plain. This time, camp environment probably created favourable conditions for adopting rice, whose cultivation finally started to spread across the north. Forced congestion in the camps led to significant interest in rice growing, since the yield and price were perceived as attractive by people who no longer had access to large pieces of land to cultivate. For instance, Chris Dolan estimated crop prices during his fieldwork as followed, illustrating the significant attractiveness of rice compared to other crops:

<b>Crop</b>	<b>100kg sacks per acre</b>	<b>Price obtainable per sack (UGX)</b>	<b>Value of harvest per acre (UGX)</b>
Rice	25-30	25,000-30,000	625,000-900,000
Maize	25	12,000-18,000	300,000-450,000
G-nuts (shelled)	7.5	18,000-30,000	135,000-225,000
Simsim	2-3	36,000-60,000	72,000-180,000
Sorghum	5-6	12,000-12,800	60,000-76,800
Millet	2-3	18,000-24,000	36,000-72,000

*Figure 24: Crop prices recorded by Chris Dolan in 1999-2000 (Dolan 2009)*

Furthermore, an interview carried out by Caroline Lamwaka in September 2001 illustrates this dynamic:

Like the majority of people in the camps, Francis Moro had learnt to survive from one small job to another. For three years, he had rented half an acre of land outside the camp in which he grew rice. Then the owner took away the land, saying he wanted to use it. But from the capital he had accumulated through the sale of rice, Moro moved on to selling tapes. At the time he was growing rice, he got six bags of rice from the rented land worth Shilling 200,000 after paying labour. Half an acre of land in Pabo was rented at Shillings 20,000 per year, and a full acre at Shillings 40,000. But finding a piece of land near the swamp to rent was not easy, while getting the money to rent such land was also a dream for many people. (Lamwaka 2016: 364)

Moreover, with the rice boom starting and the spontaneous development of the rice sector occurring in the country in the 1990s, the government also used rice as a tool to reintegrate returnees and former UNLA soldiers – the regular army under Obote II – through a few rice farms in the Gulu district. As highlighted in Chapter 3, the opposition shown by the inhabitants of the valley to Ocen Kato’s activities was by this time weakened. Rice growing took root in the Agoro valley, particularly within the *joro*. Finally, a few parts of the *joro* started to adopt the “modern” agricultural practices promoted by Ocen Kato. As for Jackson Amai, Ocen Kato demonstrated that he had to some extent learned the codes of development broking, illustrated by an agreement with the World Food Programme to fund the “rehabilitation” of the Agoro scheme – meaning, to fully implement, throughout the *joro*, the design he promoted back in the 1960-70s.

However, the agreement was broken when violence reached new levels following the Iron Fist military operation launched in 2002. Agoro sub-county was not spared. Ocen Kato described his experience during an informal discussion in October, 2016:

[In 2003] This day, I was in the field with some farmers when we heard the rebels coming from the mountains. I don't know why, but that time, I knew it was going to be terrible. I had a bike. The farmers told me to go to Kitgum. So I left them behind. I prayed God that I would reach town. It is far, almost a hundred kilometres, and I am old. I was afraid to meet rebels, or the army, or hitting a mine. God didn't hear me. When I reached town I was told the truck that transported my wife and my daughter hit a mine. They died. I never went back to Agoro.

The impact of the massive renewal of violence that accompanied Iron Fist was also felt in the expanding rice sector, as reflected by the data below focusing on rice millers:

Region	Number in sample	%	Percentage of sampled rice millers by year of starting business at given region and location				Percentage of sampled rice millers by region and location at given time			
			before 1990	1990-1999	2000-2004	2005-2009	1990	2000	2005	2009
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
All	374	100	3.8	17.6	26.5	52.0	100	100	100	100
North	47	12.6	4.4	28.9	26.7	40.0	14.6	20.6	12.7	9.7
East	229	61.2	5.3	19.7	28.1	46.9	85.4	68.5	64.9	55.2
Central	49	13.1	0.0	4.1	30.6	65.3	0.0	3.1	15.1	16.5
West/Southwest	49	13.1	0.0	10.4	14.6	75.0	0.0	7.7	7.2	18.9
Urban	28	7.5	10.7	17.9	39.3	32.1	21.1	7.6	11.1	4.6
Rural cluster	114	30.5	5.3	23.9	38.1	32.7	42.5	41.4	43.8	19.2
Rural non-cluster	232	62.0	2.2	14.4	19.2	64.2	35.9	50.8	44.9	76.6

“Cluster” = area where there were more than four rice millers in the same location.

Urban = towns with population of more than 60 000.

*Figure 25: Number of rice millers per region by year of establishment  
(Kijima et al. 2013)*

Nevertheless, the limited interest shown by the NRM government in rice or irrigation schemes was also shared by some international actors. At the beginning of the 2000s, the myth of an African “Green Revolution” seemed to have returned to the forefront, illustrated by the spread of the NERICA (New Rice for Africa) rice variety whose success in Uganda may be questioned (Kijima *et al.* 2011), and the Ugandan FIEFOC (Farm Income Enhancement and Forest Conservation) programme – demonstrating, as we will see in Chapter 6, a slow return to public involvement in agriculture. Despite the low popularity of the NERICA variety – especially in the lowlands – and the low level of adoption of the intensive agricultural practices promoted by the irrigation schemes, the boom in Ugandan rice production finally continued, with production reaching about 200,000 tons in 2010 (Kikuchi *et al.* 2014) as shown below:



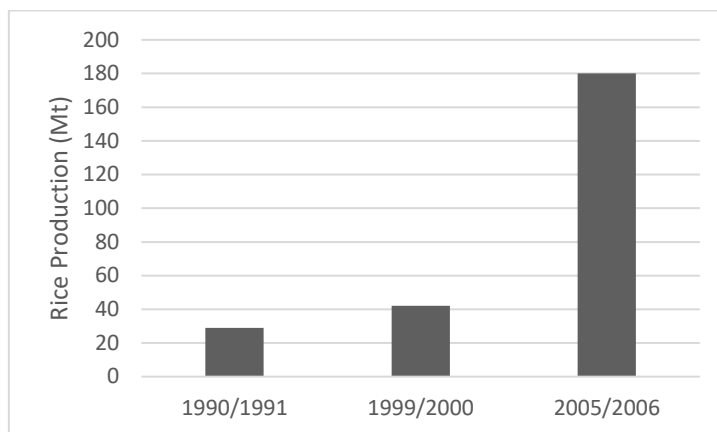


Figure 26: Rice boom in Uganda (Data from UBOS 2010a, 2010c)

The northern region did finally make a significant contribution to national production, which spread in those areas during wartime and the period of camp life. Unlike the eastern region, the main contributing area where rice has mainly been produced in wetlands for a longer time, in the north rice is mainly found in upland areas (Oonyu 2001, Haneishi *et al.* 2013).

Region	Area (ha)	Production (t)	Yield (t/ha)	% of National Production
Central	2,637	2,173	0,8	1,1
Eastern	36,033	128,195	3,6	67,2
Northern	25,912	43,719	1,7	22,9
Western	10,504	16,649	1,6	8,8
<b>Uganda</b>	<b>75,085</b>	<b>190,736</b>	<b>2,5</b>	<b>100</b>

Figure 27: Rice production in Uganda in 2008/2009 (Data from UBOS 2010a, 2010c)

Consequently, the rice boom and finally its spread across the country demonstrates growers' interest in and ability to produce rain-fed or irrigated rice by submersion, in wetlands or uplands, coping with various climatic conditions. Meanwhile, after a few decades, "developers" did not consider irrigation schemes to be successful. The schemes were rather perceived to be in need of "rehabilitation" due to the absence of irrigation and to limited rice production apart from the intended collective water management. Although the Kibimba and Doho schemes probably made a significant contribution to the adoption of rice-growing in the country in terms of exposure to a new crop, the contribution of irrigation schemes to national rice production in terms of volume seems to have been rather limited.

In conclusion, in the light of an analysis of the development of rice-growing and irrigation, illustrated by the life experiences of two Agriculture Officers, it transpires that the adoption of rice in Uganda was mainly due to a combination of several factors. First, the Chinese model of irrigation schemes, which introduced rice growing at a higher level in the country. Second, the political and economic crises that followed shortly afterwards, during which scheme management collapsed, as well as the fact that the attractiveness of other cash export crops declined significantly while that of rice rose. Third, in the north, conditions of life in the camps, which unexpectedly created an environment more favourable to the adoption of rice in the midst of war, as illustrated by Ocen Kato's experience in Agoro sub-county. In this light, public intervention – illustrated in this chapter by the Agriculture Officers' long-term promotion of irrigated rice growing – appeared to have been of less significance in the rice boom that occurred. This reflects the general trend that led irrigation schemes, much developed in the 1960s in Sub-Saharan Africa, to be perceived as failures by “developers” such as cooperation agencies, NGOs and governments, justifying the abandonment or privatisation of most of them in the 1980s. This feeling was widely shared on the ground, as illustrated by Jackson Amai and Ocen Kato blaming the projects' “beneficiaries” “laziness”, “lack of awareness” and “backwardness” for scheme failures. As the blame is thus generally laid on the rural populations rather than on those who designed or implemented the scheme, it allows the term “scheme rehabilitation” to be used in various situations: as if the schemes had once run as they were supposed to in the past, but abandoned since then due to people's inability to apprehend them. Moreover, coping mechanisms and strategies found on the ground in reaction to scheme implementation are generally considered to be “project misuse” by both field-based technical staff and top civil servants. Such perception of agricultural “development” projects is rather common, as illustrated by the Agriculture Officers' constant willingness to promote the Chinese legacy, and as pointed out by Bernard Charlery de la Masselière:

Agricultural modernisation has shown little direct concern with the social transformation of rural societies. (...) the peasants, ‘ignorant of scientific farming’, have had to be persuaded or coerced to adopt a technical approach that has for a long time ensured a mode of domination (...) we are thus witnessing the eradication of the social and symbolic nature of space, reduced to a simple material object, a simple production tool. It was the technical administration's role to effect this transformation, thus the technicians became important in production from the region. The productionist ideal thus acted as a formidable reference model, whose contradictions were perceived by farmers (...) in terms of lacks: lack of know-how, lack of land, lack of means, money, inputs, information, time, etc. It was certainly a project involving subordination, if not domination, whose objective, stated or otherwise, remained the mobilisation of peasant labour and its

commitment to a new process of subjection, at the same time emptying traditional hierarchies and solidarities of their meanings.<sup>91</sup> (Charlery de la Masselière 2005: 51)

This analysis accurately describes the Olweny and Agoro scheme case studies, as seen in Part I, as well as the productionist approach. This logic was thus found at all levels: not only among fieldworkers, such as Jackson Amai and Ocen Kato, but also in the schemes' centrally-driven design process dominated by engineering, as will be shown in Chapter 6. The dominance of engineering, characterising the "Green Revolution" that was at the origin of irrigation and the transformation of rice production in Asia, which then spread to Uganda, is marked by its universal, technocratic nature, forming a continuity with colonialism and clashing with indigenous approaches.

## CONCLUSIONS

In this chapter, we have highlighted how, in Uganda, rice growing and irrigation – mostly by submersion, but outside collective water management – were the result of successive attempts, led originally by Chinese cooperation teams, at different periods marked by the advent of the global "Green Revolution" as well as national political and economic crises. In the light of the life experiences of two Agriculture Officers we have seen how rice growing became established and spontaneously structured in response to its increasing importance, while on the ground irrigation technology was ignored.

The first section focused on the transformation of agriculture in China which, by industrialising its pluri-millennial irrigated rice growing under the communist Mao era, was among the first countries to adopt the "Green Revolution". Following the universal and technocratic nature of the latter, since the development sector was on the rise in the context of the Cold War, the Chinese state farm model was imported to Uganda. The Kibimba, Doho and Mubuku irrigation schemes then became the point of reference for a "modern" agriculture with respect to rice and irrigation practices, both for successive governments and for Ugandan fieldworkers such as Jackson Amai and Ocen Kato, who reproduced these models in their later experiences in the north as well – as seen in the second section. That section also demonstrated the clash between the logics used by "developers" and the indigenous peoples, this time through the

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<sup>91</sup> Translated from the French.

eyes of field technicians. It appears that, though themselves native of the areas to which they were assigned in the north of the country, Jackson Amai and Ocen Kato had the same productionist vision of agricultural practices as the original foreign scheme designers. Throughout their lives they both therefore continued to promote the same practices they had seen in the original Chinese-designed schemes. However, the implementation of such schemes also involved a certain degree of domination, by those “in the know” represented by technicians and civil servants, and the “beneficiaries”, as illustrated by the Agriculture Officers’ actions in the second and third sections, and as seen in Part I. This did not undermine what could be called faith in the Chinese model of irrigation schemes, on the contrary developing skills in development broking, as seen with Jackson Amai’s experiences, despite the apparent failure of the schemes. The third section also demonstrated that rice growing was finally adopted in the north, mainly due to factors including the conditions of camp life and the decline in other export cash crops. In this light, although the irrigation schemes probably contributed to the adoption of rice by promoting it, neither the anticipated collective irrigation nor the productionist logic of which it is part became established. On the contrary, we showed that the rice boom in Uganda resulted from the convergence between various events, outside any planned or coordinated policy.

Finally, as the irrigation schemes inherited from the 1960s became the focus of a “rehabilitation” programme, as if they had once functioned as intended, the most commonly heard explanation for their collapse highlights the failure of the “beneficiaries” to adopt them. Indeed, blaming the users not only avoids questioning the schemes’ design or impacts, but also justifies their “rehabilitation”. The FIEFOC programme launched in 2008, under which the Doho, Mubuku, Agoro and initially the Olweny schemes were “rehabilitated”, did not show any significant change in terms of scheme design. This only increases the importance of questions raised in the light of the analysis of Part I: in the context of the previous failure of the schemes to meet with the announced objectives, how can the absence of impacts’ assessment, and the continuation of technocratic, top-led schemes, be analysed? What are the hidden and strategic issues of the FIEFOC programme, and can they explain the return to irrigation schemes? This will be the focus of the next two chapters.

# Chapter 5: The Political Ecology of Wetlands, Water and Land in State (Re)Construction (1986-1995)

The next two chapters focus on Ugandan politics under Museveni's leadership. Indeed, the return to irrigation schemes occurred under the NRM regime, first with the implementation of the Olweny scheme, then much more significantly with the launch of the FIEFOC programme in 2008. Nevertheless, as Museveni took over Kampala after a long period marked by political and economic crisis and armed conflict, state reconstruction was a priority for the new government. This took place through the drafting of a new Constitution, alongside numerous amendments, reforms and policy-making processes, in the context of embracing the dominant neoliberalism.

This chapter thus aims to understand the creation of the various legal frameworks which, in the absence of policies directly related to irrigation or rice, form a network of default rules, used as references in the irrigation sector. Indeed, while irrigation schemes were not yet at the core of developed public intervention – on which we focus in Chapter 6 – the making of legal frameworks for wetlands, water and land already reflected significant power balances that we will find again later in the making of public intervention in irrigation. Moreover, the political ecology of resource management involved with irrigation schemes allows us to analyse the genealogy of their renewal, by deconstructing how it was closely interwoven with the hegemonic discourses as well as with state-building dynamics.

We thus hope to understand how these environment-related frameworks are deeply embedded into state-building marked by donors dependency, whose main dynamics will be introduced in the first section. Indeed, the different frameworks illustrate how the NRM regime deployed strategies according to its interests through the external constraint imposed by donors and their dominant narratives. The second section shows the transnationalising process of making legal frameworks for wetlands and water, while the third section focuses on the instrumentalisation of the reforming of legal framework for land. This chapter thus pays particular attention to the power balances reflected and fuelled by such processes, as they lay the foundations of the political configuration in which public intervention for irrigation would later root, as will be seen in Chapter 6.

# 1. STATE-BUILDING IN THE ERA OF NEOLIBERALISM

This section explores the main reconstruction processes shortly after Museveni's takeover, thus highlighting the co-construction process of the Ugandan state under Museveni with the dominance of neoliberalism, which came with the end of the Cold War. The first subsection therefore focuses on the main internal dynamics leading to the adoption of structural adjustment plans, in the name of rebuilding the country's economy. This came in the context of changing international paradigms, on which we will focus in the second subsection. Finally, from this point of view, Uganda under Museveni's leadership represented a classic case of state-building by extraversion, a strategy whose paradigm highlights "the manufacture and appropriation of a veritable income from dependency as the historical matrix of inequality, of political centralisation and social combat"<sup>92</sup> (Bayart 1999). The third subsection goes on to explore how this strategy led the country to be considered as a show-case for the Washington consensus (Wiegratz *et al.* 2018).

## 1.1. Adopting hegemonic discourses and narratives

This subsection briefly introduces the shift to neoliberalism made by Museveni shortly after taking power. During the Obote II regime that followed shortly after the fall of Idi Amin's dictatorship, for the first time a structural adjustment plan was implemented in Uganda. Indeed, the economy truly collapsed during the 1970s, due among other things to uncontrolled government expenditure and growing inflation while the central bank kept on printing money to compensate for fiscal deficits and a massively overvalued exchange rate, (Tumusiime-Mutebile 2010: 36). Several economic reforms were implemented during the Obote II period. However, with the rising violence due to the Bush war, Obote found himself leading a state divided between, on the one hand, suddenly re-found financial credibility and, on the other hand, the generalisation of violence (Perrot 2003). As military expenditure quickly rose and expansionary monetary policies resumed, most of the economic reforms were quickly cast aside by the time Museveni took power in 1986. The situation was then as follows:

the NRM Government (...) inherited a nation torn apart by ethnic and religious conflicts, and an economy shattered by years of civil war, political instability and physical insecurity. (...) Revenues

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<sup>92</sup> Translated from the French.

had dropped to 7.4 per cent of GDP. Industrial enterprises lay abandoned. Even the remarkably resilient agricultural sector had been disrupted as farmers fled their farms in search of refuge. Uganda's once impressive economic and social infrastructures lay devastated by war and lack of maintenance. Its skilled personnel and experienced administrators, terrorized by successive repressive regimes, had fled to safer pastures. Those who remained were deeply demoralized by physical insecurity and declining real incomes. (World Bank 1991: 2)

Therefore, it appeared essential for Museveni to carry out reconstruction, which took the form of economic reforms among others. In 1987 the Economic Recovery Programme was launched, and lasted until 1996, aiming to “adjust the structure of Uganda’s economy from a publicly led to a private sector and investment-driven economy” (Lakuma *et al* 2017: 4). First, Museveni’s approach to economic policy was rather interventionist, as he was significantly influenced by communist ideology, with a vision of the state playing a significant role. Indeed,

The National Resistance Army’s military victory owed much to its discipline and it was implicitly assumed that economic agents would respect the basic requirement of military discipline to obey orders. (Whitworth & Williamson 2010: 3)

However, the results were not considered as encouraging: for example, inflation rose from 120% to 240% between May 1986 and May 1987. Consequently, between 1990 and 1993 several reforms were implemented, including legalisation of the black market, and devaluation and liberalisation of the official exchange rate. However, a fiscal crisis led to an increase in borrowing and in the inflation rate. External financial support finally appeared necessary to Museveni, and came from the IMF and the World Bank. First focusing on fiscal discipline, the reforms that followed set the country irrevocably on the path towards neoliberalism – by a “gradual, steady move from the rhetoric of radical left-leaning politics towards a neoliberal reform agenda” (Wiegratz *et al.* 2018: 12). Indeed

The timing reflected wider neoliberal interventions on the African continent, pushed by the international financial institutions. (...) The restructuring of Uganda started through structural adjustments, accompanied by continuous financial and technical assistance and persistent reform pressure and incentive from the country’s various multilateral and bilateral donors that remained a key characteristic for the next thirty years. (Wiegratz *et al.* 2018: 12)

This trend was not specific to the country. After the 1960s and 1970s, which were characterised by many interventionist states in the Global South, the 1980s marked a worldwide shift to state restructuring and withdrawal in many countries in the Global South with the implementation of structural adjustment plans (Chaléard & Sanjuan 2017). Macroeconomic indicators such as economic growth quickly established the objectives of the

reforms, while international financial institutions – and more particularly the World Bank and the International Monetary Fund (IMF) – strongly influenced analysis of the implementation of structural adjustment.

Finally, this reflects the dynamics of a self-maintaining development sector, promoted widely among international financial institutions, through the imposition of hegemonic discourses and the means to assess the impact of their implementation (Jerven 2013, 2015) as described by the same authors for Uganda:

Arguably, the celebratory tone of academic and consultancy accounts provided support to the granting of billions of US dollars of aid to the country, from which academics and consultants in turn also benefited. These accounts and the associated statistical country-based data sets produced by development economists are part and parcel of an underlying politics of numbers which sees African states and donors at the forefront of the struggle to control and shape data production about development or lack thereof (Wiegratz *et al.* 2018: 4)

Indeed, as we will see later, Uganda's economic reforms were quickly considered to be successful mostly using the criterion of economic growth. Nevertheless "after years of civil war, in 1986 economic standards were very low, thereby taking 1986 as a threshold to measure reform success is misleading; any reform would have produced some sort of improvement" (Wiegratz *et al.* 2018: 373).

In conclusion, while Museveni finally embraced neoliberalism, the observed economic growth hardly occurred thanks to structural change. Rather, it was based on a large amount of aid – accounting for half of the national budget at one period – and on the personal enrichment of some actors thanks to corruption (Asiimwe 2018).

## 1.2. Structural adjustment plans and "development"

This subsection focuses on the hegemonic nature of the structural adjustment plans – to which Uganda became an early subscriber in the context we have just seen – and how were they interwoven with the "development" paradigm as the Cold War ended. Indeed, as a reminder, the 1960-70s were characterised by the rise of "Third-worldism", and by the slow awareness of environmental issues, for which the responsibility of industrialised countries was highlighted. Tensions appeared in the international arena: the countries of the Global South claiming a right to "develop" using the fossil-fuel based model developed in the Global North, while on the other hand the 1972 Meadow report "The Limits to Growth" questioned this



model, which was based on depletion of resources and environmental damage. Nevertheless, under American leadership – its cooperation agency, USAID (United States Agency for International Development), was then the main sponsor of the World Bank – environmental issues were institutionalised and slowly became part of economic thinking, in an attempt of dominant actors to reconcile “development” and “environment” (Pestre 2014a).

Consequently, the concept of “development” started to promote economic growth in order to facilitate environmental protection as it would supposedly lead to poverty reduction and, therefore, ease resource conservation. In this way of thinking, resource depletion is linked to poverty, with the more vulnerable populations held responsible for environmental damage such as deforestation (Rist 2013). Moreover, interweaving of “development” and environmental protection also relied on the increasing number and scale of economic tools starting in the 1970s, and illustrates the spread of economic analysis as a new dominant global vision (Boudia 2014). This trend was reinforced by the election of Ronald Reagan to the White House in 1980, his conservative policy significantly influencing international financial institutions. Under his government, for example, cost-benefit analysis became mandatory: this ensured that regulation – be it of any kind, including social or environmental – must first and foremost benefit economic growth, or at least not hinder it. The 1980s were therefore characterised by the economicisation of social order throughout the world, and the advent of neoclassical economics (Shenk & Mitchell 2015). This was the background to the appearance of the Washington consensus, followed by structural adjustment plans, to solve the Global South’s debt crisis.

Indeed, during the 1970s the oil crisis led to high oil prices. The economies of the oil-producing countries proved to be incapable of absorbing the increased profit. Most of those countries then invested petrodollars on the financial markets, leading the capital to be recycled in the financial institutions of the industrialised countries. Commercial banks then invested some of the surplus in major loans to many countries in the Global South through a credit policy, often qualified as irresponsible (Rist 2013). Many of those countries later found themselves facing major instability in their balance of payments and thus unable to honour their agreements towards the financial institutions. In the 1980s many countries faced debt crises, to which the international financial institutions responded by drawing up structural adjustment plans. Their main purpose was to restore economic equilibrium through a range of liberal measures, known as the Washington consensus. Since the international institutions thought them

necessary in order to maintain the coherence of the international system, the measures focused mostly on budget and fiscal discipline, liberalisation, privatisation of state monopolies and ventures, support for private property and market deregulation. The global generalisation of structural adjustment plans coincided with Museveni's shift to neoliberalism.

The economic measures implemented through the World Bank and the International Monetary Fund (IMF) led to major budget cuts in recipient countries, particularly in the social services provided by states, such as the education and health systems, as well as a reduction in numbers of civil servants and other kinds of government support. This occurred in Uganda as well, with dramatic consequences for the population<sup>93</sup>. Indeed, it led mostly to reductions in welfare provision to meet imperatives defined by the market economy (Rist 2013). As states lost control over their finances, the door was opened to a multitude of NGOs of all kinds that took over state roles and contributed to the transformation of "development" into palliative humanitarian aid (Morin 2002, Rist 2013). In Uganda for instance, the number of NGOs increased from 200 in 1986 to over 7,000 about 30 years later, of which about 80% are officially non-operational (Asiimwe 2018: 147). Neoclassic economics therefore became a universal doctrine (Pestre 2014a), while "development" ceased to focus on a comprehensive approach to structural reasons for "north-south" differences. The focus was rather on basic human needs and democracy, a shift materialised by the emerging concept of "good governance" being promoted by the international financial institutions. At the time good governance was increasing in importance among international donors – including the IMF – linking state and institutional building processes with the efficiency of market economies and peace – following the hegemonic neoliberal paradigm (Rist 2013, Fustec 2014, Wiegratz *et al.* 2018).

International aid could then hardly be qualified as neutral – if it has ever been – but rather as promoting visions to which donors are attached, most of the time related to "Western values" and culture in an ethnocentric dimension, as illustrated by the case of Uganda:

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<sup>93</sup> See among others several contributions to the book edited by Wiegratz J., Martiniello G. & Greco E., 2018, *Uganda: The Dynamics of Neoliberal Transformation*, London: Zed Books, such as: Asiimwe G. B., *The Impact of Neoliberal Reforms on Uganda's Socio-economic Landscape*, pp.145-162; Nystrand M. J. & Tamm G., *Social Service Provision and Social Security in Uganda: Entrenched Inequality under a Neoliberal Regime*, pp.163-177; Ssali S., *Neoliberal Health Reforms and Citizenship in Uganda*, pp.178-198.

The [International Monetary Fund] statement (...) indicates what donors wanted, besides 'helping the poor': a commitment to neoliberal economic orthodoxy and a deepening of the reforms (i.e. a further embedding and locking-in of neoliberal capitalism). (Wiegratz *et al.* 2018: 14)

Rooted in the neoliberal paradigm, especially with the end of the Cold War, aid became conditional on the adoption of the principles of "good governance". In Palestine for example, aid is focused on institution building and economic growth, both described as requirements for state building. This case illustrates the relationship established by the international financial institutions between economic development, "good governance", states and peace building (Fustec 2014). Consequently, neoliberal reforms were favoured in Uganda not only by the international financial institutions but more generally by the donors' community, whose importance in Uganda increased sharply as the resources provided by the state were cut by structural adjustment plans. This was illustrated by the large amounts of aid given to the country in the first decade of Museveni's leadership, then later by the adoption of the principle of "good governance", in the form of a poverty-reduction strategy in the late 1990s, as will be seen later.

In conclusion, Museveni's early years in power were marked by a global re-adjustment of the "development" concept, which had a significant impact on the Ugandan reconstruction process. Indeed, as Museveni eventually embraced the financial institutions' structural adjustment plans, the latter reflected the neoliberal ideology, whose advent marked the end of the Cold War. In Uganda, this was translated through the reforms by clear state withdrawal and major cuts in public expenditure, alongside widespread privatisation, the expected "development" being reduced to economic development, supposedly achieved through the principles of "good governance".

### 1.3. Donor-driven Ugandan state reconstruction: a classic case of extraversion

With the acceptance of structural adjustment plans and support from the international community, Museveni came to rely heavily on the availability of conditional aid to rebuild the country's economy. As Uganda became the "IMF's good student" (De Torrenté 1999), aid flows dramatically increased. Alan Whitworth describes the issues of reconstructing the Ugandan state based on extraversion thus:

The implications of such donor dependence for public investment planning were profound. The traditional approach to planning was premised upon governments having a significant degree of control over the resources whose use was being allocated. However, when virtually all investment funds were provided by donors this clearly did not apply. While the government could exercise negative control by refusing offers of aid, it could not force donors to support particular projects. Donors had their own policies and priorities and, if they differed from those of the government, there was little the latter could do about it. It was no longer sufficient, if it ever had been, for a national development plan to simply list government expenditure priorities without considering where the resources were coming from. Planning and aid management were now inextricably linked. (Whitworth 2010: 132)

The rules of the major multilateral lending agencies, such as the World Bank and African Development Bank (...) meant they could not lend more than 90 per cent of a project's financing requirements. The balance had to be funded by the recipient government (or parastatal), in part to demonstrate local "ownership" of the project. (...) Despite efforts to rectify the situation, the arbitrary last minute cuts made to the 1990/91 Development Budget caused considerable disruption to many donor-funded projects. (...) This situation had arisen because in the early NRM years everyone had been desperate to secure aid to finance rehabilitation of the devastated economy. When a donor offered to fund 80 or 90 per cent of a project the response from MoF [Ministry of Finance] and MoPED [Ministry of Planning and Economic Development] was invariably "yes please". No one bothered to check whether government would in fact be in a position to contribute its 10 or 20 per cent share of projects costs. This was simply taken for granted. (Whitworth 2010: 134-135)

In response to this situation, a new policy was adopted by both government and international institutions to set up priority development projects and programme areas following a World Bank-led Public Expenditure Review. Though some donors would still address ministries directly – "line ministry endorsement of their proposals was taken as sufficient 'ownership'" (Whitworth 2010: 140) – and vice versa, government involvement slowly increased, building on donors' confidence in the capacity of the state to use aid. Consequently, between the early and late 1990s, the flow of aid was multiplied approximately threefold. In a few years, Uganda acquired the reputation of being the "good student" of the international financial institutions, becoming a favoured recipient for international aid (Perrot 2003: 423, Wiegatz *et al.* 2018).

Meanwhile Uganda was being rebuilt as an extraverted state<sup>94</sup>, reconstruction also involving the development of new political frameworks – beginning with the drafting of a new Constitution. Dependency led Ugandan political actors to cope with the conditionality of aid, demonstrating a capacity to appropriate its terms and use them to their advantage as well. Lauriane Gay for instance describes the Ugandan NRM government's room for manoeuvre thanks to the influence of donors as follows:

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<sup>94</sup> For more details, see also Banégas 1999 and De Torrenté 1999 among others.

Just as an African state cannot be likened to a simple graft of a political entity without any creative drift (...), the reform of public policies under an aid regime is not a play projected without autonomous action by national actors. On the contrary, one must think of action under constraint (...) funding bodies encourage certain themes and make means available to the benefit of certain actors and to the detriment of others, [there is] room for manoeuvre offered to national actors who, far from accepting the passive transfer of public policies relating to land, are the drivers of their policies whose form responds to the question of exercising power.<sup>95</sup> (Gay 2016: 219)

Strategies consisting of adopting the imposed dominant concepts, paradigms or tools, in order to turn them to one's political advantage were indeed deployed within the process of reconstructing the Ugandan state. More particularly, this was seen in drafting the environment-related legal frameworks that represented the basis for public involvement in irrigation, in the absence of a National Irrigation Policy. This basis concerns laws governing wetlands and water on the one hand, and land and – indirectly – agriculture on the other.

In conclusion, Museveni's first decade in power was marked by a process of extraversion involving the Ugandan state while institutions were re-built after decades of political and economic crisis. This occurred in the context of the end of the Cold War, which saw the advent of neoliberalism and its form of structural adjustment plans in the development sector, that international financial donors imposed as conditional on the aid that Museveni finally accepted. This came at the cost of fiscal and budgetary discipline, leading to major cuts in many public sector activities. Moreover, it started the construction of the state – as also reflected in policy making – on the general path to “good governance”, in which privatisation and opening to the free market were essential. Such processes were thus found at all levels and in all sectors, as shown in the following subsections.

## 2. TRANSNATIONALISING THE LEGAL FRAMEWORKS FOR WETLANDS AND WATER

This section shows how dominant paradigms were simultaneously imposed and adopted within the state construction process, as the NRM government finally developed strategies to cope with donors' constraints. Indeed, the first subsection shows how the prevailing international paradigms applied by donors went through a greening process in the 1990s, which had impacts on the development sector. Changing global dominance was then reflected directly in the development of legal frameworks for Ugandan wetlands and water

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<sup>95</sup> Translated from the French.

management, as shown in the second and third subsections. However, far from being a passive adoption of the hegemonic ideas, these subsections show how the imposition of donors' views was also turned to political advantage under Museveni's leadership.

## 2.1. The greening of "development" and politics

This subsection briefly introduces the main factors characterising the greening process of the dominant discourses, to which "development" was central, and consequently of politics in general.

Among international financial institutions, the shift to a "good governance" approach in the early 1990s – closely linked to countries in the Global South moving towards neoliberalism – led to a new definition of "development". Such renewal was consistent with the articulation of, on the one hand, the imperative of economic growth and, on the other hand, environmental concerns, which were at their height in the early 1990s. Indeed, in 1987 the World Commission on Environment and Development – known as the Brundtland Commission – released the Brundtland report, "Our Common Future", which laid the foundation for a definition of "development" that permitted the dominant world order not to be called into question. Though it states that interactions between economy and ecology can be destructive, the conclusion also states, in a contradictory fashion, that what is needed today is a new era of socially and environmentally sustainable vigorous economic growth (WCED 1987). The World Earth Summit held in 1992 in Rio de Janeiro only reinforced the new vision of "development" defining it as "sustainable development". The new aim was to achieve fast but "green" – meaning environmentally-friendly – and lasting economic growth (Rist 2013, Pestre 2014a, Fustec 2014, Brockington & Ponte 2015, Nel 2018). Gilbert Rist for instance comments on the advent of "sustainable development" as follows:

'Sustainable development' appears to be a camouflage operation; it calms the fears provoked by the effects of economic growth to prevent the latter being completely called into question. (...) the South strongly reaffirms its 'right to development' and claims to be able to achieve it before being able to seriously (and at great expense) protect the environment: that is also part of the imitation of the dominant model. As for the North, it has resigned itself to economic growth, even if it damages the environment and leads to social exclusion.<sup>96</sup> (Rist 2013: 341-343)

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<sup>96</sup> Translated from the French.

Finally, the increasingly popular concept of “good governance” produced by neoliberal orthodoxy and focusing on individuals through human rights and basic needs, was closely linked to the rehabilitation of the concept of “development”:

It meant rehabilitating a widely discredited concept by giving it more soul (...): calling ‘development’ ‘human’ was to render it once again desirable. (...) Big collective or social projects – because one could no longer say ‘socialist’ – were replaced by a more individualistic vision, humanist within the meaning of the rights of man whose universality was strongly reaffirmed, or humanitarian, like the interference that was henceforth the main method of intervention by the North in Southern countries.<sup>97</sup> (Rist 2013: 358)

Thus, redefining “development” as a “sustainable” process allowed the advent of neoliberalism to go unquestioned, by taking into account the negative consequences of economic growth – i.e. environmental damage – mostly by commodifying them – for example with the emergence of the carbon market, the REDD (Reducing Emissions from Deforestation and Forest Reduction) programme, payments for environmental services or the “polluter pays” principle. Approaches about “sustainable development” established commodification of the environment and human society as the dominant solution to the institutionalised problem of climate change, environmental damage, and deepening global inequalities.

Since the countries in the Global South claimed their “right to develop” over environmental concerns, and since the industrialised countries were not willing to question their patterns of production and consumption, the rise of “sustainable development” as a new global paradigm, in the midst of the fall of the USSR, led to a boom in new concepts, approaches, indicators and other tools within the development sector relating to environmental management. In Uganda, the making of environmentally-related policies illustrated this process – as did the review of the initial Chinese design of the Olweny irrigation scheme. The Ugandan state therefore took into account this new shift of paradigm, and secured funding<sup>98</sup>. The ratification of international treaties – see the figure below – that followed the 1992 Rio

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<sup>97</sup> Translated from the French.

<sup>98</sup> As a reminder, the Olweny irrigation scheme was redesigned not only due to the high cost of the Chinese model, but also to take into account the boom in “sustainable development” packages, such as participatory and community management for the scheme’s soft component, or carrying out one of Uganda’s first Biomass Studies with funding from the Nordic Development Agency or of the first Environmental Impact Assessment in Uganda as a newly mandatory requirement of the African Development Bank before funding the irrigation scheme. The impact of policy greening on the Olweny scheme design was thus significant, as explained in the first and second chapters.

de Janeiro Earth Summit also contributed not only to the normalisation of the new Ugandan state, but also to making it fully part of the concert of nations. Finally, these efforts attracted significant foreign aid, contributing to the country's reconstruction process.

International level			National level	
Year and place signed	Actors in the initiative	Treaty/agreement/framework	Year of ratification	Resulting policy
1971, Ramsar	International Community	Convention on Wetlands of International Importance (last amended in 1987, Regina)	1988	National Water Statute and Policy (1995 and 1999); National policy for wetlands (1995); National Environment Statute (1995); National Land Act (1998)
1972, Paris	United Nations	Convention for the Protection of World Cultural and Natural Heritage	1987	National Wildlife Policy (1999)
1973, Washington	International Community	Convention on International Trade in Endangered Species of Wild Fauna and Flora	1991	National Wildlife Policy (1999); National policy for wetlands (1995); National Forestry Policy (2001)
1982, Montego Bay	United Nations	Convention on the Law of the Sea	1990	-
1987, Montreal	International Community	Montreal Protocol on Substances that Deplete the Ozone Layer (amended in 1990, 1992, 1997, 1999)	1990	National Environment Statute (1995)
1990	African Development Bank	Environmental policy statement	-	National Environment Statute (1995); National Water Statute and Policy (1995 and 1999)
1992, Rio de Janeiro	United Nations	Agenda 21	-	National Environment Statute (1995); National Water Statute and Policy (1995 et 1999)
1992, Rio de Janeiro	United Nations	Sustainable Forest Management Principles	-	Reviewing the Forest Act of 1947; Forestry Action Plan (1995)
1992, Rio de Janeiro	United Nations	Framework Convention on Climate Change	1994	National Environment Statute (1995)
1992, Rio de Janeiro	United Nations	Convention on Biological Diversity	1993	Biodiversity Strategy and Action Plan (1992)
1994, Paris	United Nations	Convention to Combat Desertification	1997	Action Plan to Combat Desertification and Drought in Uganda (1999)
2000	European Union	Water Framework Directive	-	Watershed Approach

Figure 28: Main international environment-related frameworks/treaties in relation to state-building through policy-making in Uganda (Torretti 2019)



This resulted in greening Uganda's new public policies in line with the internationally prevailing paradigm. As the country was going through the process of drafting its new Constitution and reconstructing the state, the elaboration of new legal framework reflected this trend. For instance, the National Environment Statute of 1995 enshrined the concept of "polluter pays" developed at the 1992 Rio de Janeiro Earth Summit with Agenda 21, and borrowed narratives from the same action plan and other treaties produced at the time. This trend is illustrated through statements such as:

The Committee shall not issue a pollution license unless it is satisfied that the licensee is capable of compensating the victims of the pollution and of cleaning the environment in accordance with the "polluter pays principle" (Republic of Uganda 1995c: 39)

Every person has a right to a healthy environment (Republic of Uganda 1995c: 4)

All forests shall be managed in accordance with the principle of sustainable development (Republic of Uganda 1995c: 34)

In conclusion, the early 1990s were marked by a shift in terms of prevailing global paradigms, with the convergence between two processes. On the one hand, the advent of neoliberalism emerging as the Cold War ended, and its deployment in dominant international institutions. On the other hand, a new peak reached by protests pointing at environmental damage, including global warming, resource depletion and ever-increasing pollution. This led to a redefinition of the hegemonic discourses around the renewed concept of "development" as "sustainable development", interweaving neoliberal paradigms with environmental issues. This new configuration is directly reflected in the greening of Ugandan policy-making, as illustrated by its adherence to and participation in the whole range of international treaties and frameworks that were produced. The construction of a new, normalised Ugandan state therefore occurred by embracing the dominant approach about policy greening, following on from structural adjustment plans, and thus attracting the sought-after international aid.

## 2.2. The legal framework for wetlands

This subsection focuses on the trend of embracing hegemonic paradigms, with the aim of normalising the country and ensuring international support for state-building, taking the legal framework for wetlands as an example. We begin by exploring the transnational dimension of the wetlands legal framework, before raising issues related to land resulting from the making of such a framework. Indeed, as several irrigation schemes in Uganda have been implemented

in swampy areas, e.g. the Kibimba, Doho and Olweny schemes, the wetlands framework constitutes a point of reference for many of the actors in this sector, as seen in Chapter 3.

Prior to the 1995 Constitution, successive administrations largely viewed wetlands as wasteland and consequently encouraged their drainage and conversion into cultivated land. When Museveni took power, wetland drainage was banned in 1986. Uganda then quickly ratified the Ramsar convention on wetlands in 1988. The national policy for wetlands was adopted in 1995, while wetlands were enshrined in the Constitution and incorporated in the National Environment Statute in the same year – the latter also establishing guidelines for a new National Environment Management Authority (NEMA). In 2000 the National Environment Regulations were also introduced.

The policy-making process for these frameworks not only involved cooperation agencies, but also major actors in nature conservation, such as the IUCN (International Union for Conservation of Nature), with several initial goals to achieve sustainability: “to halt the destruction of wetlands”, “to curtail the devastation of wetland resources” and to “provide the basis for environmentally sound management and rational utilisation of the wetland resources” (Republic of Uganda 1995b: iii). This legal framework defined wetlands as in the Ramsar convention. The influence of the Ramsar convention on wetlands policy is demonstrated in the national policy for wetlands: “It is also an international responsibility of government to conserve wetlands and sustainably utilize them under the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitats, of which Uganda is a signatory and Contracting Party” (Republic of Uganda 1995b: 3), or again: “Government will continue to promote her participation in the Convention on Wetlands of International Importance especially as Waterfowl Habitats (Ramsar 1971) and other conventions and treaties which are related to wetland conservation including designating more areas as wetlands of International Importance” (Republic of Uganda 1995b: 8). Moreover, the 1995 National Environment Statute also states that international conventions and treaties ratified by Uganda shall “give the force of law in Uganda”, and if necessary “amend any enactment other than the Constitution for the purpose of giving effect to the convention or the treaty”, and “make such other provision (...) for enabling Uganda to perform its obligations or exercise its rights under the convention or treaty” (Republic of Uganda 1995c: 58). Consequently, the dominant vision contained in the Ugandan wetlands’ framework is a direct product of transnationalising international treaties and frameworks related to wetlands.

Furthermore, as part of the same mindset, the wetlands framework also introduced mandatory Environmental Impact Assessment (EIA) for any project that could disturb the ecological and hydrological system of any wetland. Conservation was thus the hegemonic paradigm of this framework – reflecting its growing international importance at the time – as it forbids any activity on wetland that could lead to permanent construction, drainage and any disturbance of ecological and hydrological functions. In this respect, the framework for wetlands is also closely linked to the conservationist vision of the environment, implemented by the Convention on Biological Diversity also ratified by Uganda. Therefore, during the first decade of Museveni’s leadership and in the wider context of the rise of “sustainable development”, the “environment became highly profiled”, as stated by the Assistant Commissioner at the Wetlands Management Department (Interview, 08/11/17).

Nevertheless, institutional fragmentation between distinct sectors – and more particularly the water sector – led to wetlands-related public and policy actions being highly dependent on external aid and, therefore, on fluctuating funding since the latter has remained project- and program-based since then. Consequently, although environmental concerns reached an unprecedented global peak in the early 1990s, their integration into the greening of the economy led bodies such as the Ugandan Wetlands Management Department of the MWE to have to cope with poor levels of funding compared to the wide scope of their activities and mandates directly related to environmental conservation and management. Limited staff coupled with limited budgets forced the Ugandan institutions to continuously seek donors and projects as well as opening a window of opportunity for a few individuals to build careers based on the internationally prevailing approaches, as illustrated by the case of Paul Mafabi, who “has been the long standing champion of wetlands and the WMD [Wetlands Management Department, created in 2008 by a merger with the pre-existing Wetlands Inspection Division]” (Langan & Farmer 2014: 29), as illustrated by the figure below:

ARCOS NETWORK

WHO WE ARE WHAT WE DO HOW WE DO IT WHERE WE WORK SERVICES RESOURCES

Mr Paul Mafabi

Mr Paul Mafabi has been involved in wetland management for the last 16 years and has spearheaded the development of the Uganda National Wetlands Policy the first of its kind in Africa. His work has raised the profile of wetlands in Uganda from being considered as wastelands to important natural resources for national development and poverty reduction.

Mr Mafabi rose from the level of Project Manager in 1989 to Assistant Commissioner for wetlands in 1999. During his tenure as Assistant Commissioner, he helped to establish the Wetlands Inspection Division from scratch and steered the Division towards the adoption of a 10 year Wetlands Sector Strategic Plan (2001-2010). This resulted in the inclusion of wetlands in the Poverty Action Fund as the first natural resource to benefit from this competitive funding source. Mr Paul has had international exposure through participation as Vice Chair of the Standing Committee of the RAMSAR Convention on wetlands from 1999 to 2002. He has also served as a Member of the Board of Directors of Wetlands International from 2001 and Regional Vice Chair and Special Advisor for IUCN Commission on Ecosystem Management. He successfully coordinated the ninth Ramsar Conference of the Parties in 2005 and was subsequently selected as the Chair to the RAMSAR Convention Standing Committee for 2006-2008. He is now the Director of Environment at the Ministry of Water and

POSITION Vice-chair

COUNTRY Uganda

Environment, Uganda

*Figure 29: Biography of a top civil servant*

*(Accessed online, 07/02/19: <http://arcosnetwork.org/en/team-member/paul-mafabi>)*

Moreover, the question of wetland ownership appeared to be rather sensitive, as seen in previously in Part I, highlighting the somewhat hidden and strategic issue of land posed by the terms of the framework for wetlands as drawn up under Museveni’s regime. Indeed, the framework for wetlands is indirectly linked to land management, as it introduces unprecedented wetland ownership status. Indeed, according to the Constitution, “Government or local government shall continue to hold in trust natural lakes, rivers, wetlands, forest reserves, game reserves, national parks and any land to be reserved for ecological and touristic purposes for the common good of all its citizens” (Republic of Uganda 1995a). This principle is reaffirmed in other policies such as in the National Environment Regulations, which also specify that “Government or a local government shall not lease out or otherwise alienate any wetland” (Republic of Uganda 2000: 4). However extensive uses of wetlands, such as fishing, cattle grazing, fetching domestic water or materials for craft activities for example. are legally permitted, qualified as part of the framework of communal uses or traditional activities. As the government was losing control over land in general terms – with the new 1995 Constitution, a result of a political struggle explained in the following section –, being a trustee of areas whose ecological vulnerability was highlighted by rising environmental concerns meant it could maintain a certain level of control over some land. This decision was justified in the national policy for wetlands as such:

Wetlands have been in many instances referred to as “wastelands”. In order to elevate wetlands from this status and to recognize them as a useful resource, there is need for the Government to continue having control over their management until such a time that developers have understood the role and importance of wetlands in the environment. (Republic of Uganda 1995b: 5)

Indeed, this policy also states that wetlands cover about 10% of the country – though such estimation appears uneasy given the significant trend of encroachment for cultivation. On the one hand, this control over wetlands was strengthened through communication campaigns, government officials and local government officers often using inaccurate vocabulary regarding wetland ownership, introducing the government as an owner rather than a trustee, as illustrated by numerous newspaper articles, for example:

the commissioner for Wetland Management, said what is happening in Ggba-Munyonyo will be reversed. “All the titles that were issued after 1995 will be cancelled and the owners will not be compensated because they all know wetlands belong to the Government”, he said. “In fact, about 17,000 titles are all set to be cancelled and some of the owners have been informed”. Cabinet ordered that all the titles issues on public land must be cancelled and all the wetland must be mapped. (...) Asked about the likely suits from people who got land titles legally, [he] said there will be no compensation. (Saturday Vision 2017)

This article also highlights the sensitivity of such matters in relation to Kampala city, since wetlands over which the urban area spread have significant value on the real estate market. Moreover, the issue raised in the article about wetland titles is long-term, often covered in the newspapers, highlighting the importance of politics and power in this question. It also illustrates the sensitivity of such questions, and provides more background to the issue of part of the transformed Okile swamp being legally owned by the local well-known elder we interviewed. Nevertheless, the abusive ownership terminology used by civil servants is described by the Assistant Commissioner at the Wetlands Management Department in an interview (08/11/17) as follows:

It is a problem of perception because the legal framework is very clear. (...) It is a wrong perception, not necessarily deliberate. They confuse having a mandate over with owning it.

Also, although the population was generally aware of agricultural activities being forbidden in wetlands, the inability of decentralised agencies to actually carry out monitoring and regulatory activities led people to increasingly encroach on wetlands (Langan & Farmer 2014). Wetland user permits, for instance, were mostly allocated according to the goodwill and availability of Environment District Officers, and probably also subject to bribery and clientelism. Consequently, decentralised agencies were expected to play a key role in order to implement the framework for wetlands, but lacked the means to do it. Therefore in Uganda wetlands tend to fall into the category of *de facto* open access resources, as analysed in Chapter 2, while regulations supposedly applied by decentralised agencies combined with

mainstream communication on wetlands, created the paradox of the presence/absence of state. Moreover, since, under Museveni's leadership, Uganda was taking the neoliberal pathway, disregard for land tenure systems outside privatisation concerned wetlands as well, as illustrated during an interview (06/11/17) with the Director of the Directorate of Water Development<sup>99</sup>:

Wetlands those days they are gone because they are not owned by anyone, so anyone would go and do things.

On the other hand, the ownership status of wetlands raised the issue of their demarcation. Once drained or under cultivation, wetlands tend to lose their ecological characteristics over time and become drier. In the 1990s the rice boom and irrigation schemes were directly incriminated, as the national policy for wetlands of 1995 states that "New [rice] schemes have tended to make people copy such massive drainage and this has led to adverse effects" (Republic of Uganda 1995b: 6)<sup>100</sup>. Consequently, on the one hand owners or users from adjacent land are expected to preserve the ecological boundaries of wetlands, while, in 2000, the National Environment Regulations introduced the concept of protected zones in relation to riverbanks and lake shores – also held in trust for the people (Republic of Uganda 2000: 11-14). On the other hand, the National Environment Statute of 1995, like the National Environmental Regulations of 2000 also highlights the need to conduct inventories of wetlands, riverbanks and lake shores. The implementation of such policies was also hampered by lack of means. Moreover, the cases of the Olweny and Agoro irrigation schemes also illustrated how environmental regulations were instrumentalised in attempts to control land and build on state authority with the "land titling" case or injunctions from MWE staff in the Agoro scheme to remove any indigenous system for diverting water, as described in previous chapters.

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<sup>99</sup> With strengthening relationships between the water industry and international donors at the time, and the generalisation of a neoliberal vision of natural resource exploitation, misconceptions about common-pool resources – confused with open access resources – were also regularly found within the dominant approach promoted by donors or state agents. Such confusion also contributed to reinforcing the liberalisation and privatisation of resources in Uganda, as illustrated by Karin Wedig regarding the Lake Victoria fishery industry (Wedig 2018).

<sup>100</sup> The same policy also refers directly to rice cultivation in terms of wetland-related problems, highlighting links between rice growing and wetlands, as it states that "Large areas of monoculture, such as rice growing, are always susceptible to pest invasions" and that "When people come into increased contact with static and non-purified water, as in rice-growing (...) an increase of the incidence of bilharzia infections can be expected" (Republic of Uganda 1995b: 2).

Finally, the new ownership status of wetlands illustrates the issue of disputed control over land as stated by the national policy for wetlands:

All future land tenure documents including maps and layouts will indicate whether the area contains a wetland and will accordingly exclude these wetlands from tenure. (Republic of Uganda 1995b: 6)

Wetlands belong to the public but contrary to what might be expected from this ownership status, the Uganda Land Commission has often leased wetlands. Government consequently lost control of any protective or conservatory requirements. (Republic of Uganda 1995b: 6)

The previously-mentioned case of the local well-known elder who possesses a freehold title covering part of Okile swamp, illustrates the issue faced by the government, since leaseholds granted by decree under Idi Amin's regime could be converted into freeholds according to the new 1995 Constitution. However, since this contradicted the new legal environmental framework, individuals with bargaining power and awareness of the law could use the state framework to their advantage, and obtained freehold over wetlands – an issue often covered on the front pages of the main newspapers. Cases of land titling by the self-styled Arch Design Ltd. technical team, or the injunction from MWE staff to the Water Users Association of the Agoro scheme to remove any indigenous water diverting system, also illustrate such issues.

In conclusion, the creation of the legal framework for wetlands illustrates a strategy of transnationalising international treaties and frameworks, such as the Ramsar convention and the Convention on Biological Diversity, which appeared to be dominant. Indeed, at this time the Ugandan state was going through the process of (re)construction and normalising, thus seeking international financial support. Embracing such an approach to the environment led to the adoption of a rather conservation-orientated ideology with respect to resources then perceived to be vulnerable, such as wetlands, which for instance resulted in the initial Olweny scheme design. Moreover, it also placed the newly developed institutions for wetland management under high levels of donor dependency, as they became the principle, but inconsistent funders of the sector. The institutions thus appeared weak with low influence and capacity for action, although they had barely existed. In this light, land issue became even more significant, as struggle for land control – which was found at the heart of great struggles for power, as we have seen in Part I and as later further highlighted – including the struggle over wetlands which provided bargaining power for the new but weak wetlands management institutions for, and for other actors alike.

### 2.3. Adopting dominant tools for the water sector

This subsection focuses on the creation of the legal framework for water. The previous subsection described how the unprecedented framework for wetlands led to weak Ugandan institutions as the fact of adopting a conservationist approach led to inconsistent and low funding compared to other sectors. On the contrary, the transnationalisation of the legal framework for water materialised mostly thanks to the adoption of the dominant tools – such as the Integrated Water Resource Management (IWRM) concept, whose rise will be examined later – as well as its placing the sector in a well-supported water privatisation industry, as we will see first. This resulted in the creation of rather powerful institutions for water management that will be described afterwards – which, as shown in Chapter 6, had a large impact on public action and policy with respect to irrigation.

Since the period 1981-1990 was declared International Drinking Water Decade – now known as the First Water Decade – the normalisation of the Ugandan state led international donors to introduce and support the development of a water-related legal framework, mostly related to the dominant paradigm and priority of the time: access to drinking water as a basic human need integrated into private sector management. For instance, the 1999 National Water Policy details the policy formulation context as focusing on the objectives of the International Drinking Water Supply and Sanitation Decade which “have been endorsed by the Government of Uganda” and, reflecting donors’ targets, introduces water for sanitation as the priority of the water sector (Republic of Uganda 1999: 5). The National Water Action Plan and Water Statute were eventually adopted in 1995, followed by a National Water Policy in 1999. Like the new wetland management framework, this framework for water management uses approaches and concepts specific to the greening of public policies/actions, and is equally internationally-oriented.

For instance, the *Uganda Water Action Plan: International Aspects*, published by the Ministry of Natural Resources, Directorate of Water Development, in 1995, emphasises the history of Nile water management at a regional level and the impact of the concept of integrated resource management on the new Uganda water policy, and the 1999 Water Policy, which states that it “promotes a new integrated approach to manage the water resources in ways that are sustainable and most beneficial” (Republic of Uganda 1999: 1) and also enshrines the principle of “polluter pays”. Moreover the 1999 policy states that



the declaration and guiding principles emanating from the international forums on water resources management, which culminated in the UN Conference on Environment and Development (UNCED) in Rio de Janeiro (June 1992), have been endorsed by the Government of Uganda, especially chapter 18 of Agenda 21 on freshwater resources. (...) The new mode of thinking on improving water resources management, endorses an integrated, multi-sectoral approach in the prevailing socio-economic context including (a) treating water as a social and economic good ; (b) relying on markets and prices to determine water allocation among various sectors and users groups; (c) involving the beneficiaries and the private sector in managing water at the lowest appropriate level; and (d) recognising that water is a finite resource that contributes to economic development and supports natural ecosystems. (Republic of Uganda 1999: 5).

Such integration of the private sector into the water sector, alongside institutional reforms, reflects the globally dominant dynamic of neoliberalism then also being promoted by international financial institutions for the water sector. Indeed, while increasing the importance and role of the private sector in the water sector was a focal point of aid at that time, actors such as the World Bank did not immediately endorse the new paradigm formulated in the 1990s by the water community: the IWRM (Integrated Water Resource Management), although the rapid rise to prominence of this approach was highlighted by its endorsement within Uganda's first water-related policies<sup>101</sup>. The World Bank in particular did not show much interest in such an approach until the late 1990s, having first highlighted the importance of institutional reforms and then renewed commitment to investing in hydraulic infrastructure, including mega-projects (Grey & Sadoff 2006). The Bank then started supporting the IWRM approach in the 2000s, which could explain why, in Uganda, there has been a time lapse between the adoption of IWRM in water policies in the 1990s and current institutional reforms allowing the ministry to appropriate the concept.

The Integrated Water Resource Management concept finds its roots in a shift of paradigm in the water sector which came about in the 1990s. Indeed, from the late 19<sup>th</sup> century until the 1980-90s, most approaches to water management gave priority to engineering. Developing large-scale hydraulic infrastructure was at the core of many states' strategy to deal with water issues, as occurred in the USA from the 1930s, reaching a peak worldwide after World War II (Molle 2009). The IWRM concept had its origin mostly in the awareness of countries from the Global North of the unsustainable nature of their hydraulic (over)development (Allan 2006). From this realisation, fears of a water crisis increased in the 1990s, leading to the development of a community concerned with water epistemology, dominated by countries from the Global

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<sup>101</sup> See among others Christian Bouquet (2012) for an overview of the challenges of transferring the IWRM concept to Sub-Saharan African countries.

North, that changed the paradigm. The political ramifications of affirming the existence of such a water crisis were ignored: indeed, issues of water supply and sanitation, the global food crisis, the degradation of aquatic ecosystems and political instability are more closely related to governance than depletion (Trottier 2008). Moreover, the prevalence of neoliberal ideology in the formulation of IWRM principles in Dublin in 1992, coupled to the adequation of those principles with the social and ecological contexts in the Global North, led to the specific characteristics of countries in the Global South being ignored (Julien 2012, Bouquet 2012). Such gaps were not addressed and, therefore, important questions were raised about the rightness of transferring water reforms to distinct socio-historical contexts (Mostert 2009). The IWRM concept has since then been described using a religious metaphor by many authors. For instance, François Molle (2012a) qualifies it as a “nirvana concept” transforming black into white, committing itself to solve contemporary issues, the key being more about believing in its existence and finding the way to achieve it or, at least come close to doing so. Such analysis recalls the one proposed by Gilbert Rist (2013) about the “development” concept.

Nevertheless, in order to face the “water crisis” that was diagnosed in the early 1990s, IWRM was introduced as the only way to rationalise the use of water resources, although its definition was confused – indeed, there is hardly any unanimous definition of the concept. According to the Global Water Partnership, IWRM relies on the application of the “sustainable development” concept to the water sector: taking into account the various uses of water in order to optimise the contribution of water to the realisation of social, economic and environmental objectives (GWP 2005: 1). The concept appeared to be an indisputable, universal and technical solution, which quickly became a dominant paradigm, seemingly consensual and widely promoted during the 1992 Rio Earth Summit (Conca 2006, Warner et al. 2008, Julien 2012, Molle 2012a):

[IWRM became a] discursive framework for international policies relating to water – the reference point to which all other arguments eventually rallied. Just like the ubiquitous idea of sustainability, IWRM is intuitively reasonable, is based upon technical authority, and is so flexible as to be almost vague.<sup>102</sup> (Conca 2006: 126-127)

Despite a weak empirical demonstration of its success, IWRM spread throughout the world as a dominant concept, initially promoted mainly by donors and NGOs, then eventually by international financial institutions. Indeed its implementation was widely promoted by the

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<sup>102</sup> Translated from the French.

prominence given to the private sector and water users in the adoption of the necessary reforms. This also contributes to a managerial vision of conflict resolution rather than criticism of the political nature of resource management (Molle 2012a). Meanwhile, in Uganda, the former Ministry of Natural Resources was reorganised into a Ministry of Waters, Land and Environment. A parastatal, semi-private institution was created to manage water for sanitation: the National Water and Sewerage Corporation. Eventually, the ministry was restructured again, splitting in the 2000s in the Ministry of Water & Environment (MWE) and the Ministry of Lands, Housing and Urban Development (MLHUD). These reforms and reorganisations thus led to the creation of a water sector that was influential – influence also reflected in the MWE responsible for it – as well as receiving significant funding, promoting donors’ priorities and ideas over other basic needs, as illustrated in the interview with the Assistant Commissioner at the Wetlands Management Department, or during an interview with the Commissioner at the Water Resources Planning and Regulation Department:

From late eighties, nineties, water was supported heavily by DANIDA [Denmark’s development cooperation]. (...) At some point, they [the water sector] wanted to have their own ministry, to create a Ministry of Water only. (...) Since the nineties water has been indeed well facilitated. Environment, they have their own donors, it is much less supported now. (...) The water sector, they have the funding so they have the money. Since they have the money, they have power and influence. (Assistant Commissioner at the Wetlands Management Department, 08/11/17)

They [DANIDA] are the pioneers, they are historically involved since 1992 even. The reason why it [water sector] is attractive is because we create strategic approach for stakeholders, collaboration and dialogue. And for resources mobilisation, maybe too. (Commissioner at the Water Resources Planning and Regulation Department, 08/11/17)

Consequently, funding also proved to be inconsistent, particularly during periods of political campaigns, since it was tied to donors, a trend that the government aimed to counterbalance through increased domestic funding (Wokadala *et al.* 2011). The privatisation of the water supply and the development of a water sector relying on the private sector were in line with the structural adjustments being conducted at the time. The emphasis on the sustainability of water management within the new legal framework responded to the need to normalise the state and attract support from the international community, accurately described in those terms by François Molle with respect to IWRM:

IWRM has thus become a sought-after discursive commodity which is, as a consequence, open to misappropriation by states or private interests seeking to legitimise their approach (...) and who discover that they can have widespread recourse to it at little cost. (...) The conventional interpretations of IWRM have often tended to depoliticise the debate, by presenting the problems

as being able to be resolved by neutral, rational approaches, by expertise and by administrative responses from the state.<sup>103</sup> (Molle 2012a: 43)

However with the priority given to water for sanitation in the 1990s, tools such as the integrated resource management approach were set aside until the 2000s – for instance, the institutional split between water for development and water management did not come until 1997. Nevertheless the ability of MWE civil servants to adopt the codes, norms and practices of the development industry turned out to be significant in the ministry’s historical development as highlighted in the interview with the Commissioner at the Water Resources Planning and Regulation Department, or during an interview with a Senior Programme Advisor at DANIDA:

We changed the approach from “just go and construct” to integrated catchment area approach. We’re moving a step further now. That was because pressure from people, pressure from donors. For a long time donors have refused to give money for irrigation or dams because [integrated catchment area approach] was not there (Commissioner at the Water Resources Planning and Regulation Department, 08/11/17)

The quality of reports, proposals they [MWE’s water sector Directorates] write... Donors feel comfortable when they have a partner like this, easy to work with. And for the water sector, the outputs are very clear: did they construct the valley tanks, the boreholes? It is easy to see what has happened. (Senior Programme Advisor at DANIDA, 10/12/17)

Such statements illustrate how the successive ministries responsible for the water sector developed the capacity to attract mandates and donors over time. Moreover, the MWE shows how it turned donors’ interests to their advantage and capitalised on it by presenting themselves as an influential and vital partner.

Finally, the 1999 National Water Policy established the Directorate of Water Development as the lead agency to run most of the water-related programme. As for irrigation, the 1999 National Water Policy gives a few guidelines on water for agricultural production as a means to “mitigate effects of adverse climatic variations on rain-fed agriculture” (Republic of Uganda 1999: 2). Indeed the 1999 policy introduces dependency on rain-fed agriculture as being responsible for food shortages, and points out that the “potential for irrigation estimated at 400,000 hectares has not been significantly developed, and only small-scale irrigation e.g. of paddy rice is practised in the east and north-east of the country” (Republic of Uganda 1999: 23). The policy therefore made the ministry of agriculture, the MAAIF, responsible for

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<sup>103</sup> Translated from the French.

“planning, advising, supervising and monitoring the management and use of irrigation and livestock schemes” while the Directorate of Water Development would “provide the technical advice in the planning, design, construction, and maintenance and operation of the hydraulic works” (Republic of Uganda 1999: 26). As in the water-for-sanitation sub-sector, the policy established a model where users are expected to pay for services provided by the schemes through users’ associations. Moreover, the policy states that:

in case of hydraulic works for medium and large scale irrigation systems financed by the Government, the system ownership will be retained by the Government (because of the investment involved) but the operation and maintenance will be the responsibility of the Users (...). However, the ownership of these large schemes shall also be gradually transferred to the User Associations. (Republic of Uganda 1999: 27)

These different statements would lead to several issues. First, the boundaries in terms of scope of mandates established between the MAAIF and the Directorate of Water Development were subject to balances of power between the two bodies, when the irrigation sector boomed a short time later. Second, not only did the ownership of irrigation schemes as established in the policy remain vague, but also it would not be the subject of further clarification or development. As interest in the irrigation scheme sub-sector has recently increased, these issues would prove to be of major importance, as will be seen in Chapter 6.

In conclusion, establishing legal frameworks for wetlands and water – that covered irrigation schemes – was at the core of state-building dynamics as they embraced the donors’ hegemonic visions of this period. More particularly, as Museveni’s first decade in power coincided with a global change in paradigms, between the end of the Cold War and the Earth Summit in Rio de Janeiro. The 1990s was marked by the production of numerous international treaties and frameworks leading to a redefinition of “development” in a neoliberal form based, on the concept of “sustainable development”, driven by economic growth. Many of these international documents were integrated into the Ugandan state-building process. Transnationalised legal frameworks thus reflect the dominant paradigms, whose unequal funding and donor dependency shaped the renewed Ugandan institutions and their actors. While establishing a framework for wetlands led to rather weak institutions, institutions for water management significantly expanded. Out of this new institutional configuration, marked by constraint linked to extraversion, power balances developed, exacerbated by numerous strategies to gain bargaining power, as will be seen in the case of the more recent irrigation sector.

### 3. POWER STRUGGLES IN REFORMING THE LEGAL FRAMEWORK FOR LAND

This section analyses how land reform proved to be a long, conflict-ridden process, characterised by a variety of serious issues, affecting a number of different actors – in a rather different fashion from the making of the legal frameworks for wetlands and water. Indeed, the absence of references in the interviews suggests that the drafting of the latter, of little importance prior to Museveni's era, did not lead to many power struggles. Nevertheless, being the foremost economic resource in an agrarian country, land appeared to be greatly disputed at the highest levels, thus mirroring the dynamics highlighted in Part I.

Political struggles appeared with the abolition of Idi Amin's decree, which implied a redefinition of the status of land. The first section shows how the position of international financial institutions with respect to promoting freehold provided a particular window of opportunity for various actors, who will be identified, to use the reform process to their advantage. The second section describes the creation of a new legal framework for land by focusing on the various power struggles that it fuelled, and their outcomes. Since land as a resource is intimately linked to agricultural practices, and even more so in the context of agrarian societies, this section thus indirectly highlights the role of agricultural policies – or rather their absence – as a consequence of the ideological orientation taken by land reform in neoliberal Uganda.

#### 3.1. Disputing land and withdrawing from agriculture

This subsection explores some of the politics of land in order to introduce the context in which political struggles appeared out of reforms of the land framework under Museveni's leadership. This will allow us to better understand the impacts of neoliberal ideology on land resource management in the context of extraversion, and finally how this configuration shaped agricultural policies in the first decade of the NRM government. Indeed, we will demonstrate, on the one hand, the multi-level and multi-actor dimension of land control. On the other hand, it will highlight how the weakness of the MAAIF, as demonstrated in the irrigation schemes, was rooted in the political disruptions of the shift to neoliberalism.

Indeed, since the period of colonial rule, control over land had been tied to political action, contributing to the creation of an ethnically divided country, since establishing a single land tenure system was not on the colonial agenda by then. This changed after independence when successive governments aimed to unify both the country and land management. By then, control over land had been linked to the exercise of political power for several decades. During this time, clientelism and patronage networks grew around land policies: what had been intended as the welfare state, which was meant to control the resource, became more of a predatory state (Gay 2016: 147-148). By the time Museveni took power, most of the land was in fact managed through a multiplicity of tenure systems said to be “customary”, whose rules varied from one place to another as highlighted in Part I. Meanwhile at the top level, Amin’s 1975 decree nationalising land gave the state authority over the resource with leasehold being the only legal title. Indeed, since independence legal pluralism with respect to land has only intensified.

Nevertheless, the first economic reforms introduced by the new NRM government did not embrace liberalism. While land insecurity was perceived as a problem for reconstruction and economic recovery by slowing down agricultural production, the government did not initially link land insecurity to the land tenure regime, but rather to generalised on-going violence. Museveni therefore aimed to stabilise social dynamics upset by conflicts, and to preserve alliances made during the Bush war – mainly with the Buganda kingdom, the largest landowner in the country (Perrot 2003, Gay 2016). Then the shift to liberalism led to accepting the discourse promoted by the IMF that land security led to economic growth through freehold tenure (Le Roy *et al.* 2016). This ideology is integrated into liberalism, as land is perceived above all as an economic asset, requiring privatisation to boost agricultural production:

The early 1980s saw the promotion of new agricultural policies and land tenure reforms oriented towards economic development. This was during the first decade of neoliberalism in Uganda. To international consultants, the driving factors behind land law reform should be facilitation of agricultural modernisation geared towards economic development, not least to diminish Uganda’s donor dependence. (Nakayi 2018: 272) <sup>104</sup>

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<sup>104</sup> Rose Nakayi continues her statement as follows, pointing out a problem that this thesis contributes to answer to some extent: “if constitutional and legal reforms were mainly driven by the argument of a need to promote agriculture, how effective or appropriate would they be to address other issues such as conflicting rights on land, tenure insecurity and eviction of subsistence agriculturalists by large-scale commercial agriculturalists?” (Nakayi 2018: 272).

Such thinking also led international donors to abandon agricultural development policy, the latter being expected to be private sector-driven through the spread of freehold land. Consequently, structural adjustment plans were based on the belief that liberalising the economy would lead to increased agricultural production, thanks to private sector development and to integration of rural producers into wider free markets – a dominant paradigm among international financial institutions (Rist 2013). Therefore agriculture has been left out of policies' priorities for about a decade, not only in Uganda, but by the development sector more generally. Promoting irrigation as a means of fighting poverty and food insecurity was set aside by international aid to the benefit of liberalising the agricultural sector together with trade globalisation. Many countries from the Global South, whose economies opened up to international markets under the structural adjustment plans, became increasingly reliant on those markets to ensure their food security. Taking rice for example, dependency on exporting countries – mostly Asian – developed to a varying extent, often leading to the abandonment of domestic production that was much less competitive than imported rice (Lançon 2012). In a world in which urbanisation and population were growing significantly, rice was becoming a strategic cereal, especially for countries in the Global South to which it represents a foodstuff that is as easily stored as cooked.

It is worth recalling that at this time, rice was also a booming crop in Uganda, although outside any planned policies, especially in the context of structural adjustments that excluded the state from agricultural policies – as seen in the previous chapter. Moreover, in Uganda, this trend toward agricultural liberalisation was also illustrated by the restructuring of public institutions previously responsible for agricultural matters. The MAAIF thus results from the merger of three distinct ministries in 1992, as encouraged by the World Bank. The new ministry then went through a period of severe budget cuts, loss of numerous mandates over ventures which were being privatised, or over co-operative monitoring for example. Reforms also focused on private sector development by disengaging the MAAIF – previously state-led – from most of its previous activities as parastatal production boards, since the ministry was assumed “incapable of implementing the new order” defined as “wide-spread agricultural sector liberalisation” (Bategeka *et al.* 2013: 4). As agricultural policies were therefore set aside – to the benefit of land reform and agricultural sector privatisation – pressure from international financial institutions led to land reform at a time when Museveni was building legitimacy by incorporating the opposition, and suppressing chiefdom-based hierarchies.



Therefore, a window of opportunity opened in the political arena thanks to land reform (Gay 2016: 183-184).

In conclusion, controlling land appears to have become a major issue since independence, as successive governments aimed to control the country's most important economic asset in order to ensure legitimacy and authority. The policies thus developed alongside legal pluralism on the ground, due to significant resistance mechanisms, as seen in Part I. Nevertheless, embracing donors' views also forced the NRM government to embark on land reform, since neoliberal orthodoxy with respect to the land resource relies on freehold tenure and integration into the market. Indeed, according to the prevailing land-related paradigm, this would provide security over land thus attracting private investment and leading to market integration and the much sought-after economic growth. In the agrarian societies that are widespread in the Global South, this ideology also led donors to withdraw from agricultural policies, set aside to the benefit of agricultural privatisation and the free market. Meanwhile, international financial institutions indirectly imposed this withdrawal on countries implementing structural adjustment plans, by liberalising the agricultural sector and drastically cutting budgets and institutional mandates with respect to agriculture. In Uganda, this proved to be the MAAIF's downfall, since the country had inherited significant institutions for managing agriculture from previous political orientations.

### 3.2. Struggling with donors and opposition

This subsection briefly explores the trajectory of land reform under Museveni's leadership, in order to introduce the main actors involved and to demonstrate the importance of the issue of control over land. Indeed, this issue became even more significant for the NRM government, since the outcome of reform represented a political loss for the ruling party.

The land reform process began in the early 1990s. Led by a few actors behind closed doors, it was dominated by the ideological influence of the World Bank, perceiving land insecurity as an economic issue and favouring a technocratic approach. As part of the latter, freehold titling was introduced as the solution to the economic crisis. This approach therefore "ignored local actors' claims to power, by taking land out of its social and political orbit, retaining only the

technocratic and economic aspects”<sup>105</sup> (Gay 2016: 218). It therefore aimed to unify land tenure by generalising freehold, while the NRM aimed to benefit from this change by reinforcing state domination<sup>106</sup>.

Nevertheless, the land reform process was then cut short by the process of drafting the Constitution, which put the Odoki commission in charge of the land chapter. This time, the process opened land reform to many actors, involving public consultation to increase legitimacy, and making land reform a more inclusive, open process. Land was thus restored to its social nature, as the grievances collected from around the country showed people’s preference for customary tenure systems (Gay 2016). The result of widely-conducted consultations was presented in the Odoki commission’s draft. However, in 1992 the Odoki commission’s final conclusions favoured the pro-freehold direction that land reform had been taking before work started on the Constitution. This conclusion was accompanied by political compromise in the form of restoring traditional and cultural institutions, an unpopular decision that mostly benefited the Buganda kingdom<sup>107</sup>.

Finally, the Constituent Assembly was put in charge of adopting the land section of the Constitution, and once again drastically changed the orientation given to land reform. This assembly was dominated by representatives from the north and east – despite a few attempts by the NRM to control their election. Under the influence of these representatives and those from Buganda, a “new order” was voted based on the Odoki commission’s draft. In the end, the new Constitution recognises not only freehold and leasehold, but also customary land tenure, alongside the *mailo-bibanja* land tenure system specific to the Buganda kingdom. Although the freehold system promoted by the government was thus recognised as well, it represented a political defeat for Museveni, who invited the Prime Minister the following day to plan for amendments to the Constitution (Gay 2016). The 1995 Constitution therefore

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<sup>105</sup> Translated from the French.

<sup>106</sup> Indeed, as Lauriane Gay (2016: 291) explains, such change “preserves power asymmetries usually found in developing countries, where the poverty of the industry and services sectors pushes the state towards strong control over land resources (...) This control limits the political autonomy of other actors involved (...), such as traditional institutions and so-called ‘customary’ authorities” (translated from the French).

<sup>107</sup> This decision is indeed described as such by Lauriane Gay (2016: 310): “At the heart of a regime which built itself upon an anti-sectarian message demonizing traditional institutions, this restoration (of kingdoms) truly represented political compromises necessary to ensure the NRM’s survival and legitimacy” (translated from the French).

represents a major shift in terms of land orientation, as the state was no longer the owner of the country's land resources.

Although the 1995 Constitution indeed led the state to lose a certain degree of control over land by losing its ownership, it however remained vague regarding the new type of management such a shift would require for actual implementation. This open question put land reform back on the political agenda as early as 1996 with the drafting of the Land Act, the National Land Policy not being eventually published before the 2010s. In order to restore a certain level of state power, the NRM government aimed to impose formal state institutions at the core of land management, thus excluding customary or traditional institutions, once again promoting freehold and more generally titling rather than alternative solutions<sup>108</sup>. This attempt by the government to strengthen its control over land led to distrust on the part of the northern and eastern regions towards the NRM's public intervention with respect to land, especially in the context of the war against the LRA: "These actors confirm that the subject of land will no longer leave the political arena: the NRM government aims to steal communities' land in North and East"<sup>109</sup> (Gay 2016: 422).

Moreover, the World Bank's approach to land tenure was not questioned, nor was the strong link it establishes between private property and "development" – meaning economic growth. Finally, with the adoption of the Land Act in 1998, Museveni's government placed state institutions in charge of land management. This directly reflected the beginning of a trend toward authoritarianism and the President as the personification of power. As Museveni's leadership entered its second decade still following this path, the country continued to play the role of showcase of post-Washington consensus despite growing problems that required a continuous and increasing grip on power.

In conclusion, by opening the question of land reform the NRM government allowed a political debate to develop under pressure from donors. While the latter wished to impose a freehold

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<sup>108</sup> This is illustrated for example by the introduction of means to convert former leasehold into freehold title, or the creation of Certificates of Customary Ownership (CCO), whose adaptability to the customary tenure system was not questioned by any of the actors participating in the land reform process. Disputes did, however, arise when some programmes aimed to implement the land policy by issuing CCOs in Acholi sub-region. Indeed, by identifying and formalising rights over land, this process led to their dissociation from indigenous authorities (Gay 2016, Atkinson *et al.* 2016).

<sup>109</sup> Translated from the French.

system, the government's political opponents made their voices heard, appropriating the window of opportunity that had been opened in order to defend their own interests. This political struggle for land thus reflects the diversity of indigenous land tenure systems in Uganda, as well as the balance of power between the NRM government and its political opponents. This occurred in the midst of a neoliberal shift which could not be ignored due to pressures from the World Bank. The successive stages of land reform thus illustrated the power issues that were at stake, and the multiple strategies used by various actors to turn the process to their advantage. In the 1990s, Uganda finally became one of the first African countries to recognise a plurality of land tenure systems, although customary tenure appeared to be the most vulnerable: in fact, it became defined as existing only in the absence of the other systems. This constituted yet a political achievement for the northern and Buganda opposition, which to some extent secured land rights in their home regions, and a defeat for Museveni as the state lost control of land. Nevertheless, as the World Bank's approach was integrated into Ugandan land politics, this would later provide the NRM government with the opportunity to renegotiate land control through management rather than ownership. Indeed, since the beginning of the reform, control over land had remained at the core of power struggles at the highest level.

## CONCLUSIONS

This chapter has explored the creation of legal frameworks for wetlands, water and land in Uganda during the first decade of Museveni's leadership, when he put the country on the path to recovery. Museveni at this time initiated profound reconstruction of the state after a long period involving several crises. More particularly, this chapter aimed to understand, in the absence of a framework for irrigation, the making of legal frameworks that could act as reference points for irrigation schemes. We thus aimed to demonstrate how current power balances between the top-level actors involved with irrigation schemes form part of the contemporary Ugandan state-building process, and are grounded in a shift toward neoliberalism.

The first section thus explored how Museveni quickly accepted the donors' viewpoint in order to obtain access to conditional aid. Since the international context was marked by the end of the Cold War, and the associated advent of neoliberalism, this conditional aid took the form of structural adjustment plans, which would become generalised in Global Southern countries as a result of the Washington consensus. The structural adjustment plans reflected a renewed

approach to “development”, coming to rely upon principles of “good governance” and “sustainability” to achieve rapid, lasting economic growth. This resulted in state withdrawal, through privatisation of many public services coupled to liberalisation of the economy, combined with fiscal discipline.

Moreover, as seen in the second section, this led to the greening of environment-related policies through neoliberal paradigm. Changes in the global paradigm regarding resource management, resulting in the concept of “sustainability”, reinforced at the 1992 Earth Summit, were integrated into the legal frameworks for wetlands and water, thus illustrating the transnationalisation of international treaties and frameworks. This not only allowed the Ugandan state to be normalised, after a long period of marginalisation in the international arena, but also to gain support from donors by embracing the dominant ideologies and tools developed at the time. Nevertheless, donors’ priorities were then reflected in a distinct empowerment process of the political institutions involved. For instance, the new wetlands framework, endorsing the conservationist approach, led to the creation of a new department as well as the National Environment Management Authority. Nevertheless, varying levels of funding and inconsistency in the importance accorded to the sector left the relevant political institutions rather weak compared to others. On the other hand, the water sector had become a priority for donors since Museveni’s first decade in power, significantly empowering water directorates. As a result, the MWE has a strong, influential water component, while its environment component appears rather weak in comparison, with fewer staff, a smaller budget, and less bargaining power in decision-making. This partly explains the abandonment of environmental considerations in the rehabilitation of the Olweny scheme.

Finally, the third section showed how embracing neoliberalism forced the NRM government to embark on a land reform process, as international financial institutions applied pressure in favour of freehold. Unlike the transnationalised frameworks for wetlands and water, the donors’ viewpoint did not at first sight represent a political advantage for Museveni, since it provided an opportunity for the opposition to turn the reform process to their advantage. Indeed, power struggles appeared, illustrated by the various stages taken by land reform: at each stage strategies were deployed in order to gain control over land – a long sought-after objective. In the end, the fact that the Constitution enshrined the plurality of land tenure systems, therefore furthering legal plurality on the ground, represented a political defeat for Museveni. Moreover, it led the ruling party to look for alternative strategies to maintain a

certain power over land, this time through management rather than ownership, as illustrated by the political struggles that followed. Finally, another consequence of land reform was state withdrawal from agricultural policy-making. Indeed, since the prevailing paradigm focused on “development” through neoliberalism, the donors’ view reflected the belief that the integration of land into a liberalised political environment would lead to economic growth, boosting the agricultural sector. During the 1980s and 1990s agriculture was thus placed at the bottom of donors’ list of priorities. Moreover, structural adjustment plans for the agricultural sector drastically weakened political institutions, through major budget cuts, loss of mandates and the end of various former policies. The MAAIF was thus significantly weakened by the shift towards neoliberalism.

Consequently, during the first decade of Museveni’s leadership, state-building was a classic case of extraversion as Museveni quickly decided to rely on conditional aid for reconstruction. At a time of a new neoliberal dominance, international dynamics were directly reflected in the Ugandan state-building process, including the legal frameworks related to the management of natural resources such as wetlands, water and land. This political ecology of state (re)construction strongly shaped the return to agricultural policies and irrigation, as explained in the final chapter.

# Chapter 6: The Political Agronomy of Irrigation Schemes in the Authoritarian NRM-State Apparatus (1995-2019)

After the first decade of Museveni's leadership, Uganda thus became a "showcase of post-Washington consensus" (Wiegratz *et al.* 2018), where dominant paradigms are materialised in all sectors, including natural resources, as demonstrated in the previous chapter. During this decade, the lack of agricultural policies led to the substantial weakening of the MAAIF, while irrigation schemes were set aside. In this chapter, we will now analyse the return to irrigation schemes and their boom in more recent years. We thus aim to answer the questions raised in the conclusions to Part I regarding the underlying political issues that led to irrigation scheme design and implementation that was technocratic, top-led and dissociated from the reality on the ground.

This, however, requires us to approach the political agronomy of irrigation in the context of the convergence between, on the one hand, the political configuration inherited from Museveni's first decade – as analysed in the previous chapter – and, on the other hand, a trend toward authoritarianism that developed particularly during Museveni's second decade, allowed by a changing approach in the aid sector. This is the focus of the first section, which uses this background to explore the highly political return to public involvement in agriculture. The second section focuses on the FIEFOC programme, which marked the beginning of a new irrigation sector through the "rehabilitation" of the Doho, Mubuku, Agoro and, initially, Olweny schemes. The FIEFOC (Farm Income Enhancement and Forest Conservation) programme is analysed in order to highlight the issues underlying it at both national and international level, amid the world economic crisis and the political survival strategies developed by the NRM-state apparatus. The third section demonstrates how public involvement in irrigation is part of a wider strategy to develop new state resources for neo-patrimonial processes, in the context of a long legitimacy crisis and of an "inflationary patronage" we will define. In this way we aim to demonstrate the political nature of public involvement in irrigation, leading to top-level political interests prevailing over the actual impacts of irrigation schemes on the ground.

# 1. A RETURN TO PUBLIC ACTION FOR AGRICULTURE (1995-2006)

This section addresses several political developments – related to the NRM-state apparatus maintaining power – identified as, on the one hand, influencing irrigation schemes (first and second subsections) and, on the other hand, shaping the return to public action in agriculture (third subsection). We will thus see how the NRM-state apparatus faced a legitimacy crisis through the instrumentalisation of the war against the LRA (first subsection) and the decentralisation reforms carried out by the government under considerable pressure from donors. The third subsection focuses on the shift towards the “pro-poor” policies adopted by the government. We explore how this shift was encouraged by changing paradigms in the aid sector and led to co-construction of legitimacy and new agricultural policies. We thus show how these trends reflected strategies for Museveni to maintain his grip on power, by instrumentalising the shift in donors’ paradigms in order to deal with internal political challenges. This resulted in the return to public involvement in agriculture, on which the approach used in the FIEFOC programme would partially rely.

After a decade in power, the NRM regime was facing increasing public discontent. In 1986, the government benefited from a high level of popularity and credibility, basing its legitimacy on restoring security in the country – with the exception of the northern region, increasingly affected by the war against the LRA (ICG 2017). The country indeed entered its longest period of political stability since independence. The significant decline in violence as a method of political and economic regulation legitimised the political restrictions of the no-party system as well as the regime’s use of military governance (Perrot 2003). Nevertheless, although establishing democracy was one of the main pillars of the NRM’s programme during the Bush war, the no-party system imposed by Museveni continued, thus restricting opposition (Kasfir & Kraft 1999). Finally,

The legitimisation of the regime thanks to the introduction of a constitution in 1994 tightened the rules of the game which had hitherto remained fluid and temporary, and reinforced the monopolisation of power by the Movement system through constriction of the political arena and legal obstruction of the traditional opposition. (...) The 1996 elections clearly marked the decline of democracy and of the regime’s inclusiveness<sup>110</sup> (Perrot 2003: 425-426)

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<sup>110</sup> Translated from the French.



Although Museveni was elected President in 1996, discontent had reached a significant level, particularly among young people who questioned a legitimacy that had been acquired during the Bush war. More generally, while the regime was increasingly militarised<sup>111</sup> and the exercise of political power personified in the President (Perrot 2003), the majority of people felt left out of the country's development. On the one hand, inequalities were deepening despite the fact that economic reforms seemed to have kept inflation under control, allowing Uganda to achieve one of the highest and longest periods of economic growth in Africa at that time. On the other hand, regional disparities were reinforced, particularly with the disruption of the market for agricultural produce and the abolition of co-operatives. This was a situation that coffee producers, a minority located in south, coped seemingly better than the cotton producers, given the collapse of cotton world prices producers previously faced (Appleton 2001)<sup>112</sup>. These factors, among others, fuelled significant levels of discontent, stressed in the 1996 elections. Reacting to this general discontent and the beginning of a legitimacy crisis, Museveni deployed various strategies, skilfully playing off donors' constraints to deal with both internal political issues and the requirements of donors, as this section demonstrates.

### 1.1. Another facet of the war against the LRA

This subsection approaches the war against the LRA from a new perspective, by looking at how the conflict was instrumentalised by Museveni. Indeed, by negotiating the constraints on international aid he managed to direct part of the money towards the regime's growing militarisation and its subduing of the northern population, historically perceived as the opposition. As a reminder, most of the northern rebel groups, for example in the Lango and Teso sub-regions, signed peace agreements with Museveni's government after it took power; in Acholi, the war only intensified as time went on. In Part I, we have seen the impacts of the war against the LRA on social and political structures particularly in Acholi sub-region. One of

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<sup>111</sup> At that time the country's army was also very active, being involved in different theatres such as the Acholi sub-region, Rwanda and the Congo, with underlying political interests serving the government (Branch 2012, Prunier 1999, 2009, Perrot 1999).

<sup>112</sup> More particularly, "household participation in crop markets is limited. (...) Gross margins between local and district markets for most food crops are large, both absolutely and relative to cash crops. This fact alone would encourage self-sufficiency in food crops and trade in cash crops. Large margins and high transfer costs also imply a large range of positive prices that fail to cover transfer costs, increasing the risks of going to market when prices are uncertain. (...) Together these factors indicate that marketing food crops is riskier than marketing export crops, encouraging households to remain both self-sufficient and diversified in their production." (Larson & Deininger 2001: 202).

the main political issues at stake was highlighted: Museveni's aim of controlling a region that represented his main historical opponent, as reflected by northern opposition to Museveni's plans during the land reform process. This subsection then offers another reading of the politics of the war against the LRA: as Museveni was facing growing internal discontent, the war in the north allowed him to keep on demanding military aid from donors, to retain autonomy regarding Ugandan military campaigns and, thirdly, to deal with a population perceived as a threat to the regime (Mwenda 2010, Branch 2011, Atkinson 2018, Branch & Yen 2018). For example, between 1992 and 2010, the Ugandan military budget increased from US\$42 million to US\$260 million. Consequently, as this allowed internal militarisation with secured external funding, a significant proportion of the budget was kept from donors' eyes. Moreover, it contributed to consolidating the ruling power "by maintaining a state of fear in the south over the possibility of northern rebels coming to power" (Branch & Yen 2018: 78-79). Indeed, the political campaign for the presidency in 1996 was particularly hostile and aggressive towards the inhabitants of Acholi. As a result of this, only 10% of the electorate in Acholi voted for Museveni (Perrot *et al.* 2014).

This can be partly explained by the context since, during the 1990s, neoliberalism was penetrating Ugandan society thanks to the plans of the international financial institutions. The need to showcase Uganda was therefore directly seen in the management of the war-affected northern population by donors. As we have seen in the first chapter, involvement of the government was mostly military, withdrawing from its basic state functions in terms of providing services to its war-affected population. On the other hand, donors, first among whom was the World Bank, did not want to be involved in a conflict area. For the first two decades of the war against the LRA, the conflict was minimised or disregarded by the international community, while the World Bank "consistently either called northern Uganda a post-conflict situation or simply ignored the presence of continuing armed conflict" (Atkinson 2018: 60), thus indirectly funding the military spending that maintained and expanded a war that was ignored by the Bank. The official message promoted by the government, describing the war as being between "good" and "evil" was adopted, and even reinforced by the war on terror later promoted by the USA following the attacks on the World Trade Centre (Atkinson 2018: 63, Epstein 2017).

Consequently, neoliberal programmes, starting in 1992 with the Northern Uganda Recovery Plan (NURP) were quickly implemented in the camps to which the population was displaced

systematically from 1996, also contributing to the “construction of a security state and the prolongation of war and violence” (Atkinson 2018). Budgeted at US\$600 million and initially intended to reach 14 districts, including two in the Acholi sub-region alone, about US\$94 million had been spent by the end of the NURP I programme in 1997 (Dolan 2009: 4). The programme has been followed by others, continuing up to the present, among them NURP II, with added components in the form of the Northern Uganda Social Action Plan (NUSAF), the PRDP (Peace, Recovery and Development Plan) and PRDP-II. Nevertheless, these programmes have been marked by “inefficiencies”, “massive corruption”, “dubious projects”, “lack of oversight and politically motivated geographical expansion far beyond war-affected areas, diluting effects where they were most needed” (Atkinson 2018: 72). Such results were not, however, directly reflected in an increase in votes for Museveni in Acholi, as seen in the later 2011 and 2016 elections during which the NRM obtained 40% of votes – though still not equalling the national average of 60% (Atkinson 2018).

Nevertheless, the neoliberal programmes implemented in the camps had several effects and impacts. In addition to those described in the first chapter regarding cultural and social breakdown, others are related to the ideology promoted by the programmes themselves:

The same qualities that made the camps attractive to the Ugandan government – a concentrated, easily surveilled and controlled population – made them particularly attractive to aid agencies, as did Uganda’s status as a favourite of Western donors (...). By 2007, running the camps was costing donors US\$200 million per year as over 100 international agencies came to provide an entire rudimentary civil administration in the camps. (...) From the beginning, therefore, the aid agencies faced the challenge of controlling the displaced civilian population for the state and for their own operations, which they did by constructing a regime of disciplinary peacebuilding, conforming to a neoliberal social logic. (...) This turned from simply providing aid, to demanding the participation and active involvement of the supposed beneficiaries (...) by declaring war-affected populations responsible for bringing peace, justice and rehabilitation. (...) Peacebuilding’s logic erases the fact that violence in Acholiland is not caused by internal breakdown but by national and international structures of violence and inequality, in particular a state policy treating the civilian population as enemies and subjecting them to a brutal counterinsurgency campaign, supported by Western donors and aid agencies (Branch & Yen 2018: 81-82)

Therefore, common interests in the war significantly contributed to its continuation. On the one hand, Museveni, in a period of reducing legitimacy, ensured that a significant budget fuelled the increasingly required patronage system and militarisation of the NRM regime. This allowed him to gradually take a somewhat authoritarian path while controlling significant northern opposition. Meanwhile, the donors’ programmes allowed them to spread an ideology that they were heavily promoting at the time in a country where the acceptance of

early and significant structural adjustment plans made it a showcase in the eyes of the world. International financial institutions and donors therefore “reinforced the NRM’s rule for its capacity to ensure a sort of political stability, necessary for the continuity of reform” (Wiegratz *et al.* 2018: 14). Eventually,

Donors were able to maintain the fiction that their aid was going to a Ugandan regime committed to protecting the civilian population from the terrorist LRA. And the Ugandan government was able to maintain high levels of donor funding, which it could channel towards militarisation and towards networks of political patronage (...) while withdrawing further from responsibility to its population, relying on aid agencies to maintain a controlled population. (Branch & Yen 2018: 87)

However, such Western support finally reached breaking point as Museveni’s leadership entered its third decade, as will be shown later.

In conclusion, the legitimacy crisis emphasised by the 1996 elections led the NRM-state apparatus to deploy various strategies to contain the crisis and tighten its grip on power. As pointed out by many authors, the choice of a military solution throughout the war – constantly promoted as *the* solution by Museveni, who equally constantly undermined any initiative for peace (Dolan 2009) – thus appeared as part of a wider strategy to build on state authority. Seen in this light, the war against the LRA appeared instrumentalised, being presented to donors as a threat to the country’s newly found stability, which in turn allowed the exercise of power to be militarised. This contributed towards the building of an authoritarian regime – harshly affecting northern regions, as seen in Part I. This trend also relied on other dynamics, including the instrumentalisation of decentralisation policies, as will now be shown.

## 1.2. Instrumentalising decentralisation reforms

This subsection focuses on how decentralisation reforms were also used by the NRM-state apparatus as a tool to consolidate its authority, thus diverting donors’ attention towards political strategy to address the internal political issue of a legitimacy crisis. As the latter became more serious, Museveni and his government relied increasingly on patronage and clientelist networks to maintain themselves in power (Perrot 2003, Wiegratz *et al.* 2018). Indeed, as “the country became a star performer of liberal economic reforms, and, in the view of the World Bank and others, a ‘development model’ to be followed elsewhere in Africa” (Wiegratz *et al.* 2018: 12), decentralisation was a core element of the “good governance” concept promoted by the neoliberal regime. This dynamic was marked in the 1990s by a

period of state withdrawal from the provision of numerous services as intended by structural adjustment. Nevertheless in Uganda, as elsewhere, undertaking such reforms led to significant privatisation, reduction in budgets as well as the end of state monopolies, for example on marketing boards – as shown by the case of the MAAIF. One of the results of these measures was to drastically decrease the resources available to the state to continue its patronage (Green 2010). In the light of this, decentralisation opened a window of opportunity for Museveni to restructure the resources available for patronage in the name of “good governance”. Meanwhile, it allowed strategic control of both political opponents and reluctant voters thanks to the “divide-and-rule” policy which accompanied the creation of new districts, as accurately described by Kristof Titeka:

While the multiplication of districts creates the image of an empowered local level, the opposite occurs: instead of fostering political participation or empowerment, decentralisation is used as a tool by elites in place to entrench top-down existing political power configurations (Titeka 2018: 120)

Since becoming a district supposedly brings services closer to the population, with the construction of schools and hospitals for instance, such policies were rather popular as well. However, the creation of districts was accompanied by a “re-centralisation” policy in order to control the multiplying decentralised agencies, thanks to severe budget cuts and Chief Administrative Officers being appointed no longer locally but by central government. This meant that local government was *de facto* dependent on central government, which considers it as a potential threat and “void of any real power”, appointing leaders whose “main quality” is “their political allegiance to the NRM” (Titeka 2018: 116, Tripp 2010: 117). In this context, districts became a commodity in the political marketplace (Titeka 2018). These changes occurred in a context which saw the creation of districts gaining significant popularity, as it was supposedly accompanied by bringing public services closer to the population through the construction of local government headquarters. Electoral support was then openly expected from the population, as shown by the numerous presidential visits to new districts, as well as their creation being significantly timed to coincide with presidential elections (Awortwi & Helmsing 2014) and the positive influence this had on the NRM’s election results (Green 2010).

Therefore, not only was decentralisation used as a tool for patronage, but it contributed to maintaining central government’s grip on power at the same time as the recentralisation policy provided tighter control over local government. Moreover, by reducing the capacity of

local governments to act and subjecting them further to central power, the latter is able to claim the credit for any development or services it requires local governments to provide (Awortwi & Helmsing 2015). While the initial mandates of decentralised agencies include significant and extensive responsibilities, they often find themselves unable to meet expectations as they are heavily constrained.

Finally, some of the impacts of the instrumentalising decentralisation process were illustrated by the Olweny and Agoro irrigation schemes. Indeed, they represent projects imposed by central government, excluding local government from their design and implementation. However, the various district services of local government were expected to monitor the schemes, though without being provided with the means to carry out such missions, as seen in Part I. Furthermore, between 1986 and 2018 the number of districts increased from 33 to 112, including 23 approved by Parliament shortly before the 2016 presidential elections. Hence until 2005 the Lira district, where the Olweny irrigation scheme is located, had six counties, but by 2010 only three of them had not been divided up. The Lamwo district, where the Agoro irrigation scheme is located, was created in 2009 by splitting up the Kitgum district, and saw a significant increase of about 20% in the number of votes for Museveni, only two years after its creation. According to Kristof Titeka,

All of this needs to be understood in the neoliberal context of Uganda: in a situation where other means of patronage have become much more difficult to access, not least given the reduced number of civil servants, local governments have largely taken over this patronage role. This has resulted in a situation in which local governments are primarily used as a source of patronage, but have limited local autonomy. (Titeka 2018: 124)

In conclusion, as Museveni's second decade in power began with the 1996 elections stressing the emerging legitimacy crisis, political strategies were deployed by the NRM-state apparatus to turn donors' constraints into political resources for building on state authority. This was reflected in various changes, some of which directly affected our case studies, the Olweny and Agoro schemes. Indeed, instrumentalising the war against the LRA and the decentralisation process that donors wished for in the name of neoliberal "good governance" principles allowed the state under Museveni to embark on militarisation and authoritarianism. This demonstrates the capacity to divert donors' aid and to juggle with constraints linked to extraversion, in order to ensure political survival. This newly-acquired autonomy only increased as donors changed their approach, leading to a widening of the range of actions

available to states who were receiving aid, in the name of new views of “development”, as we will now see.

### 1.3. Co-constructing legitimacy and the politics of agriculture

This subsection focuses on how bringing back “pro-poor” policies – the creation of districts was considered as an example of this – eventually became a generalised central policy for the government in order to deal with the legitimacy crisis and the resulting growing need to rely on patronage (Perrot 2003). Furthermore, we will demonstrate how, when combined with a specific international context which saw aid being re-oriented, this created a window of opportunity for the NRM-state apparatus to further appropriate foreign aid. One of the main results that we focus on was the deployment of public initiatives that aimed to address popular discontent in the agricultural sector.

Indeed, for the development sector, the late 1990s marked the end of the belief that the “north-south” gap could be closed, as the dominant model was finally proved to be unsustainable with respect to environmental considerations, coupled with increasing inequality, both within and between Global North and Global South countries. Gilbert Rist (2014) describes this change as the end of messianic expectations, which led to restructuring the development sector to fit the hegemonic neoliberal model that was spreading across the world<sup>113</sup>. In this context, international aid shifted its focus to the fight against poverty, and other issues considered as socially unacceptable, in order to find a new consensus. Under the direction of the international financial institutions, the fighting against poverty developed through plans that aimed to stimulate economic growth for the benefit of populations defined as poor, by integrating them further into the market system. This thinking was materialised through, for example, the setting of the Millennium Development Goals, and plans to eradicate poverty in order to achieve them. In other words,

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<sup>113</sup> Among other authors, Gilbert Rist (2014: 385) explains why international aid was restructured rather than disappearing as follows: “even if the hope of extending material opulence to all the inhabitants of the planet had evaporated, the organisations that had been created to carry out this project could not disappear from one day to the next. Not only because it is in the nature of institutions to seek to persevere in their existence and to reproduce, but above all because ‘development’ (in the sense of an organisational structure) had become a sector of economic activity in the same way as tourism, IT or business consulting: too many interests were at stake to let them close down.” (translated from the French).

Here we find again the principle of using unquestionable values to justify 'programmes' that are, most often, incapable of realising them. (...) Despite everything that had previously been said about the multidimensional nature of poverty, it was reduced to its purely monetary dimension and the social context within which it develops was neglected.<sup>114</sup> (Rist 2013: 407-409)

The architecture of international aid was therefore changed from a project-based approach to direct budget support, officially to allow recipient countries to define their own development policy, also reinstating countries that had been bypassed by previous structural adjustment plans and giving them the opportunity to re-enter the political field with respect to the development sector. This took the form of the Poverty Reduction Strategy Paper (PRSP) published by the World Bank in 1999. As the Bank was in need of pilot countries, and most particularly of showcase countries "already demonstrating willingness to comply with Bank policies", Uganda was chosen as its "government needed funding for its development strategy" (Lie 2018: 48-49). The World Bank and Museveni's interests thus continued to converge through the re-structuring of international aid and the re-orientation of some of Uganda's policies.

This provided the opportunity for Museveni to receive approval from the international donors' community – especially by the World Bank – for the shift towards "pro-poor" policies and the more interventionist state that the NRM government was already implementing. Indeed, driven by the internal political need to increase legitimacy, Museveni adopted an increasingly interventionist approach by setting up a National Task Force. This occurred at the end of the Economic Recovery Programme in 1996, the Task Force thus being dedicated to "poverty eradication". This resulted in a Poverty Eradication Action Plan (PEAP) in 1997, described as "largely detached from the [World] Bank's realm and indeed a sovereign product of the Government of Uganda"; the revised PEAP, released in 2000, "served as Uganda's first PRSP, making its entry point into the new aid architecture" while, finally, the third PEAP released in 2004 showed that "the Bank's PRSP model had been fully engrained into it in both structure and policy" (Lie 2018: 47-48).

The PEAP was an operational policy framework aiming at poverty reduction, identifying several areas perceived as key to increasing people's livelihoods, including the agricultural sector. Since most of the population relied on food production both as a source of income and

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<sup>114</sup> Translated from the French.



for subsistence, as well as living in rural areas, the agricultural sector was regaining a certain degree of importance in Ugandan politics. Moreover, the government focused on the adoption of the “Green Revolution” technological package through the Plan for Modernisation of Agriculture (PMA), drawn up in 2001. By the time the latter had been published, the strategic, political importance of “pro-poor” policies and particularly public involvement in agriculture only grew further as the state was irrevocably embarked on the path to exercising power in a more authoritarian and militarised fashion, as highlighted again by the 2001 elections.

Indeed in the run-up to the 2001 elections, Museveni’s strategy concentrated on “pro-poor” messages, as illustrated, particularly by the campaign promise of “Prosperity for All”. Commonly known as *Bonna Bagagawale*, it highlighted the growing political necessity for the NRM to conduct populist policies in order to survive and guarantee its legitimacy. Indeed, by the time new elections occurred, not only were the good economic results fading further, with increasing poverty and inequality, but also the NRM regime’s apparent failure to build a state outside a system of clientelism and patronage was fuelling popular discontent (Collier & Reinikka 2001). Sandrine Perrot describes the situation at the time as such:

Masked by the messages from the those in power, patronage and clientelism practices, although driven further underground, were none the less persistent or even strengthened since the regime’s popularity had started to become eroded. (...) Promotions to the military high command, ministerial nominations and jobs at the head of the major public companies underline the predominance of ethnic groups from the west. (...) The financial networks and the high level of corruption maintained around the centre of power were the source of political leaders’ ideology. Corruption had become a modus operandi and a means of political survival.<sup>115</sup> (Perrot 2003: 426-427)

What is more, since 1998, those in power had been shaken under the assault of politico-financial scandals related to privatisation and the banking system, by the rise of internal opposition and by humiliating military defeats in the Congo. (...) Despite the obvious change from chaos to a calmer political order, the development of contradictions in the regime thus revealed several shadowy areas that compromised the consolidation of the new political order over the long term. (...) The violence that accompanied the 2001 election and its avatars were nothing more than the outcome of the converging approaches of blocking the opposition and militarising the issues. (...) This time, the regime seemed ready to carry out any political manoeuvres to hold on to power, including wider use of repression and coercion.<sup>116</sup> (Perrot 2003: 429-430)

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<sup>115</sup> Translated from the French.

<sup>116</sup> Translated from the French.

The 2001 election year was therefore characterised by the development of further agricultural policies, this time with the launch of the Plan for Modernisation of Agriculture. The PMA was based on seven pillars, and its secretariat was established as a semi-autonomous agency, among eight other semi-autonomous or autonomous bodies related to agricultural development. This also illustrates the beginning of the fragmentation and multiplication of agriculture-related institutions whose mandates sometimes overlapped in the absence of coordination between them, as well as the MAAIF's inability to impose itself. Indeed, with "no direct control of the sector policies or how the agencies use revenues from levies, the MAAIF's oversight and coordination functions are weak", as are "institutional linkages between the ministry and sector agencies on one hand, and amongst sector agencies on the other" (Betegaka *et al.* 2013: 22).

Nevertheless the PMA once again directly reflected the international financial institutions' approach, introducing agriculture as a business and defending food security through liberalism: "In so long as farmers produced for the markets, they would supposedly have sufficient incomes to meet their food needs", this approach prioritising "production for the market over household and national food security" (Bategeka *et al.* 2013: 5,21)<sup>117</sup>. Nevertheless, as "pro-poor" policies eventually spread into the agricultural sector, opportunities appeared for the MAAIF to rebuild influence, thanks to re-oriented policies. Indeed, as highlighted in the previous chapter, while some institutions, such as the former Ministry of Natural Resources, were significantly empowered by Uganda's liberalisation, others such as the MAAIF were weakened. Since the early 2000s, the MAAIF has thus been deploying strategies that aim to reverse the process, as illustrated by the drafting of the legal framework for agriculture, which intensified with the shift to "pro-poor" policies. Distinct dynamics then emerged. For instance, the case of the PEAP showed increasing competition between state institutions – the government being a far from homogenous entity – to secure budgets and programmes designed by the PEAP, in the context of weakened capacity since the introduction of neoliberal reforms (Tumusiine-Mutebile 2010). The introduction of the PMA is another example of the MAAIF defending its interests. Indeed, the ministry showed resistance to the direction that agricultural policies were taking, with autonomous agencies

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<sup>117</sup> Nevertheless, after about ten years of implementation, only one out of the seven key pillars of the PMA survived, mostly due to the fact it was enacted by Parliament in the form of the NAADS (National Agricultural Advisory Services) Act.

being set up outside its aegis. This resulted in donors creating parallel institutions, such as the PMA, to address the MAAIF's reluctance (Bategeka *et al.* 2013). Finally, some of the links between electoral strategies and the renewed populist policies for agriculture were revealed, illustrated for instance by "initial efforts by the PMA Secretariat to reposition itself as the champion of Prosperity for All (PfA) seem to have failed" and by how the "political class could not decide on where to locate the PFA – the Office of the Prime Minister; the Vice President's Office; the Office of the President; the Ministry of Finance, Planning and Economic Development, or elsewhere" (Bategeka *et al.* 2013: 5-6). Indeed, these agricultural policies, putting agriculture back at the forefront, must be approached in the context of growing interventionist behaviour, gradually adopted by the government to ensure the NRM's survival and legitimacy. The referendum held in 2005, which introduced multi-party politics therefore aimed to solve the Movement's internal problems, allowing Museveni to regain the political initiative by eviscerating the opposition. It also aimed to reassure donors with respect to the country's political direction. However, the same year was marked by the lifting of the presidential term limit, allowing Museveni to be re-elected in 2006. In response, most donors either stopped giving aid altogether or significantly reduced the amount. While the "[World] Bank's dependence on Uganda as an example of success to legitimise continued aid spending meant turning a blind eye", "the fact that the Ugandan government went through (...) despite being threatened by aid cuts demonstrates a sense of resistance to the Bank, dominant discourses and the power of developmentality" (Lie 2018: 53, 57).

Nevertheless, in the end, although the government aimed to revive agricultural policies, overcoming the results of the neoliberal reforms proved to be challenging. The fall in the production and prices of coffee and cotton, which were major cash crops at the time in Uganda, had a significant impact on growers' incomes. Moreover, while the reforms allowed the development of the private sector, most growers' incomes hardly benefited from private sector expansion. Since 2010, the decline of growth has been significantly linked to the "declining global demand for commodities, lack of bureaucratic support and instability in South Sudan, formerly a major Ugandan export market" (ICG 2017). More particularly,

During the early period of the [neoliberal] reforms, agriculture contributed 85 per cent of exports earnings and employed over 66 per cent of the working population, and agricultural commodities constituted over 90 per cent of exports. (...) While the National Development Plan (NDP) underlined low productivity in agriculture (NDP 2010: 15), official discourse blamed seasonal climatic vagaries like drought and *el nino*, thus obscuring the systematic structural problems inherent in the neoliberal model. The removal of subsidies, the degeneration and contraction of

extension services after 'rolling back the state', constraints in accessing markets, unaffordable inputs and credit, and the collapse of cooperatives, all precipitated the decline in agriculture. (Asiimwe 2018: 150-151).

Whatever role agriculture plays for the people, it was not until the end of the 2000s that the international financial institutions finally recognised its essential nature and put agriculture back at the core of policies, as illustrated by the World Bank annual report in 2008, which for the first time in 25 years was devoted to agriculture (World Bank 2008). In Uganda, agriculture was thus still not a priority for donors in the early 2000s, although it had become a priority for Museveni. The early 2000s were marked by the reduction in aid in response to Museveni's amendment of the Constitution in order to remain in power. This raises the question of how the FIEFOC programme was funded in this context, which is addressed in the next section.

In conclusion, as Museveni's regime entered its second decade in a context of crisis, strategies were deployed by those in power to address popular discontent and increase authority. While constraints imposed by donors were initially instrumentalised by the regime's militarisation and authoritarianism, becoming increasingly reliant on patronage and a clientelist network, the shift in the criteria for aid provided new opportunities to build legitimacy. Indeed, a populist shift towards "pro-poor" policies" appeared out of the convergence of a legitimacy crisis with the re-orientation of international aid towards more autonomy for recipient states, alongside a new "development" approach focusing on the fight against poverty. In a predominantly agrarian country, the agricultural sector was finally back at the core of policy-making, as highlighted by the tense 2001 elections. In this context, the agricultural sector developed again, creating significant political difficulties for the ruling regime. As Museveni's leadership entered its third decade, the political context was marked by a militarised, authoritarian regime shifting towards developmental nationalism – a trend reminiscent of many other countries at the time. The NRM-state apparatus thus appeared increasingly assertive, especially in relation to donors. These new approaches form the highly political and formative background in which the irrigation sector finally developed, as shown in the second section of this chapter.

## 2. THE ERA OF DEVELOPMENTAL NATIONALISM: THE FIEFOC PROGRAMME (2005-2012)

This section shows how the revival of irrigation schemes was politically materialised in the form of the FIEFOC programme, which finally emerged out of the agricultural aspects of the “pro-poor” populist orientation. However, the political willingness to draw up a programme focusing on the rehabilitation of irrigation schemes appeared in Uganda at a time when agriculture had not yet reached the top of donors’ agendas.

The first subsection therefore shows how the FIEFOC programme was funded by linking irrigation to forestry, designing the programme with two separate components. Indeed, the FIEFOC programme was introduced in the context of the aid sector increasing recipient states’ autonomy, but not yet making agriculture a priority, as seen in the previous section. The FIEFOC’s irrigation component was therefore shaped by the extractivist approach found in the forestry sector, forming part of a generalised political trend towards developmental nationalism. This link was illustrated both by its implementation calendar, which served electoral purposes, and by the continued use of large-scale infrastructure, which was favoured by the extractivist approach and demonstrated the power of the state despite the questionable results it had achieved in the past.

Nevertheless, the second subsection shows how the 2008 global crisis contributed to a new approach that justified a return to irrigation schemes in the eyes of donors and finally saw the spread of such schemes. The significant delay to the irrigation component in Uganda fuelled the “pro-irrigation” rhetoric of the public sector, alongside the accelerated introduction of the “green” economy-related legal frameworks explored in the third subsection. The Ugandan “pro-irrigation” public rhetoric is thus built upon both national political trends and international policies that mostly spread after the 2008 crisis. Such rhetoric would later ease access to funding for further irrigation schemes, while depoliticising the booming irrigation sector with politically correct technocratic approaches. In this way, the significant contribution of the sector to neo-patrimonial dynamics, described in the third section, appeared to be more of a consequence than a cause in the eyes of public opinion – an observation sometimes found in interviews that can be explored further.

## 2.1. Securing the revival of irrigation schemes in the 2000s

This subsection shows how the FIEFOC programme emerged, linking irrigation and forestry, thus cleverly ensuring donors' support while including the programme in a political programme built upon the need for legitimacy and authority in order to ensure political survival. The early 2000s were indeed marked by the state returning to the limelight, as expected with the forthcoming aid architecture, although it was part of an ever-growing authoritarian trend. Despite the “pro-poor” policies – whose main results were political through legitimacy and authority-building – inequalities continued to grow while poverty reduction stagnated. Consequently, discontent only grew, leading to political power being exercised in an increasingly populist and authoritarian fashion, as previously seen. While public aid was lower during this decade than in the preceding one, nationalism and populism grew with the clear orientation towards “pro-poor” policies, deifying the state over economics – and over the market – and mobilising the population around “nationalistic causes such as the urgency of ‘fundamental change’, ‘nation building’, ‘prosperity for all’, the ‘war on poverty’, etc” (Rubongoya 2018: 107). In this context, the shift of the NRM-state apparatus from “neoliberalism to developmental nationalism as the new expression of the movement legacy” (Rubongoya 2018: 96) fuelled political willingness in addition to the other reasons for rehabilitating the Doho, Mubuku, Agoro and Olweny irrigation schemes.

Indeed, reviving irrigation schemes addressed several political issues. In Uganda, the inherited irrigation schemes initially represented onerous development projects, as seen in Chapters 3 to 5. Such schemes were often highlighted in the literature as symbols of national unity and technocratic know-how, being perceived as modern, as well as symbols of the power of the state, often as the core of populist electoral strategies<sup>118</sup> (Faggi 1990, Bertoncin & Pase 2012, Gay & Torretti 2015, Rey & Rétif 2017). In Uganda, reviving the irrigation schemes thus appeared as a means of recovering a glorified past of modern agricultural prosperity. This discourse was mainly passed on through the media, which significantly promoted the past productive achievements of these schemes in an idealised fashion. Moreover, irrigation and irrigated rice having been closely linked since the “Green Revolution” period, this revival also relied on the rice boom, to which it was expected to significantly contribute. Moreover, rehabilitating irrigation schemes was a public initiative that fitted in with the PEAP and the

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<sup>118</sup> The last point will be examined in more detail in the following section of this chapter.

PMA, the latter promoting the adoption of a “Green Revolution” in a liberalised agricultural sector. The importance of agricultural policies was even more significant in the light of the seemingly positive effects of liberalisation that were finally fading a few years after the reforms. This therefore also addressed the risks of food insecurity as well – using the vision of agriculture as a business described by some authors – since food production was failing to catch up with population growth (Bategeka *et al.* 2013).

Furthermore, since donors were not yet showing interest in making significant investments in agriculture, the Ugandan government designed the FIEFOC programme to combine the rehabilitation of irrigation schemes with forestry – therefore establishing close links with Ugandan REDD+ projects (Langan & Farmer 2014). This allowed it to secure funding not only from the African Development Bank, with a loan US\$50 million, but also with a US\$15 million grant from the Nordic Development Fund, a well-known donor in the forestry sector which was also behind national biomass studies conducted alongside other Nordic cooperation agencies<sup>119</sup>. Indeed in the early 2000s the importance of the “green” economy – promoted internationally as a response to climate change, and emphasised in Uganda after the 2008 world crisis – was growing (Bond 2000). According to Adrian Nel, in this economic model,

the focus is not on prohibiting or regulating dangerous climate-change-inducing activities (...), but rather concerns promotion of a reliance on the ability of the forces of supply and demand. This discourse of efficiency posits the potential to adjudicate or *securitise* climate ‘risks’ through the market allocation of environmental goods (...). The intervention comes in the form of carbon sequestration, where emissions in the Global North can be ‘offset’ (...) by storing carbon emissions elsewhere, often in the Global South in places like Uganda. These interventions (...) constitute deeply political moves that reconfigure power structures, prioritising some industrial resource users, such as agro and forestry industrialists, over smallholders and subsistence farmers in project vicinities in ways that can entrench, rather than resolve, the crises it was designed to address. (Nel 2018: 212)

The overall design of the FIEFOC programme thus reflects the focus on deforestation and agribusiness, with increased pressure to convert land into timber or agribusiness plantations (Mwangi & Wardell 2012). In this way, combining forestry and irrigation within the same programme finds its justification through a shared productionist and extractivist approach to land use, which furthered the technocratic dominance also seen in irrigation schemes.

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<sup>119</sup> Indeed the Nordic countries (particularly Sweden, Norway and Denmark) had a significant influence in the 1980s with respect to environment-related aid projects (Motte 2010), as we have already seen in Uganda with the major role played by DANIDA in the water sector, for example.

In Uganda, the forestry sector was thus significantly reformed following a neoliberal environmental restructuring – which led to the rise, among other things, of the dominance of “participation” as seen in other sectors and at various scales<sup>120</sup>. Under pressure from donors, the National Forestry Authority was created, and forest sector reforms begun in 2002. The prevailing discourse to justify this trend was that timber was, due to lack of prior plantations, in short supply, therefore focusing on production instead of the causes of forest loss: the timber trade itself, fuel-wood extraction, agricultural expansion, “coupled with a largely uncoordinated, politically unsupported and poorly funded forestry management apparatus which is widely accused of corruption” (Nel 2018: 204, Twongyirwe *et al.* 2015). The restructuring of the forestry sector was thus part of a wider trend towards economic growth based on an extractivist vision of natural resource management (Sandbrook *et al.* 2018), as accurately described by Adam Branch and Adrian Yen in regard to the post-war Acholi sub-region:

Security roads that had been built into some of the most remote areas during the war are now being used to extract resources, in particular timber. (...) Rural Acholi find themselves disposed of land and resources as the value of the north becomes increasingly defined around its exploitable minerals, oil, wildlife, water and trees. Land is a target for enclosure and value extraction (...) today it remains to be seen how exactly a coercive state-driven extractivist development will come to terms with a sustainable, consensual, ‘green’ development. (Branch & Yen 2018: 88-92)

The same description could actually apply to the irrigation sector, demonstrating the similarity in the approach to natural resources in both sectors under the dominance of neoliberalism. This would contribute to shaping the direction of public initiative for irrigation, which under Museveni begun with the FIEFOC programme, favouring a productionist and extractive approach to irrigation – an approach present in Uganda since the “Green Revolution” and its legacy in the country’s schemes, with the results that we have previously highlighted, probably undermining any possibility of change in the “rehabilitated” and new irrigation schemes.

In conclusion, at a time when agriculture was not yet a priority for donors and when aid was significantly cut in response to Museveni’s amending of the Constitution, the political

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<sup>120</sup> For a summary of the development of “participation”, see for example Lavigne Delville P., 2019. “La « participation » au développement, entre projet émancipateur et instrumentalisation : une périodisation”. *Anthropologie impliquée* (blog). Available at: <https://anthropo-impliquee.org/2019/04/14/avril-2019-la-participation-au-developpement-entre-projet-emancipateur-et-instrumentalisation-une-periodisation/> [Accessed April 30 2019].



willingness to revive irrigation schemes in the country dealt with donors' constraints by linking forestry to irrigation. Indeed, the forestry sector was favoured by some donors as the growing neoliberal "green" economy would require countries from the Global North to compensate for their carbon emissions, involving countries from the Global South to achieve it. The forestry sector in Uganda was thus undergoing profound restructuring to fit in with the dominant neoliberal agenda, remaining a focal point for donors while other sectors did not, in the name of the fight against climate change. The resulting extractivist and productionist approach thus extended the irrigation component of the FIEFOC programme, securing its funding but undermining any possibility of changing the technocratic, top-down approach that had been used since the "Green Revolution".

## 2.2. The 2008 crisis, or reinforcing the neoliberal regime to adapt to climate change

This subsection focuses on the 2008 global crisis, first by exploring its impacts on food policies and more particularly on rice and, secondly, how this reinforced the promotion of domestic production, particularly among international institutions. This context indeed contributed to encouraging a general trend back to irrigation schemes, in which previously dominant narratives were strengthened and spread to new sectors, including irrigation.

In order to understand the main effects of the 2008 crisis, we first describe how the global rice economy, inherited from the liberalisation of economies and the globalisation of trade, was a major sector, at the heart of the food prices crisis. As briefly mentioned in Chapter 4, the "Green Revolution" had become unequally established around the world as an extractivist and productionist model, with Asian countries such as China at the core of agricultural transformation, with a particular role being played by irrigation-fed rice. The adoption of the "Green Revolution" technological package, alongside other measures, thus led to different levels of rice production in different countries. Rice yields reached up to ten tons per hectare in the main producing countries, greatly segmenting the global rice economy (Lançon 2012). Despite a low level of imports, Europe was in deficit due to its diversity of eating habits. The USA became one of the world's main rice producers, supplying mostly the American and Caribbean markets. Argentina and Brazil also became exporting countries, although to a lesser extent, within the south American production zone. In Asia, where about 90% of global production is grown and consumed, the "Green Revolution" raised yields to unprecedented

levels. Today, a small number of Asian countries are therefore the world's main exporting countries, including to the African continent, which imports half of the rice it consumes.

As we have seen in Uganda, the "Green Revolution" did not become established in many African countries for several reasons, such as the agrarian system and/or environment being unsuitable, policies favouring expansion of cultivated land over production intensification or capitalisation of production systems, or unstable, sometimes violent, political situations. Indeed, political orientation and instability, coupled with recurring conflicts, contributed in various cases to preventing economies from diversifying and developing – as they did in countries where the "Green Revolution" has been implemented (Torretti 2017). Therefore, with rain-fed, extensively grown rice yielding one to two tons per hectare, while the demand for rice significantly increased, many African countries found themselves structurally deficient with respect to rice. With growing populations and urban spread on the one hand, and liberalisation of the economy often imposed on the other, rice imports became an essential and structural adjustment variable in many countries in the Global South (Lançon & Mendez del Villar 2008, Lançon 2012).

The 2008 crisis then showed the limits of the dominant world order, as reflected by the rice economy being harshly affected by the brutal surge in food prices. Many importing countries, with structural deficits with respect to rice, have seen their food security undermined – if not compromised (Jamin 2008). In Asia, despite economies that are open to the global market, regulating rice production had remained above all a political economy tool, guaranteeing social peace, before being perceived as a comparative advantage. The asymmetry in the global rice economy, coupled to a succession of quick decisions based on predictions that proved to be self-fulfilling, led to a drastic decrease in Asian exports over a very short time (Dawe 2010, Lançon 2012). A crisis followed, related to rice in particular and food in general, affecting countries to varying degrees according to their level of dependency. The graphs below show rice production and imports in different African regions, illustrating those regions' varying levels of market dependency:

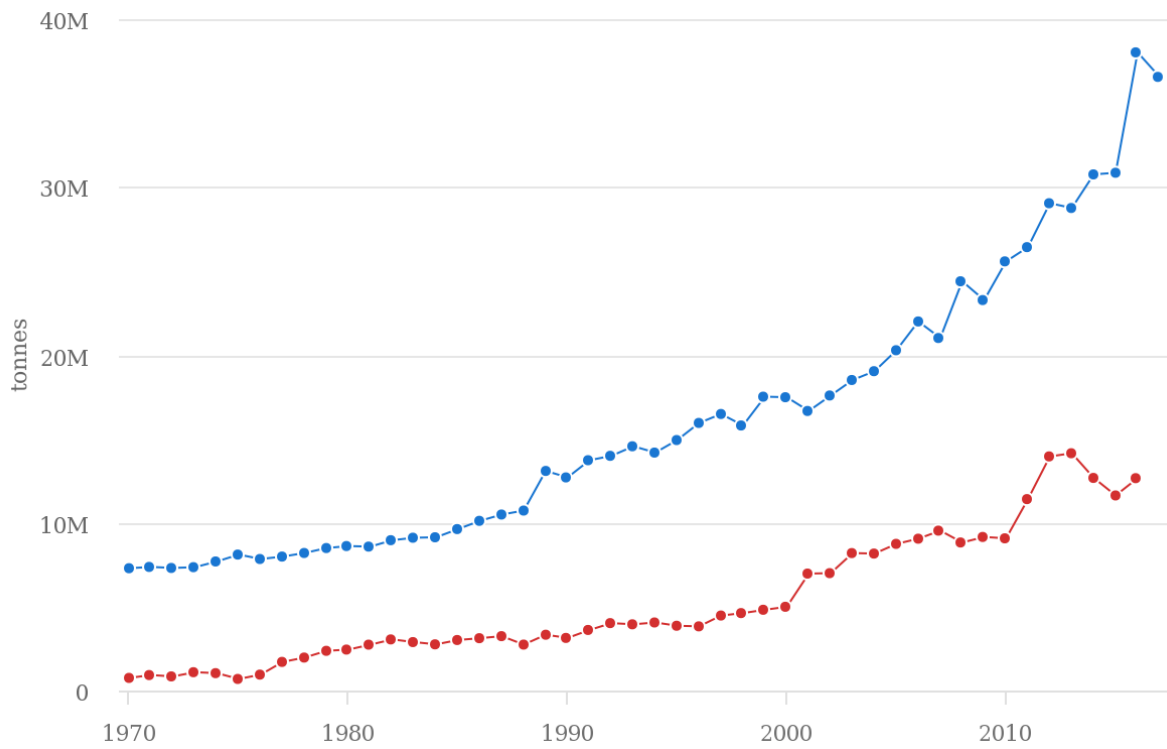


Figure 30: Rice production (blue) and imports (red) in Africa (Source: FAOSTAT 2019)

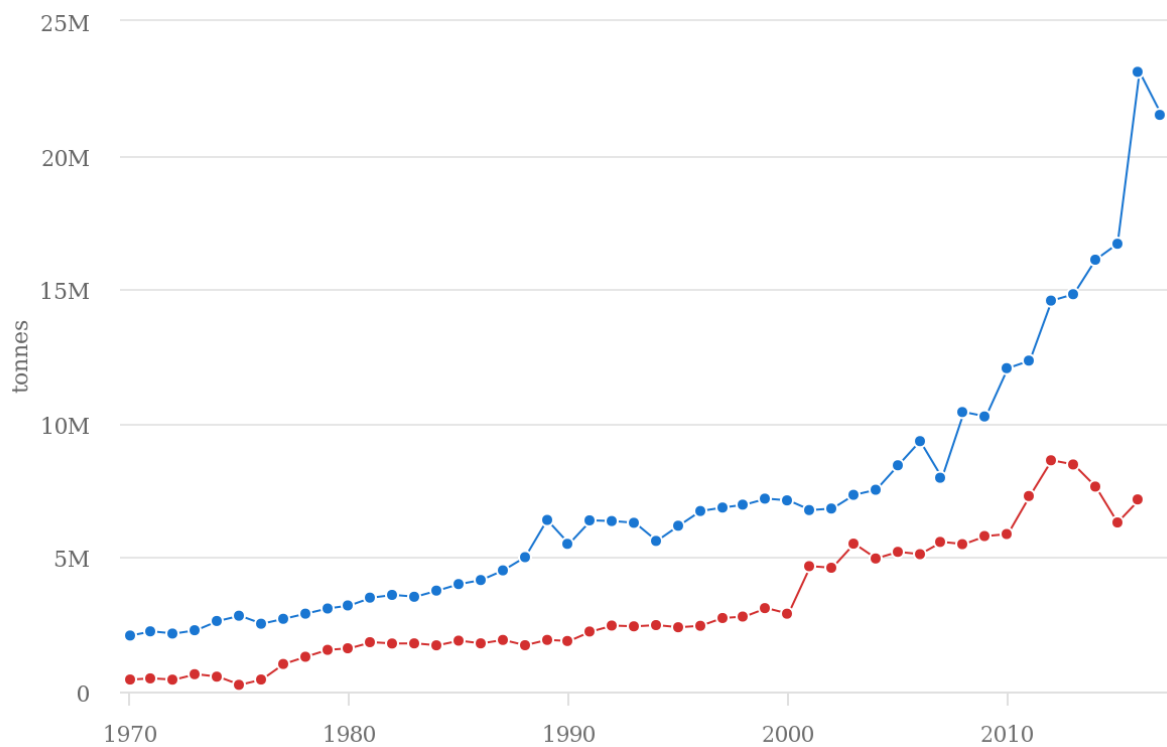


Figure 31: Rice production (blue) and imports (red) in West Africa (Source: FAOSTAT, 2019)

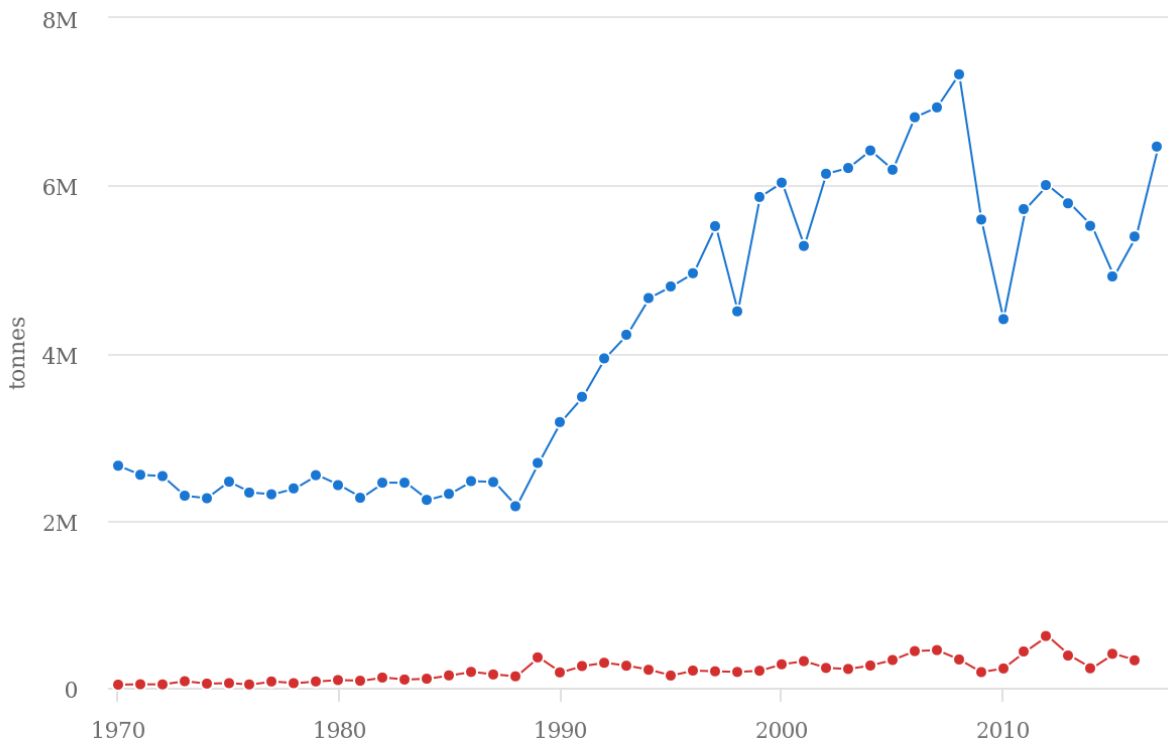


Figure 32: Rice production (blue) and imports (red) in North Africa (Source: FAOSTAT 2019)

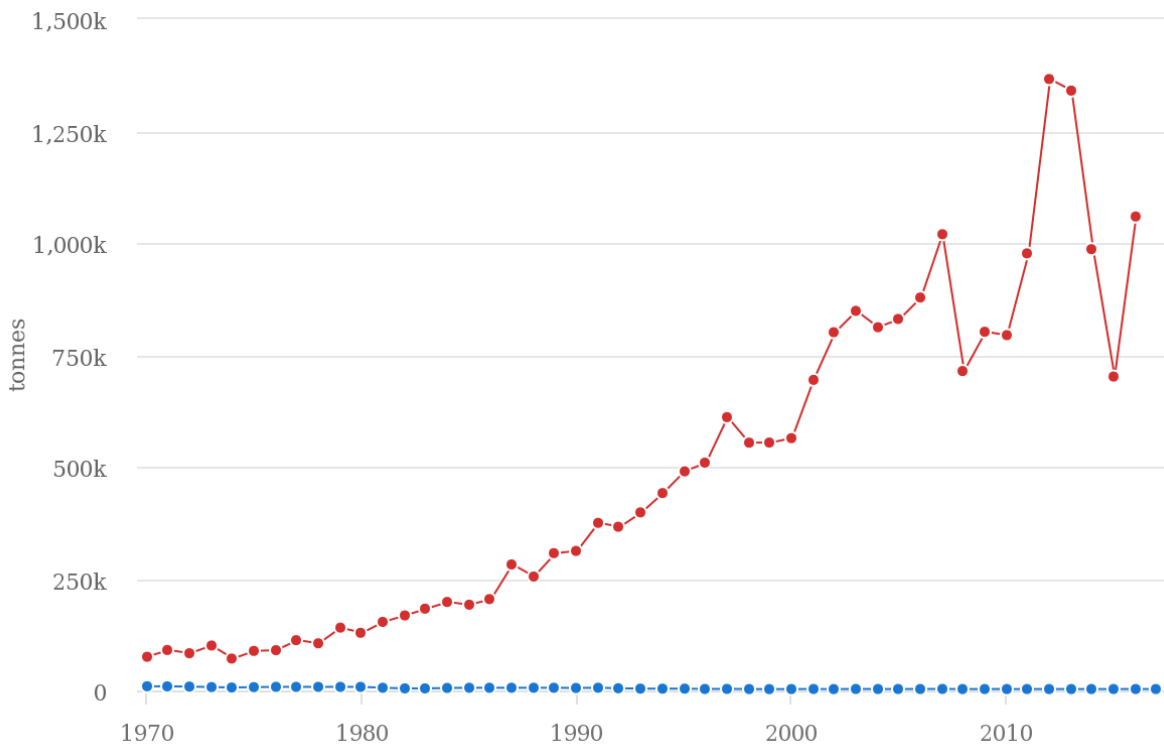


Figure 33: Rice production (blue) and imports (red) in South Africa (Source: FAOSTAT 2019)

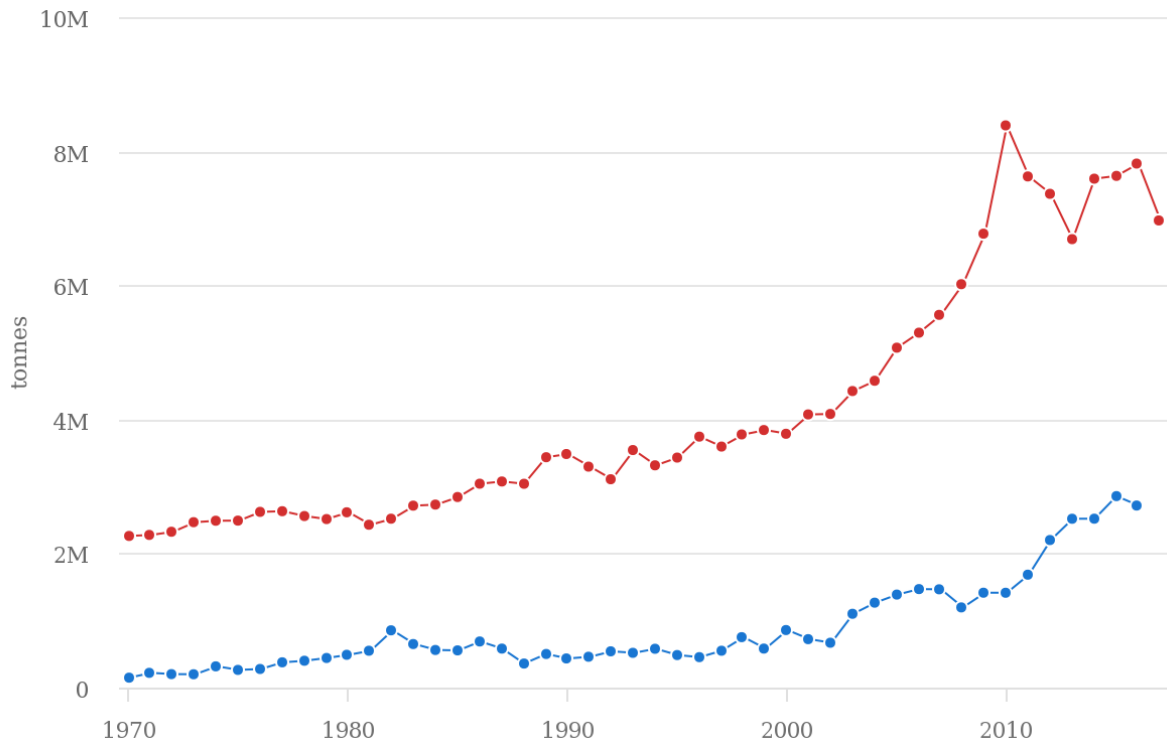


Figure 34: Rice production (blue) and imports (red) in East Africa (Source: FAOSTAT 2019)

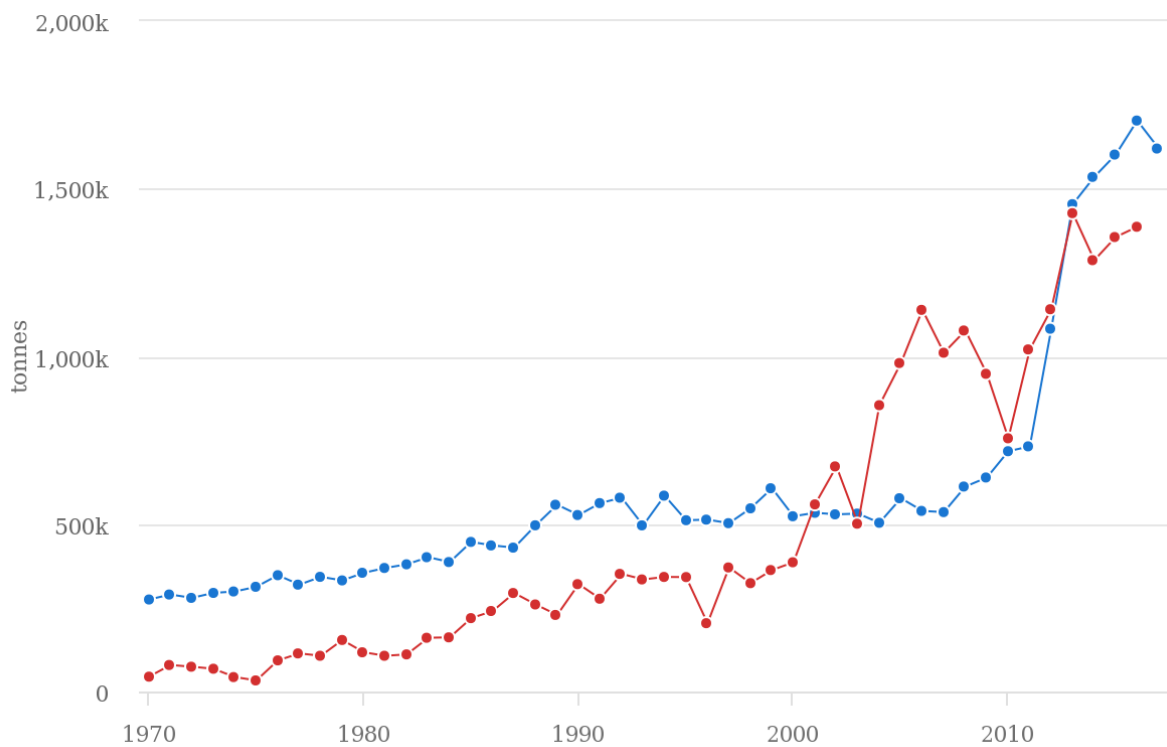


Figure 35: Rice production (blue) and imports (red) in Central Africa (Source: FAOSTAT 2019)

This set of graphs shows that, although the rice boom generally started across the continent before the crisis occurred, as in Uganda in the early 1990s, the increase in production did not always match the increase in domestic consumption – as was harshly demonstrated during the crisis. In Uganda, as seen in Chapter 4, the rice boom started in the 1990s. Imports also increased, following a general trend across the continent. However, it is worth noting that rice exports also began in the 2000s in Uganda, as illustrated by the graph below:

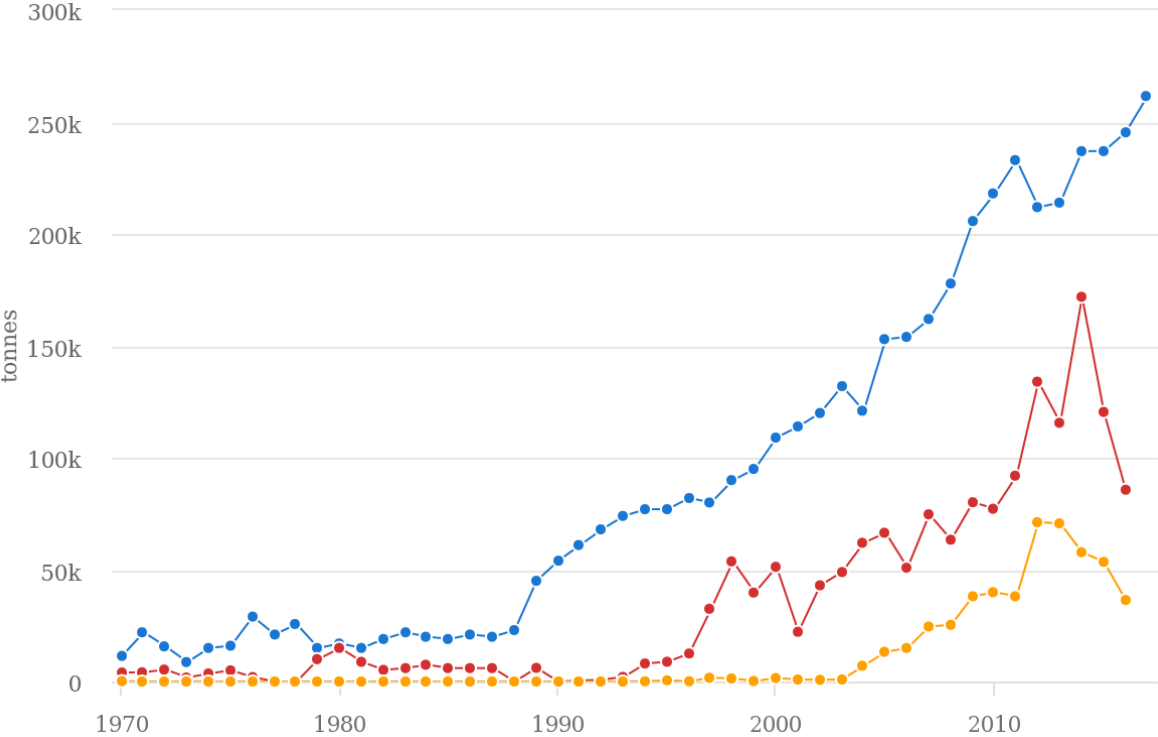


Figure 36: Rice production (blue), imports (red) and exports (yellow) in Uganda (Source: FAOSTAT 2019)

This trend is mostly linked to the development of war in South Sudan, since the country became the main customer for Ugandan food exports in a liberalised environment (Calas *et al.* 2016), although the East African Community’s Common External Tariff is high – set at US\$200 per ton for rice from outside the region. The Ugandan reliance on South Sudan for exports proved to be a double-edge sword, since the stability of Ugandan economic growth is now significantly linked to exports to South Sudan, which has become more uncertain as violence has escalated in the country in recent years. South Sudan nevertheless remains a strategic target for Uganda exports, as shown by the orientations of public initiatives, including those related to irrigation planning as will be shown later.

Thus, the 2008 crisis reinforced the public policies promoting domestic production, which had appeared in the early 2000s in many countries, in order to ease food dependency due to significant imports. The concept of sovereignty, including in the agricultural sector, was back at the forefront of global policies. This context contributed to encouraging a general trend back to irrigation schemes (Brelle & Dressayre 2014), alongside an economic model based on a development enclave, in line with the vision of developmental nationalism taking place in Uganda. On the one hand, the irrigation schemes were, as they had been in the 1950s and 60s, perceived as being able to reach higher yields thanks to the “modernisation” of agriculture, this time promoted as a tool to fight climate change with the birth of the concept of “climate-smart agriculture” and “sustainable intensification”<sup>121</sup>. On the other hand, this revival of interest at national level illustrates the appeal of resurrecting what Pascal Rey and Marine Rétif calls the “delusion of large-scale development”, meaning that irrigation schemes, undermined by the structural adjustment plans, nevertheless still symbolise “national pride” as well as a “federalising challenge”<sup>122</sup> (Rey & Rétif 2017). Indeed, as illustrated during an interview (20/11/17) with the Chief of Party of the International Fertilizer Development Center (IFDC):

Climate change is like the new bubble those days, and pretty rightly. Climate change needs responses like climate-smart agriculture, and this includes water management, so, I guess this is how irrigation is becoming big. But also, if you look at the financiers: the African Bank, Islamic Bank... Investment in infrastructure leads to more tangible results. It is an observation from the field, I do not know if it is true but look. When for example you do a project, and then later you ask for feed-back from the communities, they would recall the road that was constructed, but the training courses? Not that much. Those capitalist projects are remembered.

The promotion of rice growing thus forms part of several strategies: promoting rain-fed rice, cultivated in dryland with improved seeds – with the launch of NERICA (New Rice for Africa) for instance – as well as irrigated rice on a larger scale through schemes at the core of land development planning. As we have seen in Uganda, the first strategy indeed met some of its production volume objectives. The second, in a similar way to the irrigation development policies conducted in the 1960s across the continent that aimed to adopt intensive practices leading to much higher yields, seems so far to have failed. Indeed, it does not seem to give better results than it did in the past, with political factors still prominent, alongside project

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<sup>121</sup> See for instance Campbell *et al.* 2014 or Neufeld *et al.* 2013 for a description of the concepts of “sustainable intensification” and “climate-smart agriculture”.

<sup>122</sup> Translated from the French.

design that remains technocratic and top-driven. Nevertheless, the dominant approach to climate change, the neoliberal environment and instrumentalisation of such projects has renewed their interest and legitimacy (Torretti 2018). Meanwhile, the challenges previously encountered are either ignored or left aside by development practitioners following the “new bubble”, as previously highlighted by the Chief of Party of the IFDC. An interview (14/11/17) with the Business Development Manager at the French company BRL Ingénierie, illustrates this observation:

We are seen as the experts. We have legitimacy because we have a developed model here, in France, which has proved its worth. There is indeed a certain return to irrigation in the world these days. At BRL, we are currently reinforcing our teams because the demand for this market is growing. (...) This is for food security. Obviously, we need to help those countries to develop too. There is, maybe, some awareness that those projects were set aside in the past, if you say so. Anyway, it's not as if those countries could decently do things differently.<sup>123</sup>

It is worth noting that BRL Ingénierie, created in the early 1950s with the name *Compagnie Nationale d'Aménagement du Bas-Rhône et du Languedoc* to develop water for agriculture, has a historical role in the partitioning of land for irrigation in France and Vietnam. In southern France, it significantly contributed to the development of irrigation schemes through large-scale infrastructure, reflecting the growing dominance of engineering and the organising of growers through water schemes at the time. Later, the company extended its activities to countries from the Global South, especially Africa. This case shows the perception in the development industry that technology and knowledge are not situated but universal and, therefore, reproducible. It also illustrates relationships between power, knowledge of water and technology through the porosity of boundaries between the private sector, aid practitioners and knowledge production (Aubriot *et al.* 2018). Indeed BRL Ingénierie is often mandated by development agencies, while it contributes to research through publications in the academic journals that the agencies rely on partly to draw up and renew their approaches and strategies – such as the article written by François Brelle and Étienne Dressayre on financing irrigation, which describes a lack of irrigation technology in the world, and how the expansion of the technology could be financed.

Moreover, the new interest shown by the international community in irrigation is also used by other actors outside the private sector, such as new development agencies or banks, as a

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<sup>123</sup> Translated from the French.



means of legitimising their presence in the aid sector, as illustrated by the interview (13/11/17) below with the Acting Head of the Agricultural Infrastructure, Mechanization & Water for Agricultural Production Department, speaking about a Korean agency:

They want to come into the development world. They need to stabilize because they are not grounded, so, they come, and then disappear. For us [the MAAIF] even it is not easy, if we want to reach them then they say: “We call you back tomorrow” and they don’t.

Thus it may be seen that the 2008 crisis did not lead to a structural change in the dominant order. The volume of exchanges in the rice sector continues to grow significantly, although it decreased following the crisis before recovering. Thus, despite public policies implemented since the early 2000s to increase domestic production and to promote food sovereignty, imports remain essential for many countries or at least strategic for others. The pre-crisis segmented rice economy remains, with at least two structural factors at the origins of the crisis: the globalisation of eating habits, as well as the “dysfunction of a world system based on the abandonment of subsistence cropping”<sup>124</sup>, pointed out by Raoul Petit-Bel and Marie Redon (2017). Eventually, in the light of the 2008 crisis, the “development” is “reduced (...) to what it never stopped being: economic growth, or (...) the transformation of social relationships and nature into market goods”<sup>125</sup> (Rist 2013: 422). With the failed 2009 Copenhagen conference on climate-change, and the unwillingness of decision-makers to choose between pursuing economic growth or focusing on preserving the environment, the “green” economy appeared to be strengthened as the only recent innovation and became dominant, as we will now see in Uganda.

In conclusion, in this section we have seen how the 2008 rice crisis resulted mostly from many African countries being dependent on the world market, as a legacy of the heterogeneously adopted “Green Revolution” coupled with liberalised economies. Given the increasing role played by the crop, the crisis significantly reinforced a general trend of returning to irrigated agriculture, with a particular emphasis on rice, in order to encourage food sovereignty in the midst of climate change. In Uganda, this contributed to building the legitimacy of the political direction already taken by Museveni, though the latter involved major political issues as we have seen. Nevertheless, it gives the NRM-state apparatus authority by contributing

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<sup>124</sup> Translated from the French.

<sup>125</sup> Translated from the French.

narratives in the public domain that were lacking before, strengthening the return to agriculture and irrigation with political correctness and approval from international actors. This was reflected in an accelerated creation of “green” economy legal frameworks, further justifying irrigation schemes and their later boom, as we will now see.

### 2.3. Politics of the Ugandan “green” economy legal frameworks

This final subsection shows how the advent of the “green” economy, reinforced after the 2008 crisis, contributed to accelerating the creation of legal frameworks for the environment and agriculture, adopting a neoliberal vision in the form of extractivist and productionist approaches to resource management. This vision indeed contributed to shaping the irrigation sector by continuing with the model inherited from the 1960s. Moreover, it contributed to promoting a “pro-irrigation” discourse in the public arena, relying on new international approaches justifying the general return to irrigation in the form of large, technocratic and capital-intensive schemes.

In Uganda, after a delay of several years, the FIEFOC programme, with an annual approved budget of UGX18 billion<sup>126</sup> in 2013/14 for instance, was finally launched in the context of the 2008 food crisis. However, due to delays in implementing the irrigation component, in 2011 the FIEFOC programme mandate was transferred by presidential directive from the MAAIF to a National Project Coordination Unit under MWE supervision, for various reasons that will be analysed in depth in the following section<sup>127</sup>. Moreover, in the same directive, Museveni also approved the restructuration of the irrigation component to rehabilitate three schemes (Mubuku, Doho and Agoro) instead of four (Mubuku, Doho, Agoro and Olweny) due to high estimated costs. The Mubuku, Doho and Agoro irrigation schemes were therefore rehabilitated under the FIEFOC programme whereas the Olweny scheme rehabilitation was carried out later using government funds.

This period was also characterised by the creation of “green” economy legal frameworks related to agriculture and the environment:

- The submission in 2007 to the United Nations Framework Convention on Climate

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<sup>126</sup> About US\$7 million at this time.

<sup>127</sup> See in annex a copy of the presidential directive.

Change (UNFCC) of a National Adaptation Programme of Action (NAPA), thus integrating international policy designed by the UNFCC to signatory countries;

- the creation, also under donor pressure, of a Climate Change Unit in 2008 aiming to coordinate policy alignment with the UNFCC;
- the release of a National Development Plan (NDP) adopted in 2010, in line with the previous PEAPs it replaced;
- the launch by the MAAIF in 2010 of the Agricultural Sector Development Strategy and Investment Plan (DSIP) in line with the previous PMA it replaced, and of an Agricultural Policy in 2011,
- And, since rice was identified during as a strategic crop the drafting of the DSIP, a National Rice Development Strategy (NRDS) was released in 2008.

Although the creation of the Climate Change Unit – which became a Department in 2015 – shows the increasing importance of including climate change in policies, it was not followed in Uganda by further measures to address the weakness of the MWE’s Directorate of Environmental Affairs highlighted in Chapter 5. Indeed most resources are directed to water and sanitation – leading to significant dependency on donors (Langan & Farmer 2014). For example, the Climate Change Unit was initially funded by DANIDA, until the Danish agency redirected this fund towards a Joint Water & Environment Support Programme to whose creation it had significantly contributed. At the local level, environment-related state institutions are hardly funded by the government, as previously seen. In this context, the environmental regulations which required impact assessment for irrigation schemes are not as decisive as they were for instance for the implementation of the Olweny irrigation scheme in the 1990s. However, although the National Environment Management Authority is supposed to supervise such studies, it appears that environmental impact assessments are no longer being conducted in some cases. This shows both indifference to ecological considerations – as some donors, such as the African Development Bank, no longer make them a priority as they used to in the 1990s – and weakness in the Environmental Affairs Directorate, as illustrated by the following interview (17/11/17) with the Acting Assistant Commissioner of the Climate Change Department:

The government develops projects in an integrated manner. But as you said, the writing is clear, but in reality, involvement is not there. There is a gap. The projects are supposed to be reviewed. For example, at district level, the Environment Officers are meant to ensure that everything is well implemented.

- But if involvement comes during implementation, isn't it a bit too late?
- No, because there is also an Environment Impact Assessment before, NEMA has to give certificate to make sure everything is done according to environmental regulations. (...) I acknowledge that our resources at both [local and national] level are very low, that is why you noticed it works on the paper, but in reality not that much. Anyway, for the certificates of NEMA... As a government we are supposed to be cautious. You said you are transparent, but they [Water for Production Department] are not. You should meet the Permanent Secretary and ask for a support letter if you want to see the [EIA] studies. It is like soft coercion. We are sorry you have been running in circle, it is the same for us, really this is unprofessional and annoying for everyone.

This explains how the design of the Olweny schemes, which initially took significant account of environmental considerations, eventually shifted towards large-scale infrastructure and design for its rehabilitation, ignoring protests from environmental institutions. Indeed, the updated design appears to be more or less in line with the new on-going political context.

The DSIP shows the further integration of agriculture into agribusiness and the “green” economy. Priority is given to production, emphasising the role played by actors – be they wealthy individuals, companies or international investment groups – able to mobilise capital for investment. Finally, it aimed to remove “constraints to and creating opportunities for private sector investment” (Wedig 2018: 257). The assumption remained that “targeted investment in wealth creation will alleviate poverty” and that it “promotes the advancement of GDP growth based on wealth accumulation and concentration” (Wedig 2018: 256). In the end, according to the same author, the DSIP in fact created an environment in which state intervention is conducive to the private sector. Such a context will open ways to increase the number of irrigation schemes through new funding, such as public-private partnership for instance, in which the “public” contribution is reduced to borrowing funds to pay a private company to build a scheme, and clear the loan by leasing the scheme to another private company running it<sup>128</sup>. Finally, implementing the DSIP before even drafting the National Agriculture Policy, actually published for the “first time” in 2013, clearly illustrates the MAAIF’s weakness in planning and effective implementation, resulting from the liberal reforms (Lakuma *et al* 2017: 40), as demonstrated in Chapter 5 and earlier in this chapter. This also has to be seen in the political context at this time. For instance, the FIEFOC irrigation component was finally implemented from 2011 to 2013, right after the tense 2011 general election. At this time, the authoritarian nature of the regime was also increasingly illustrated by its use of the army “to run ‘civil’ programmes, allegedly as a quick fix to longstanding implementation

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<sup>128</sup> The third section describes some irrigation schemes identified as being funded under this type of agreement.

problems and corruption of the public service” (Wiegratz *et al.*: 19), as illustrated by the army-led Operation Wealth Creation (OWC) headed by General Salim Saleh, Museveni’s brother, to replace the NAADS (National Agricultural Advisory Services) in terms of extension of agricultural services in 2014. The OWC, whose secretariat has been merged with the Office of the President, aims however to provide farmers with inputs but not with extension services, unlike the NAADS. The “operation” rapidly began to be used as a source for patronage, as described by the International Crisis Group:

Reports allege that military veterans are rewarded with jobs and that seed suppliers with government links are awarded lucrative contracts. Most farmers gain little, if any, benefit because the inputs are of low quality, provided at the wrong time of year or unsuitable for their location. Some complain the program favours pro-government beneficiaries. More significantly, because the military lacks the expertise of the now withered government agricultural support services, the program is poorly designed. (ICG 2017: 12-13)

The demise of the NAADS and the launch of the OWC took place in a highly mediatised context of fighting corruption – Uganda was indeed identified as the most corrupt regime in East Africa around this time (Inzama 2012). Therefore, delays in implementing the FIEFOC irrigation component were mostly imputed to the MAAIF’s lack of implementation capacity it was initially in charge of the programme. This came at a time when the well-known and long-lasting NAADS were disbanded, officially for corruption, which also contributed to officially justify transferring the mandate to the MWE. Indeed the NAADS, designed under the PMA and whose secretariat was created in 2001 by an Act of Parliament to provide an advisory extension service to the rural population, became a rather powerful agency over the years. Operating on a “demand-driven” system, they were “a darling of donors”, which allowed them “to establish solid roots within Uganda’s decentralized local government structure – something the parent ministry had failed to achieve since the enactment of the Local Government Act, 1997 – due to NAADS’ access to donor resources” (Bategeka *et al.* 2013: 23). Nevertheless, transferring the mandate for the FIEFOC irrigation component from the MAAIF to the MWE was significantly linked to politics, as is the boom in the irrigation sector that occurred after that, lauded by international actors whose changing paradigms were now focused on “greening” the economy based on the neoliberal model, and more particularly on renewed focus on agriculture in adapting to climate change.

Thus, on the one hand, thanks to the increasingly technocratic orientation of international and national trends, the water sector within the MWE saw its influence growing because the

environment sector did not gain much influence through new policies. The political configuration analysed in Chapter 5, at the end of Museveni's first decade in power, had thus only become further accentuated since then. Meanwhile, on the other hand, the neoliberal model included in the developing agricultural model highlighted the role of the private sector, although the importance of the state revived to some extent. Nevertheless, the MAAIF is a weak, poorly funded ministry, within which public initiative for agriculture is highly segmented with numerous parastatal agencies. This situation is accurately reflected in the FIEFOC programme, since the MAAIF, despite being the ministry initially responsible for it, saw its mandate transferred by presidential directive to the MWE in order to finally carry out the irrigation component of the programme. Museveni's support for the MWE in preference to the MAAIF continued, as we will see in the following section, significantly influencing a technocratic approach to the irrigation sector, as well as integrating it into growing clientelism and patronage networks. This trend, leading to a booming irrigation sector, was justified by the rhetoric of adapting to climate change by further economic growth, which emerged out of the 2008 crisis and was promoted by civil servants. Indeed, as illustrated during interviews with the Assistant Commissioner at the Water for Production Department, and the Director of the Water Development Directorate:

Five years ago, irrigation was not a big deal... Now it is like 50% of my time. This is because water for irrigation, it is an input to adapt the climate by increasing productivity. The end result is putting money in farmers' pockets, help them to market properly. So it is linked. (Interview with the Assistant Commissioner at the Water for Production Department, 31/10/17)

Population is increasing and climate is changing, so there is no solution. Whether you like it or not, it [the irrigation schemes] has to work.

-So this [irrigation] is because of climate change?

-Well, that was between you and me, for explanation. (...) But it is not rocket science. It rains, so water is there, you store it, you use it. And we have plenty of water. (Interview with the Director of the Water Development Directorate, 06/11/17)

In conclusion, the FIEFOC programme appeared to be integrated into a political trend specific to Uganda, as it came out of a shift towards "pro-poor" policies and more particularly a populist return to agriculture, in the context of an increasingly militarised regime. It thus appeared in a context in which the NRM state's exercise of power became increasingly authoritarian over the years, entering an era of developmental nationalism in which the FIEFOC programme was based. Funding for reviving irrigation schemes was secured by cleverly combining them with forestry, a bit more than half of the programme's initial budget being allocated to this component. This shaped irrigation schemes with an extractivist and

productionist approach, thus undermining the possibility of questioning the Chinese-inherited design model alongside policies that we will now focus on. Coupled to the 2008 world crisis, which stimulated a renewed interest among international institutions in agriculture and irrigation, a “pro-irrigation” rhetoric was built upon the dominant concepts of food sovereignty and climate-smart agriculture, integrated into a wider “green” economy approach. Nevertheless, these trends appeared to exacerbate power balances previously identified within governmental bodies. Indeed, the “pro-irrigation” approach came after political willingness to revive irrigation schemes. The discourse conveyed in the public domain appeared thus rather a retrospective justification of the technocratic approach used in the schemes, overshadowing the weighty political issues at the origin of their revival and contributing considerably to shaping the booming irrigation sector, as we will now see.

### 3. A NEO-PATRIMONIAL APPROACH TO PUBLIC ACTION FOR IRRIGATION (2012-2019)

Finally, this section analyses the political dimension of public action for irrigation. Indeed, we have demonstrated that the irrigation sector emerged out of political strategies to help the authoritarian NRM-state apparatus to maintain its grip on power, retrospectively justified by politically correct discourse shared with donors. We will now analyse how the interweaving of the irrigation schemes – starting with the FIEFOC programme – with politics shaped the sector by creating opportunities for neo-patrimonial practices and thanks to the prominence of underlying power balances. In this context, neo-patrimonialism is understood as a political regime under which state resources are used for personal benefit, patronage and clientelism. In this sense, the way in which neo-patrimonial politics apply to the development of policy and interventions develops the ability of powerful actors to divert state resources for private gain (Cromwell & Chintedza 2005). More specifically, some authors have indicated that certain food and agricultural policies are designed to support “neo-patrimonial logic rather than objectives of food security or poverty reduction” (de Grassi 2008: 108). This is not without recalling the recent and populist agricultural orientation of politics, nor the “pro-irrigation” rhetoric developed in Uganda to justify the return to irrigation schemes. Rather, this trend should be seen in the context of the NRM-state apparatus’ unprecedented needs for patronage and clientelist networks in order to survive, when “the co-optation politics of the NRM has probably reached its limits” (Perrot *et al.* 2014) and a new, lucrative sector such as irrigation could represent new economic resources to feed such networks.

Such dynamics are often encountered and highlighted in the literature on the political ecology of water governance, according to which many large-scale hydraulic development projects were conducted in order to achieve political rather than economic or productive goals (Holden & Thobani 1996, Berkoff 2001), thus creating opportunities for rent capture strategies to be deployed, deeply embedded in social and political structures (Briscoe 1999). Such analyses further highlight the necessity to “examine the convergence of interest of the most powerful actors, both public and private, around capital-intensive solutions and political options likely to orientate the resulting profits towards those who hold power”<sup>129</sup> (Molle 2012b: 229). Indeed, decision-makers often favour increasing the water supply, as reflected in Uganda’s booming irrigation sector, with technological solutions relying on large-scale infrastructure development. This will not therefore be analysed independently of their personal interests, which are analysed in depth in this section.

The first subsection explores how the MWE imposed itself in the irrigation sector by emphasising its skills in the dominant engineering sciences. We go on to demonstrate that, as an already influential institution, the MWE could thus better position itself against the MAAIF to become the main executive agency for irrigation schemes, as shown in irrigation policy making. Finally, we analyse how such domination led to irrigation scheme design being orientated towards a technocratic approach, with a high level of private sector involvement. The second subsection explores how the MWE and MAAIF, caught in a situation marked by a power balances and struggles, deployed strategies to obtain mandates in the irrigation sector and, therefore, access and divert resources linked to those schemes. Finally, the third subsection explores Museveni’s personal interests in the irrigation sector, since the President had previously appeared as a major actor in public action for irrigation, ultimately arbitrating the struggle between the MWE and the MAAIF to obtain mandates, and personally leading discussions with foreign partners. While some of the issues identified, such as controlling populations and land, were not new, we will show that others are specific to the Ugandan political trend under an authoritarian regime. Finally, the political agronomy of irrigation in Uganda reflects a coercive neoliberal model moving towards an agro-extractive economy, integrated into an enclave development model, of which infrastructure-heavy irrigation schemes appeared to be one of many facets.

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<sup>129</sup> Translated from the French.



### 3.1. The domination of the MWE and water engineering

This section focuses on the dominance of the MWE and water engineering in irrigation schemes. Indeed, such dominance contributed to strengthen the MWE's grip on the new public action for irrigation, thus contributing to a process of co-construction of technology and social order (Jasanoff 2004). In this way, as stated by François Molle, "bureaucracies in the hydraulic sector (...) seek to replicate themselves, through ensuring continuity in their budget, as well as to improve their professional legitimacy"<sup>130</sup> (2012b: 229). We will thus highlight some of the relationships between science, technology and decision-making, by depicting the interplay between technological choices and politics in Ugandan public irrigation policy. Such an approach, as encountered in Science and Technology Studies (STS), relies on the assumption that "scientific knowledge cannot be separated from politics and associated policies", but in fact they "co-evolve in response to each other" (McFarlane 2003: 789). This also led to the fact that the irrigation scheme model inherited from the 1960s and its impacts were not questioned, and thus continued to be designed and implemented in a manner that is technocratic, top-driven and dissociated from the reality on the ground, as seen in Chapters 2 to 4.

It should be recalled that Museveni directed that the mandate for the FIEFOC programme should be transferred from the MAAIF to the MWE, delaying the irrigation component after the programme's launch. While the official rhetoric pointed to the MAAIF's lack of effective capacity, this shift of executive agency can also be seen in more strategic ways. Indeed, favouring the MWE reflects the dominance of engineering, as will be seen first. Moreover, it also shaped public involvement in irrigation thanks to power balances between the MWE and the MAAIF, as we will show secondly. Finally, we show how this MWE dominance imposed a particular view of irrigation, marked by neoliberal practices coupled with a technocratic approach. This interaction between the dominance of water engineering and politics created opportunities that enabled public involvement in irrigation to become part of a neo-patrimonial trend.

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<sup>130</sup> Translated from the French.

- **Instrumentalising the hegemony of water engineering**

Indeed, engineering is usually introduced as a universal and context-free “distinct species of science” (Downey & Lucena 1995: 169), contributing to make the reality “socially constructed to create ‘truths’ that acquire rule-like status” (Shrum & Shenhav 1995: 631). In this sense,

Practices, processes, and national policies are adopted, transformed, and reproduced not necessarily because their technical superiority has been demonstrated but owing to participants’ beliefs in the efficacy of certain ways of doing things. (Shrum & Shenhav 1995: 632)

The MWE’s claim to the mandate over irrigation schemes is based on the belief that their design and implementation requires construction engineering. Moreover, having the mandates for the irrigation sector leads automatically to favouring medium and large-scale irrigation schemes, since MWE’s civil engineers<sup>131</sup> are not taught to build small-scale, extensive irrigation schemes, but to carry out construction work. As often pointed out in Science and Technology Studies regarding knowledge production and circulation, engineering studies are often placed in different categories – a “demarcationist” approach that “has served the important political goal of legitimizing direct academic attention to engineering” (Downey *et al.* 1995: 169).

In this way, the study of technology in engineering education is approached outside its social context, contributing to a vision of technology as universal and non-contextualised. In Uganda, for example, engineering studies are also categorised. The College of Engineering, Design, Art and Technology at Makerere University, from which most of MWE’s engineers come, offers nine Bachelor of Science degrees – none of them specialising in water management, but rather in Civil Engineering, Mechanical Engineering or Construction Management – and two Master of Science degrees: one in Geo-Information, Science and Technology, and one in Construction Management. As highlighted during several interviews, the educational background of these civil engineers seems to hardly predispose them to take into account the social and institutional dimensions of irrigation schemes, nor to comprehensively integrate the different dimensions of water into schemes. There would thus appear to be significant similarities between development agents, such as the former Agriculture Officers described in Chapter 4,

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<sup>131</sup> It is worth noting that many interviewees such as Assistant Commissioners, Commissioners or heads of directorates in the MWE have a degree in Engineering Sciences.

and the MWE's engineers, who are civil servants, in terms of senior officials' lack of contact with the realities on the ground. It would thus appear that this gap, prominent during the former wave of irrigation schemes in the 1960s (Bertoncin & Pase 2012), is not new. It is rather that the technocratic approach to irrigation schemes has found a new rhetoric with new paradigms. At the end, there is narratives, not only within the MWE but more widely among both civil servants and people in general, that engineering – a symbol of modern science and technology, in a similar fashion to the “Green Revolution” technological package – is key to successful development projects. Civil servants thus justify the scope of their mandates, particularly within the MWE, while it disadvantages the MAAIF due to its weaker capacity. This is, for example illustrated below by interviews with the Director of the Directorate of Water Development and with the Acting Head of Agricultural Infrastructure, Mechanization & Water for the Agricultural Production Department:

The MAAIF for example, they could have a mandate, but who has the job? The expertise they have is not about irrigation scheme. We have the engineers here, not them. That's why the MWE is the executive agency instead of MAAIF. If you're the MAAIF, you should not be interested into the water canals, the question you should ask is if there is any crop, that's all. If from the beginning FIEFOC would have been with us, the result would have been different. Because we have the best engineers. (Interview with the Director of the Water Development Directorate, 06/11/17)

The water policy, it states that MAAIF is the responsible agency for irrigation. But at this time, it was not a big issue, because irrigation was little. But that was until FIEFOC. Then the President directed that the ministry of water takes over. This was because here, in ministry of agriculture, there was no staff, and weak capacities, that created a vacuum. And the ministry of water, because they were doing water, they had engineers, it gave the wrong perception they would do well with irrigation. (...) Then issues of resources started. The ministry of water, they created the Water for Production Department, they ended up wanting to do everything, to have all mandates. And it created conflicts with ministry of agriculture of course. (Interview with the Acting Head of Agricultural Infrastructure, Mechanization & Water for the Agricultural Production Department, 13/11/17)

Therefore since the FIEFOC programme began, public involvement in irrigation has been defined by engineering. Coupled with the long experience in project management and development industry practices since the International Drinking Water Decade, which significantly empowered the MWE<sup>132</sup>, the ministry of water was officially presented as the

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<sup>132</sup> To compare with the MAAIF and more particularly the “NAADS Empire”, Bategeka *et al.* (2013: 23-24) state: “Like departmentalization, empire building points to a more fundamental institutional problem. It points to the absence of cross-functional work teams within MAAIF. It suggests the existence of weak or no intra-agency, intra-departmental coordination mechanisms. (...) Empire building typically results in *projectized* approach to public service delivery. Projectization routinizes, normalizes and institutionalizes the erroneous culture of 3-5 year donor-funded projects. (...) Project officials reportedly reap substantial monetary, material and/or political

appropriate choice of executive agency for the FIEFOC irrigation component. In this way, public involvement in irrigation represents a continuation of the power balances identified in Chapter 5 inherited from the neoliberal structural adjustment plans. Moreover, it contributes to reinforcing these power balances, as shortly after official completion of the FIEFOC programme, the MWE became the executive agency for the FIEFOC-2 programme launched in 2016. This decision appeared in public announcements justified by new emphasis placed on Integrated Water Resource Management principles that form part of the programme's rhetoric, as well as the various frameworks developed under the "green" economy approach within the MWE. Nevertheless, since the FIEFOC-2 programme so far displays continuity with the previous programme in terms of orientation and practices, it would appear that the new concepts that supposedly justify its existence – such as climate-smart agriculture and Integrated Water Resource Management – have hardly led to any change. It is rather the case that:

People continue to do what they have always done, but using the currently fashionable IWRM appellation, in order to improve their national and international acceptance and visibility. (...) Design offices have also used IWRM to support and legitimise conventional development approaches and have recycled many hydraulic infrastructure construction projects presented as parts of new "integrated and participative" development plans (...) which, in fact, differ little from earlier plans. (...) Development banks and cooperation agencies have also often pursued their rural development projects by enveloping them in a rhetoric relating to the management of large or small watersheds. In the same way that they invariably contribute to reducing poverty, all their initiatives and projects have regularly been presented as accomplishments of IWRM.<sup>133</sup> (Molle 2012a: 69)

Making the IWRM approach a significant part of the FIEFOC-2 programme, while it was more or less absent from the previous one, thus contributed to legitimising the allocation of the mandate to the MWE, despite the questionable results of the first programme. Moreover, at around the same time, the MWE was mandated to rehabilitate the Olweny irrigation scheme. While it was eventually funded by the government, initially for UGX49.7 billion<sup>134</sup>, the

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rewards or incentives. In the ministry for finance, for example, the directors of donor-funded projects earn between US\$4,000 - \$10,000 per month, depending on their negotiating power with donors (...). This pay dwarfs the official civil service salary of Shs1,500,000/= or about \$652 which is paid to the top-most official civil servant – the Permanent Secretary. However, off-the-record government interviewees suggested that the senior civil servants (who do not necessarily work directly on donor-funded projects) also benefit from project funding – for example by accessing 4x4 project vehicles, computers or even allowances. However, these are deemed to be less than the benefits reaped by projectized staff."

<sup>133</sup> Translated from the French.

<sup>134</sup> About US\$15 million at this time.

FIEFOC-2 programme was once again based on a small grant from the Nordic Development Fund coupled with a loan from the African Development Bank, budgeted at a total of US\$92 million. Beside the forestry component, the programme includes the establishment of five new irrigation schemes, continuing on from the first programme, which was not assessed, either by the government or funding agencies. In an interview, this absence of follow-up was justified by “several visits in the field” conducted during the FIEFOC programme, based on the fact that the AfDB did not request a project evaluation to be conducted (interview with an Agriculture and Rural Development Specialist at the AfDB, 24/11/17). The FIEFOC-2 programme serves the AfDB’s strategy across the continent to address the needs of youth. AfDB communication therefore introduces the FIEFOC-2 programme as part of the ENABLE Youth concept developed by the bank and implemented in Uganda as well – following the international trend of focusing on empowering youth through entrepreneurship and agri-business approaches. For the Nordic Development Fund, the second programme is justified by its relationship to climate-smart agriculture and sustainable natural resource management through agri-business<sup>135</sup>. Nevertheless, neither IWRM principles nor other fashionable concepts, despite being instrumentalised to increase the legitimacy of projects, seem to have led to changes in design approach or practices between the first and second programmes.

- **The highly political development of the National Irrigation Policy**

The FIEFOC and FIEFOC-2 programmes were thus placed under the aegis of the MWE, in a context in which the agricultural sector was publicly accused of corruption and the MAAIF lacked capacity. Indeed, given the rhetoric emphasising the importance of the sector, the budget allocated to agriculture remains low<sup>136</sup>. Since the irrigation sector was growing and the balance of power was moving to the MWE, conflicts with the MAAIF grew as well. The National Irrigation Policy and National Irrigation Master Plan were significantly delayed, since the joint drafting process illustrated the highly conflictual relationship between the two bodies. Indeed,

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<sup>135</sup> The NDF’s project manager however appeared to be unwilling to discuss the NDF’s involvement in the FIEFOC and FIEFOC-2 programmes.

<sup>136</sup> It was estimated for example at 2% of Uganda’s national budget for the 2015/16 financial year (Barungi *et al.* 2016: 6). This situation “has created spaces for donors to maintain a significant influence on the sector” – as we will later see with the Japanese cooperation agency regarding the rice and irrigation sectors – since this has led “low public spending on agriculture [to create] a funding vacuum that is being filled (effectively or ineffectively) by donors” (Bategeka *et al.* 2013: 26).

in line with the Green Growth Development Strategy published in 2017, the National Irrigation Policy appears depoliticised and purged of all potentially sensitive issues. The rhetoric is based on scientific statements, justifying and approaching irrigation through dominant, seemingly neutral and consensual discourses. The latter thus focus on climate change – following the 2015 National Climate Change Policy, – food security, the private sector and investments in lucrative and commodified agricultural production, best practices such as local participation, sustainable Integrated Water Resource Management and the value-chain approach. Finally, it is worth noting that the struggle for mandates between the MWE and the MAAIF was not definitely resolved with the release of an irrigation policy. Indeed, the National Irrigation Policy hardly differentiates their roles as it states that:

The Ministry in charge of agriculture shall be responsible for on-farm which refers to development of hydraulic infrastructure, associated engineering works and irrigation accessories comprising of conveyance from farm gates to farmers' fields and water use management. The Ministry in charge of water shall be responsible for off-farm interventions which refers to development of hydraulic infrastructure and associated engineering works comprising of water abstraction and conveyance to farm gates. (Republic of Uganda 2017: 20)

Coupled with a list of numerous activities, of which several are shared by both ministries, this contributes to maintaining a certain level of flexibility for the President's Office to decide which ministry to favour through directives, as occurred in several cases that we examine later. This situation thus maintains competition between the two ministries to attract funders and mandates in the irrigation sector. Nevertheless, the MWE, being, according to the policy, in charge of most of the feasibility studies as well as medium- and large-scale schemes, has seen significant resources coming under its aegis. Such responsibilities were highly disputed with the MAAIF until final approval of the policy, as shown by the previous draft of the policy, dated November 2017. Indeed in this draft, studies such as Resettlement Action Plans (RAP) and Environment and Social Impact Assessments (ESIA) were a shared responsibility, while mandates for irrigation schemes were not differentiated on the basis of their scale. Those changes favouring the MWE reflect a continuous power balance between the two ministries, as stated by the Acting Head of the Agricultural Infrastructure, Mechanization & Water for Agricultural Production Department during an interview (13/11/17):

This irrigation policy for example, it has been going on for years and years. Because the ministry of agriculture was not consulted in the process, so far, draft was refused. Same thing with the irrigation master plan. It is unprofessional how you find it on [the MWE's] website, since it has never been approved by Cabinet and was refused – because of absence of consultation with ministry of agriculture as well. But at some point, we decided to move on from the mandates

issue. (...) Now we are working on this irrigation policy together, we also wrote down terms of references for consultant to write a new irrigation master plan. We gave ministry of water more mandates because it is what they wanted, but now we agreed that irrigation is a shared responsibility.

Both ministries indeed aim to lead the drafting process for the National Irrigation Policy, and for the National Irrigation Master Plan, in order to extend their scope of work and thus build on legitimacy, power, economic and symbolic resources. In this light, the official shared responsibility seems more like a compromise allowing both ministries to compete with each other, rather than an incentive to cooperate. Moreover, as highlighted in a number of interviews, it seems that this compromise has been reached mostly thanks to the recent replacement of several retiring civil servants at the MAAIF by former engineers from the MWE.

- **The MWE's vision of irrigation schemes as the reference in the sector**

Finally, the domination of the MWE and water engineering has had a significant impact on the design and management of new irrigation schemes, as it has led to the focus being mainly on hard components – i.e. the large-scale hydraulic infrastructure. Indeed, the social and institutional dimensions of the schemes were perceived as minor and beyond the scope of engineers. Consequently, those dimensions remain significantly absent from the irrigation sector. Indeed, a significant part of the budget allocated to irrigation schemes is spent on preliminary and design studies on the one hand and on construction work on the other according to conducted interviews. This shaping of public involvement and, finally, public policy, highlights another essential facet of the development of the irrigation sector: the manner in which it is integrated into neo-patrimonial networks, as shown in the following sections.

The choice of medium and large-scale, technocratic schemes was explained during several interviews mainly by their feasibility, linked to the top-led nature of such schemes, and their supposed economic advantages, as illustrated by an interview (31/10/17) with the Assistant Commissioner of the Water for Production Department:

We will need all type of irrigation. But big ones are easier to implement. It is easier to deal with one co-operative society rather than with two hundred farmers, you see? Also there are economy scales because it is bringing them all together. But we need all types because they serve different

purposes. We take care of the big ones, and development partners of the small ones. The level of technology, of engagement, is different.

Furthermore, Chapter 5 showed how, since the 1990s, the MWE has been exposed to donors' requirements and has, over time, tended to adopt the dominant discourses and paradigms. This contributed to the MWE significantly involving the private sector in each step of irrigation scheme design, implementation and management processes, in line with previously-introduced neoliberal principles. Indeed, it relies on contracting and promoting the private sector over public ventures, using tendering processes to officially contract companies by playing on their competitiveness. This approach is also used to address the acknowledged institutional failures of the FIEFOC irrigation component in terms of operation and maintenance, attributed to the MAAIF, by promoting further involvement of private operators, as observed by the Director of the Water for Development Department during an interview (06/11/17):

For us, we know. We have the private sector here, because I don't want engineers to replace the private sector. At the end, we build capacity, in the MWE, but also in the private sector.

Significant experience of perceived successes in urban water supply is also put forward by the Water for Production Department to promote such public-private partnerships, in line with the second National Development Plan and the Agriculture Sector Strategy Plan (2015). The interweaving of the engineering approach with promotion of the private sector is further illustrated by the willingness to operate and maintain irrigation schemes privately in the short-term future in an unprecedented way. This trend was for example illustrated during an interview (31/10/17) with the Assistant Commissioner at the Water for Production Department:

If no fees, the irrigation schemes will die. And community management does not work. So we are looking for solutions. So the Water Users Associations shall choose a private water operator; they have already this organisation so it is not something new. Private operators shall be in charge of operation and maintenance, doing business plans, organize trainings... It is needed instead of a co-operative society of a WUA because it needs educated people, proper technical skills from the staff. They would have authority because they are paid and chosen. It will not be optional, and they will have to pay fees. They already have some scheme saving groups for example, so, it would be built on existing things.

The gap between the top-level vision of schemes and the reality in the field is thus significant in the development of public action for irrigation, as highlighted by numerous and sometimes



violent conflicts in areas where the schemes are implemented – as illustrated in Chapters 2 to 4. In this way, the development of the Ugandan irrigation sector is hardly different to that in numerous other Sub-Saharan African countries in the 1960s, a period of intense promotion of irrigation schemes (Faggi 1990, Bertoncin & Pase 2012). Indeed, while discourses justifying irrigation schemes “designed in ignorance of the complexity of local social and power structures”<sup>137</sup> (Molle 2012b: 232) have changed, there appears to have been significant continuity in practical terms. Moreover, as highlighted in the literature, the political dimension of public involvement in irrigation has remained prominent. Indeed, as we will now see, it appears that the boom in the irrigation sector corresponded to the unprecedented need for patronage in order for Museveni and the authoritarian NRM-state apparatus to survive.

In conclusion, the political struggle which quickly appeared between the MWE and the MAAIF to become the executive agency for mandates relating to the increasing number of irrigation schemes must be examined in the light of political and technological co-construction. The domination of engineering sciences allowed the influential MWE to better position itself to initially obtain mandates for the FIEFOC programme, in comparison to the MAAIF, weakened by neoliberal reforms and the context of public blame for corruption. Indeed, in this programme the irrigation component relied on rehabilitating previous schemes marked by the technocratic, productionist approach of the “Green Revolution”, and was thus in line with construction engineering, which fits in with the background of many MWE civil engineers. Finally, with the subsequent FIEFOC-2 programme, the approach to irrigation schemes hardly changed in practical terms, although they were made to be part of new hegemonic concepts such as climate-smart agriculture and Integrated Water Resource Management. This led the MWE to maintain a certain dominance over the sector, as seen in the drafting process of the National Irrigation Policy. Therefore, the MWE could impose an engineering science approach to irrigation, which allowed the ministry to legitimise itself as the main institutional actor in the sector in the eyes of donors, as the same time disqualifying its main institutional competitor, the MAAIF. The MWE vision of irrigation schemes thus became dominant, linking the technocratic approach to neoliberal processes of private sector involvement in public action. Nevertheless, this created opportunities to interweave public action for irrigation with underlying practices of corruption, patronage and clientelism, thus co-constructing irrigation politics with the ever-increasing neo-patrimonial operation of the NRM-state apparatus.

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<sup>137</sup> Translated from the French.

## 3.2. Accessing and diverting irrigation scheme resources

This section explores in more detail the strategies deployed on the one hand by the MWE to benefit from its dominance and on the other by the MAAIF to attract mandates and donors despite its weaker position. We begin with a closer examination of the “land titling” case that occurred during the rehabilitation of the Olweny scheme described in Chapter 2. We then look at how the MWE and the MAAIF instrumentalised the growing importance of feasibility studies in the development sector to attract mandates and donors, taking the example of the instrumentalised studies of the Japanese International Cooperation Agency (JICA).

The struggle between the MWE and the MAAIF to obtain mandates for irrigation schemes indeed appears to be linked to the resources such mandates bring to civil servants. Since the two ministries competed with each other during the drafting of the National Irrigation Policy and the National Irrigation Master Plan, the outcomes of this policy-making process did not resolve but rather reinforced the existing power balance between them, as we have seen. For the MAAIF, this struggle was mainly about obtaining responsibility for programmes and projects, scarce at this time but necessary to obtain access to material advantages, provide resources for networking, and build on the ministry’s political influence. For the MWE, we demonstrated that the interest in obtaining mandates was also linked to the private sector. Levels of corruption in the sector indeed seem to be high, resulting in the significant power struggle we have seen since the introduction of the FIEFOC programme, the rehabilitation of the Agoro and Olweny schemes for example provides illustration of corruption. Indeed, before the FIEFOC programme’s mandate was transferred to the MWE by presidential directive, the MAAIF was negotiating for the French cooperation agency (AFD) to fund the rehabilitation of the Olweny scheme, the latter agreeing although on the condition that further feasibility and impact studies be conducted. This discussion was shut down by a presidential directive, around the same time as Museveni micro-managed the FIEFOC irrigation component by transferring the mandate to the MWE. The main reason given for ending the discussions between the MAAIF and the AFD regarding the Olweny scheme’s rehabilitation was the length of time conducting additional studies would take, as well as the newly-found availability of government’s funds to conduct the rehabilitation<sup>138</sup>. The MWE thus gained the mandate of this operation, withdrawing it from the FIEFOC programme. Nevertheless, it seems to have

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<sup>138</sup> See in annex a copy of a letter from the MAAIF addressed to the AFD’s local representative.

been public knowledge within the MWE and MAAIF that using government funds instead of FIEFOC programme money was the result of budget mismanagement and personal enrichment with high salaries and allowances in both ministries (interview with an anonymous informant, 15/11/17). Transferring the mandate from the MAAIF to the MWE can thus be seen as public condemnation of the MAAIF at a time when the agricultural sector was generally accused of being corrupt, as well as presidential micro-management to favour one particular ministry.

Moreover, the MWE, generally favoured by the President in the irrigation sector, also obtained access to the new sector's resources thanks to links between top civil servants and private companies operating in the booming construction and real estate sector, in which lucrative investments have attracted economic elites. Indeed,

with declining donor support and economic growth, the ruling coalition has shifted investment focus away from production sectors to real estate. Uganda's building boom is a consequence of neoliberal strengthening of private property rights and titling all of which underscore a new development (Rubongoya 2018: 107)

In the irrigation sector, for which technological solutions have been oriented by the MWE's dominance towards large-scale land and infrastructure development, relationships were found between MWE's civil servants and private companies operating in the construction sector such as Arch Design Ltd. and Dott Services Ltd. Indeed, it transpires that Arch Design Ltd., responsible for designing the rehabilitation of the Agoro and Olweny irrigation schemes in partnership with a Kenyan firm, mainly specialises in buildings and roads. One informant commented on their work in these terms:

The Kenyans they were fine, they got the contract because of merit, I am sure of it because I was part of the team that choose them. But Arch Design, this company, it is one of those engineers from Water for Production, you see? I remember [their] studies very well. They did such a poor work that we had to stay in a hotel in Mukono for two of three weeks to rewrite the reports with them. We were not happy with their work at all. (Interview with anonymous informant, 15/11/17)

Coupled with the ghost operation of land demarcation tentatively conducted in the Olweny and Agoro schemes, this illustrates how the tendering processes launched by the MWE to involve the private sector is marked by personal enrichment. This process was also illustrated by the case of Dott Services Ltd., responsible for construction work in the Agoro and Doho schemes, which further shows collusion between Museveni's immediate circle and the MWE

to access the resources allocated in the irrigation sector, as shown in the following section. Since the MWE has adopted practices recommended by donors since Museveni's first decade in power, as seen in Chapter 5, the opening of public projects to the private sector, through the tendering process, as promoted by donors, thus appears to form part of neo-patrimonial trends. This is not without impact on the ground as well, as we have seen in Chapters 2 & 3 with the resistance to land demarcation, and in Chapter 3 with the defective work by Dott Services Ltd.

Meanwhile, the MAAIF deployed several strategies in order to attract mandates and donors, despite its state of institutional weakness. While the MWE was allocated the mandate for the FIEFOC-2 programme in 2016 as well, with a budget including US\$70 million for construction work in the irrigation component, the MAAIF indeed aimed to enter the newly booming irrigation sector. While the MWE's legitimacy and interest in the irrigation sector focuses on the medium and large, heavily developed schemes, the MAAIF had been involved in small, extensive irrigation schemes since the early 2000s in partnership with JICA, the Japanese cooperation agency. While the JICA's interest in rice and small irrigation schemes grew over the years, with the implementation of several programmes, the decision to enter the irrigation sector was only recent, and marked by the policies previously highlighted, as illustrated by the interviews below with JICA employees:

Ministries, they just accept what we offer without necessarily having a comprehensive understanding. It's like double standards. I don't know why they should do poor quality work because it is this country, and not one like mine or yours. (Interview with a Planning Advisor at JICA, 07/11/17)

Actually, there is studies, we know that productivity is better with small-scale and highly flexible practices, low capital... but sometimes we also have to respond to the government's demand. Of course it is all about negotiation. Then we wanted to propose also an irrigation agency or authority, an institution that would monitor irrigation in the country. But both ministry of water and ministry of agriculture refused. For once, they agreed on something. (Interview with a Programme Officer at JICA, 22/11/17)

Since the MAAIF was a long-term collaborator of the JICA, the ministry of agriculture became involved in the JICA's project to grant-aid an irrigation scheme. The MWE and MAAIF's refusal of an irrigation authority as proposed by the JICA also illustrates the two ministries' determination to remain outside any institutional umbrella, unless it was placed under their own ministry's aegis. This was indeed shown when the MWE opened discussions with BRL Ingénierie to conduct studies for such an institutional setup, although the discussions were

eventually abandoned. Nevertheless, the JICA finally moved towards establishing an irrigation scheme by conducting 13 studies on various sites, considering that their experience would lead to better results being achieved than through the FIEFOC programme:

We have studied many sites to start an irrigation scheme, of course we had to leave some aside. (...) But this is common sense. Farmers, they don't know what is big development and big irrigation. If they refuse, then it is no point to impose. (Interview with a Planning Advisor at JICA, 07/11/17)

They [previous irrigation schemes] failed because it was just about constructing and handing over. (Interview with a Programme Officer at JICA, 22/11/17)

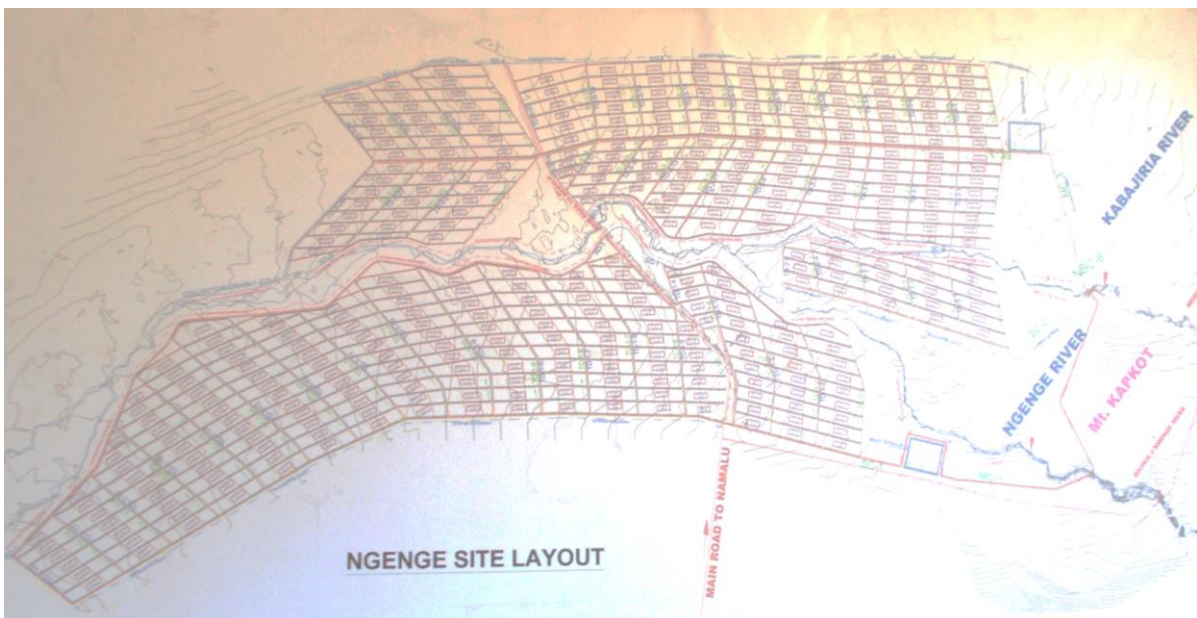
When the JICA chose the MAAIF as the executive agency for any future irrigation schemes the JICA would grant-aid, the MWE's unwillingness to collaborate with the JICA was illustrated by its refusal to provide the technical designs used for the Agoro, Mubuku and Doho schemes, which the JICA considered to be references<sup>139</sup>. Finally, after the JICA had carried out studies of the 13 sites, all located in the Central and East sub-regions where the JICA had the most extensive experience, they were ranked according to their feasibility. The Atari site, covering 680 hectares, was thus selected in 2017, considered by the JICA to be the only potentially viable site for an irrigation scheme. However, it turned out that at least three forthcoming irrigation schemes were identified during fieldwork as being based on the JICA feasibility studies, which were thus skilfully instrumentalised by both the MAAIF and the MWE to gain mandates. Indeed, the ministries used the studies to negotiate loans from the African Development Bank. The MAAIF thus also became the executive agency for the forthcoming Achomai irrigation scheme, budgeted at US\$80 million, while two of the irrigation schemes under the FIEFOC-2 programme led by the MWE correspond to sites studied by the JICA. In the last case, it is unclear whether the JICA studies were used by the MWE in order to obtain the loan for the FIEFOC-2 programme, or in fact after the loan was secured. This would indeed create opportunities for the MWE to divert significant resources allocated to implement them – estimated at around US\$10 million (interview with an Agriculture and Rural Development Specialist at the AfDB, 24/11/17) – by presenting the studies as having been carried out by the MWE. Since we were repeatedly denied access to the documents, although they are meant to be public, the question remains open.

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<sup>139</sup> It should be recalled that the JICA funded some of the irrigation gates at the Agoro scheme, a tour of the Mubuku scheme for selected individuals from the Agoro scheme, and training in water management which resulted in a WUA being created for the Mubuku scheme.



*Picture 54: View of the Ngenge irrigation scheme under construction (Auffray 2018)*



*Picture 55: Layout of the Ngenge irrigation scheme (Auffray 2018)*

Nevertheless, the reasons why the JICA excluded the three sites concerned – Achomai, Ngenge and Doho II – are not technical issues but social. Indeed, the JICA reported a significant level of land conflicts, particularly in the Ngenge study site illustrated above, due to a complex local situation resulting from various factors: a shift from pastoralism to agriculture, recent dynamics of rice growing thanks to small-scale irrigation in cleared swamps brought by new settlers from distinct cultural groups, and the arrival of foreign investors. This situation fuelled a high level of land disputes, and fears of land grabbing. Manoël Auffray, a Master's student who carried out research into the transformation of the rural economy in the Mount Elgon area (Auffray 2018), was thus told by an informant during fieldwork that “the use of irrigation

has provoked strong conflicts between the farmers, especially during the dry season. People don't sleep to watch their fields and channels". Moreover, another informant also told him that "People are divided [about the Ngenge and Atari irrigation schemes]. Some are scared that the government is about to take some land away from them. They feel uncertain". Such observations were seemingly understood by the JICA, while being ignored by the MWE, the MAAIF and the funding African Development Bank. These cases reinforce the assumption that political matters widely prevail in public decision-making and involvement in the irrigation sector, as the possibility of the schemes being smoothly appropriated by local users appeared likely to be compromised. It is also worth noting similarities between the Ngenge design, illustrated in the previous picture, and other schemes encountered in the country such as those at Doho and Mubuku.

Secondly, we will now see how, in order to compete with the MWE in attracting further mandates and donors, the agricultural sector generally finally adopted the MWE's views, sharing the same interest in the sector. This is illustrated for instance in the field of agricultural engineering, which includes water management, that recently appeared in the educational programme of the College of Agricultural and Environmental Sciences at Makerere University. Moreover, an academic article recently published in the *Journal of Irrigation and Drainage Engineering* (Wanyama *et al.* 2017), and written by academics from the latter College and civil servants from the MAAIF – including the interviewed Acting Head of one of the MAAIF's Departments – again illustrates relationships between power, knowledge of water and technology in knowledge production. Indeed, it identified irrigation in Uganda as critical, setting out the background of the technology in the country, before concluding with strategies in order to develop it widely. The article thus shows how the authors legitimised the plurality of dominant concepts and approaches used by the MWE, by publishing them in the form of an academic argument introduced as scientific, and therefore, as a "truth". This vision was also found in another article written by Dr Gamal Elkassar, Assistant Professor at the National Water Research Center of Egypt and Water Management and Irrigation Advisor at the MWE. Moreover, in his article, published by the *International Journal of Advanced Engineering and Management Research*, he depicts the role of the private sector and the cost recovery mechanism in Ugandan irrigation schemes "to pursuit of the achievement of the successful transformation of the three commissioned Irrigation Schemes of Agoro, Mubuku and Doho" (2017: 2016) with, as an overall objective "to support the Ministry of Water and Environment" (2017: 2015). In this way, the MWE's dominance of the irrigation sector leads actors to

embrace its vision, in a similar fashion to that in which Ugandan actors adopt donors' views to reinforce themselves, or more simply to guarantee the survival of their institutions.

This process is also reflected in another irrigation scheme the MAAIF was negotiating at the time of fieldwork. Indeed, the MAAIF demonstrated that, despite its weak capacity, the ministry had clearly adopted the dominant concepts and practices of the development sector as the MWE did much earlier. This was illustrated by the MAAIF successfully responding to tender processes, including one for the Islamic Development Bank which led to a loan agreement in 2013 to implement a new irrigated rice scheme in the Kibimba area (interview with a Project Coordinator at the MAAIF, 12/12/17). The project was designed as a public-private partnership with Tilda Ltd., the company currently running the Kibimba scheme since the privatisation of public ventures in the 1990s, and with Pearl Rice Ltd. Nevertheless, while Pearl Rice Ltd. signed a memorandum of understanding, Tilda Ltd. pulled out in 2014 after unsuccessfully attempting to negotiate a preferential tax regime. This considerably slowed down the project, since the scheme's design partly relied on the extension of the existing Kibimba scheme, which was no longer considered after Tilda Ltd. pulled out. Finally, new studies had to be carried out to relocate the project site and establish a new design. In 2016, another memorandum of understanding was signed with Pearl Rice Ltd. and a co-operative society seemingly established by the MAAIF for the purposes of the project, the latter being renamed "Enhancing National Food Security Through Increased Rice Production", for a cost of US\$34 million. While the process remained highly political, with the MAAIF seemingly being pressured to favour one company in particular, it also demonstrates the MAAIF's ability to finally carry on discussions with a development agency and gain a mandate, though on a smaller scale than the MWE. Indeed, the MWE gained mandates more easily as a result of its dominant position coupled with Museveni's favouritism, as the following analysis shows.

In conclusion, since the MWE and the MAAIF are competing with each other rather than collaborating to obtain mandates and donors in the irrigation sector, they deploy various strategies in order to access and divert resources created by public action for irrigation. By using its dominant position to shape the technological solutions promoted in the sector the MWE was able to reinforce the promotion of irrigation in the form of medium and large-scale schemes. Such decisions appeared closely linked to neo-patrimonial dynamics as links were established between MWE civil servants and construction contractors and consultants. This again highlights how Ugandan actors, such as the MWE, skilfully integrate the dominant



approach such as tendering processes with the private sector, as promoted by donors, in networks of patronage, clientelism and corruption. Meanwhile, another identified strategy to obtain mandates successfully used by the MWE and the MAAIF consisted of diverting feasibility studies conducted by the JICA. Indeed, although the JICA considered the studied sites to be inadequate, it allowed the ministries to secure new irrigation schemes with loans from the African Development Bank, as well as, potentially, diverting budgets toward ghost studies by using those conducted by the JICA. This reinforces the prevalence of power as a reason for public involvement in irrigation, over food security, climate-smart agriculture or more simply production objectives. Finally, while the MAAIF mostly obtained mandates thanks to its long-standing collaboration with the JICA, the MWE obtained mandates as a result of its dominance and its dominant engineering solution coupled to political needs for neo-patrimonial regime, as highlighted by Museveni's preference for the MWE. In this sense, as demonstrated by the concept of co-production of power and knowledge in Science and Technology Studies in relation to public involvement in irrigation, "power does not reside in particular institutions and social actors but may be co-produced within particular governance practices, sociotechnical interactions, and cognitive assumptions" (Irwin 2008: 589). This can be yet further demonstrated by presidential interests in the irrigation sector, which is the focus of the following subsection.

### 3.3. Presidential interests in irrigation schemes

This final subsection explores distinct presidential interests encountered in public policy-making and involvement in irrigation. Indeed, Museveni previously appeared as a main actor in this process, micro-managing mandates in the sector as well as lobbying among donors and the private sector. We thus identify the issues at stake resulting from such activities in several steps. First, we briefly explore the implications of the media strategy of the "pro-irrigation" rhetoric used by Museveni, and how he communicates it to the population. Then, analysing Museveni's political interest in public involvement in irrigation, we show how irrigation schemes, in a similar fashion to analyses found in the literature since the 1970s, are used by political powers to subordinate populations and control land – the first economic resource in many agrarian societies. Finally, we contextualise the analysis of the political nature of public action for irrigation in the general orientation of the country towards an agro-extractive and enclave economy, requiring unprecedented resources under Museveni's regime, leading to an ever-increasing national debt.

- **The “pro-irrigation” rhetoric’s mediatisation**

Over recent years, public messages focusing on the promotion of irrigation have become more frequent and have been relayed by the media as well. This populist trend was significantly emphasised during the elections, as 2016 and 2017 were marked by a long, dry spell, which led food prices to increase by a third between May 2016 and May 2017 (ICG 2017: 8). Since then, Museveni has notably increased the number of speeches and statements actively promoting irrigation technology, including through social media, as illustrated below, thus targeting the large part of population who had just coped with great difficulty with the 2016-17 dry spell:



*Figure 37: Museveni tweets on irrigation in 2016 (Twitter)*



*Figure 38: Museveni tweets on irrigation in 2016 (Twitter)*

Such a “pro-irrigation” presidential discourse is also probably linked to the first government’s experience with irrigation schemes, in the form of the FIEFOC programme, which empirically demonstrated their political potential. The annual Presidential State of the Nation speech thus reflects this new trend. While in 2014 mentions of irrigation were brief – a couple of sentences referring to progress with rehabilitation of the irrigation schemes (Museveni 2014) – starting in 2017 Museveni further emphasised the role and importance of irrigation, presenting it as an answer to a water crisis caused by low water retention capacity. In this way, the Ugandan regime’s approach to irrigation reflects the global change in perception of hydraulic development that was occurring in the 1990s. Indeed, when fears of a worldwide water crisis

appeared, they led to responses focusing on means of increasing the water supply, rather than questioning demand for water and how it is used (Julien 2012). This also contributed to depoliticising the “pro-irrigation” rhetoric as it focused on stating the lack of availability of water in neutral, technocratic and seemingly scientific terms. This avoided talking about the social and political reasons why people in rural areas were in need of more water, such as, for instance, the importance given to commodified agriculture, which led to cropping intensification or abandoning of “traditional” crops for marketable ones. Indeed, such practices hardly seem well-adapted to an unreliable climate which had for a long time been affected by the El Nino phenomenon. Promoting irrigation as a new public policy was thus presented as a rational decision, taken in the public interest and not for political reasons, therefore justifying the means chosen: large-scale hydraulic infrastructure development, working alongside private stakeholders, as illustrated by the following quote from Museveni’s speech:

The other issue is irrigation. We cannot depend forever on rain-fed agriculture. In the second season of last year (Ituumba) when there was stampede about the ‘drought’, there were at the same time the second highest recorded water-levels since 1900. The water level last year, in the first season (Katuumba), at Entebbe reached the level of 12.70 metres. That water level was only exceeded by the record water level of 1964 when it reached 13.6 metres at Entebbe. In fact, since I follow those issues, I was very worried that the landing sites and piers would be swallowed up by the water as happened in 1964. Indeed, part of the shoreline was flooded. Even today, the water level at Entebbe is at 12.13 metres. Ever since 1964, the water level in Lake Victoria has never gone back to its 1959 level of 10.76 metres or that of 10.28 metres in 1923. Therefore, to talk of ‘drought’ in Uganda is an irrationality. The answer is irrigation. (Museveni 2017)

Finally, in 2019, in his priority highlights for the new year (New Vision 2019) and State of the Nation’s speeches (Museveni 2017, 2018, 2019), promotion of irrigation continued with an emphasis on irrigation schemes only, in the form of listing the completed, on-going and forthcoming schemes. This reflects the central place of the schemes in the developing irrigation policy, whose political dimensions will now be analysed, mainly in the light of Museveni’s interests.

- **Subordinating the population, controlling land**

As previously highlighted and as encountered in numerous cases in Sub-Saharan African countries, irrigation schemes have contributed since the 1960s to legitimising and reproducing the state’s power by controlling populations and space (Faggi 1990, Zoungrana *et al.* 2003, Bertoncin & Pase 2012). With the delays to the irrigation component of the first FIEFOC

programme, and the growing need for populist “pro-poor” policies, as described above, the rehabilitation of irrigation schemes was included in the electoral strategy, fulfilling promises of bringing development projects to the “rural poor” between the 2011 and the 2016 general elections. As observed by a JICA Programme Officer during an interview (22/11/17),

The President wants to appear relevant to his electorate. When we go on the ground for example, people say that finally the President is fulfilling its promises to bring irrigation technology to them, because he’s sending the Japanese to do so. Everything is political in these matters.

Moreover, the FIEFOC calendar appeared also explicitly instrumentalised by the government through the main media to trade the coming of development projects against votes for the NRM regime – a clientelist strategy often highlighted in post-war studies focusing on the northern Uganda electorate (Branch 2012, Omach 2014).

As previously mentioned, imposing such top-led projects not only demonstrated central government’s power to transform land but also the conditionality of supporting it in order to receive investments and programmes. Moreover, in areas where land remains a highly sensitive issue and a highly disputed resource, such projects also illustrate the capacity of the government to impose their rule through full control of land. This demonstration remains strategic for a government which has been struggling to control land since Museveni’s first decade in power, especially as irrigation schemes lie in a legal vacuum in terms of land ownership, as previously shown. This vacuum, therefore, directly serves the NRM regime’s interests. Indeed it gives the government an opening to forcefully impose its views and actions, fuelling a strategy of hydraulic territorialisation in which the state deploys itself on the ground by creating territories marked by water-related infrastructure. This also results in an unwillingness to address the land ownership vacuum, which would undermine the symbolic capital and land holding of the irrigation schemes from which the NRM regime benefits with a model of irrigation development that uses large-scale infrastructure. For instance, the Chairman of the Uganda Land Commission<sup>140</sup> described during an interview (04/12/17) the way in which the NRM regime manipulates the land issue in irrigation schemes thus:

When you have state power, you can make laws and regulations. It is state power. It is legal in some aspects but it is not written. It is a power you gain with elections, it is the doctrine of eminent

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<sup>140</sup> The Uganda Land Commission is a significant institution, in charge of holding and managing land owned or acquired by the government.

domain. The government has this domain over kings, leaders, individuals. It is a universal doctrine and philosophy. (...) There must be compensations for the irrigation scheme. This people have something in their wetland. It is an equity rule. [However there is] a weakness. Actors are weak, the ones in the frontline. When [someone] for instance gets compensated, on the ground, you will find actually he is not.

This not only illustrates the capacity of a strong actor, such as the NRM-state apparatus, to use a legal vacuum, as well as the complexity of laws, to their advantage, but also the hybrid case of irrigation scheme ownership, which lies at the intersection of several policies. On the one hand, many, though not all, schemes are located on wetlands – owned by citizens but held in trust by the government for conservation purposes only. On the other hand, public land acquisitions are regulated and provide compensation to land users under certain circumstances – with a National Land Policy finally launched in 2013. However, irrigation schemes hardly fall into this category, since the former owners represent most of the new users of the transformed space as well, and therefore these schemes have not so far been considered as public land acquisitions. In the end, the central power gains from not addressing the land ownership issue relating to irrigation schemes, since this allows the government to forcefully implement strategic irrigation, regardless of local land issues and/or resistance to the projects, claiming legality. The absence of clarification on land ownership in the irrigation policy illustrates this strategy – an absence though qualified by the Chairman of the Uganda Land Commission as “a big omission, a human error” (04/12/17). The policy was, however, eventually approved and published in 2018, under the supervision of the Prime Minister’s Office. When questioned on land ownership during an interview (01/12/17), the Acting Commissioner for Policy Implementation and Coordination at the Prime Minister’s Office and chair of the Inter-Ministerial Technical Committee on Water for Production, continued to use doublespeak in her comments:

The idea of an irrigation policy came in 2012, not only because of the lack of coordination of the MAAIF and MWE but also because of donors. They were getting more reluctant to continue looking at this sector, with no overall framework, you see. It is hoped that when the policy passes and is adopted, it will be better. (...) Now... this policy, it is about fighting climate change, enhancing food security, you know. I believe the ministry of lands is also involved, because we have a harmonized approach.

In the end, while the first draft in 2012 briefly mentioned the land issue, stipulating that a “transparent land and water allocation mechanism is needed in order to ensure that all stakeholders are involved in and benefit from any investment that is made” and “that land is

not forcibly expropriated” (Republic of Uganda 2012, annex: 7)<sup>141</sup>, the approved irrigation policy barely acknowledges the “complexity in land user rights” or that “exclusive user rights (...) have been a constraint” (Republic of Uganda 2018: 6) without providing further details. Moreover, the links to existing frameworks that are developed in detail focus on climate change and agricultural production at international and national levels, others being listed only (Republic of Uganda 2018: 18-19). Finally, it is worth noting the mention, for the first time in the irrigation sector, of Resettlement Action Planning (RAP), as the MWE’s responsibility alongside Environment and Social Impact Assessments (ESIA) – meaning that in the absence of clarification of land ownership of the irrigation schemes, a certain form of what could finally be qualified as land grabbing is considered at the highest level (Republic of Uganda 2018: 2). The MWE’s influence on this matter might have been significant, as illustrated by comments from the Director of the Directorate of Water Development regarding land ownership during an interview (06/11/17):

Who owns? We need to discuss about it. In my opinion, it is public land, so, land is owned by Government. And all Government’s land is under the Uganda Land Commission. We shall title all the irrigation schemes.

Moreover, influence from donors, especially the World Bank, and from practices found in other extractive sectors such as oil, probably played a role in introducing Resettlement Action Plans to the irrigation sector, equally illustrating its increasingly extractive nature. This trend is further illustrated by the two years spent by Museveni in lobbying to amend Article 26 of the Constitution, in order for the government to take compulsory possession of land in the case of infrastructure and investment projects, before compensation is finalised. This amendment indeed appears to have been contested, both by the opposition and within the NRM party, although there was support from international institutions such as the European Union on the matter (Daily Monitor 2017c).

Finally, the importance of controlling land and subordinating populations was clearly illustrated by two cases we will now present. The first is the Mubuku irrigation scheme, located at the foot of the western Rwenzori mountains. Established near Kasese town in the 1960s and covering about 580 hectares, the Mubuku irrigation scheme was designed as a resettlement and demonstration scheme. Water intakes from the Sebwe and Mubuku rivers are meant to feed a gravity system similar to those in Doho and Agoro. In 2012, about UGX19

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<sup>141</sup> See in annex a copy of the drafted National Irrigation Policy as presented to Cabinet in 2012.

billion<sup>142</sup> were allocated to the scheme's rehabilitation under the FIEFOC programme and carried out by the MWE as a one-year project. However, in the absence of clear land ownership – users claiming land belongs either to them or to the “scheme”, others, including the President himself, considering the land to be public or even belonging to the government, yet others claiming customary ownership on it – the rehabilitation has attracted the attention of some actors who wield significant bargaining power. In reaction to the growing land dispute and the forthcoming extension of the Mubuku scheme under the FIEFOC-2 programme, in 2015 Museveni issued a presidential directive to the district authorities that they should not allow residents to claim land at the site, despite unclear and changing boundaries, as the scheme was supposed to develop with the new Mubuku-II scheme, commented upon thus by the Daily Monitor (2017b):

The visibly irritated President told the District leaders that the scheme belongs to government and those using it were tenants, not owners. (Daily Monitor 2017b)

Since then, the land question has been regularly mediatised, as land users in the scheme resist the land claims. Thus in 2017, a significant land dispute started and was taken to court, land users in the Mubuku scheme receiving eviction notices at the end of the year from Shiwalama Commercial Farmers Ltd. and Bataka Lukooki Community. Four distinct resident actors – community groups as well as individuals owning business ventures – have claimed ownership over 155 hectares of the scheme, thanks to land titles issued by the Uganda Land Commission some years before. However, at the beginning of 2018, a land investigation commission from Kasese town directed the customary land ownership titles to be cancelled, considering that they had been issued in error – although the district land board chairperson pointed out the absence of clear boundaries for the scheme, the boundaries having first changed with the rehabilitation, then again with the scheme's extension as Mubuku-II. Moreover, the commission rejected documents provided by the former Busongora South MP (Member of Parliament) Candidate Constantine Siwako, among those accused of land grabbing, which including a hand-written land title he claimed had been issued by the Tooro kingdom – where the scheme is located – to his grandfather (Daily Monitor 2018). Later in 2018, another dispute arose with land users accusing the scheme manager of fraud, claiming he sold off some of the land within the scheme.

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<sup>142</sup> About US\$7 million at this time.

This case illustrates two processes. First, it reflects the sensitivity of land issues, especially land suitable for irrigation and/or rice and vegetable growing, as did the Olweny and Agoro case studies. Second, it also shows how the central power used the land dispute strategically through the media to legitimise the government in a region of strong opposition, by reinforcing its claim to ownership of the Mubuku scheme, and indirectly defending the scheme's users. Indeed, media coverage of the land dispute repeatedly depicted the residents as powerful stakeholders grabbing government land, the latter thus being presented rather as a victim of mischievous machinations. A clientelist strategy to gain votes in the area was thus also later highlighted by the willingness of General Salim Saleh, head of Operation Wealth Creation and brother to Museveni, to launch a UGX600 billion<sup>143</sup> economic development master plan in the area, located in the Rwenzururu kingdom. Indeed, the latter "has proved to be a headache for the ruling party" as being the only district in the sub-region to continuously vote for the main opposition, despite actions taken by the government to address the situation (Daily Monitor 2019).

Another case encountered during fieldwork illustrates the prominence of politics in the irrigation sector in order to maintain Museveni's grip on power. Museveni again appeared personally, lobbying donors and the private sector. During discussions held at the President's Office for example, between Museveni and actors already involved with Ugandan matters on other projects, the President appeared to enjoin partners to enter the irrigation sector (Interviews with a Senior Rural Development Specialist at the World Bank, 05/12/17, and with the Country Director of a multinational company contracted for urban water projects in Kampala, 14/03/18). In the case of the multinational company operating in urban water, which we will refer to as "X", negotiations began directly at the President's Office in 2016, in the absence of MWE or MAAIF involvement, to sign an agreement over the construction of several irrigation schemes under a public-private partnership. This implies that the schemes are funded under a loan that the government would pay back through renting the completed schemes to private operating companies. Nevertheless, over time, the number and size of the schemes that "X" and the President's Office have been negotiating have been changing, although some of Museveni's requests remain constant. One of his main requests is the location of a large-scale scheme near Moroto, in the long-marginalised north-eastern sub-region of Karamoja. While some collusion of interests between the Karimojong and the new

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<sup>143</sup> About US\$160 million.



NRM regime existed in Museveni's early days, the situation had changed, creating a growing need to increase state authority in the area as well as integrating a long-neglected sub-region into the country's policies. The Lopei irrigation scheme thus appears both as a means to demonstrate the government's willingness to bring development projects to the region, as well as subordinating the population and controlling land in an area marked by pastoralism and important land issues. Other schemes are included in the discussions between "X" and the President's Office, whose size, location and targeted users have changed several times, the most recent one linked to the World Bank's irrigation programme eclipsing the "X". This led to a re-orientation of some of the planned schemes, with a Memorandum of Understanding finally expected to be signed between "X" and the President's Office in 2019. Nevertheless, although the World Bank is aiming to implement irrigation schemes in the southwest, Museveni, by means of these negotiations, has sought to increase the number of schemes in a strategy that aims to ensure continued support for the NRM regime, as illustrated by the following letter:

TEL: 231900  
FAX: 235462  
EMAIL: shc@statehouse.go.ug



State House,  
P. O. Box 25497,  
Kampala,  
Uganda.

IN ANY CORRESPONDENCE ON  
THIS SUBJECT PLEASE QUOTE NO. **PO/4**....

██████████ 2018

██████████  
Country Director  
██████████  
██████████  
██████████ **KAMPALA**

**RE: IRRIGATION SCHEMES DEVELOPED UNDER JOINT VENTURE  
PARTNER ARRANGEMENTS**

I have received yours of the ██████████ 2018, about the good news of your technical capacity to pump water from the Kagyera River, pump it up to the high ground of Bukaanga and Isingiro and, then, relying on gravity, the water would flow to the people's gardens apart from solving the issue of the water for consumption.

In addition, you are raising money for this project ██████████. In so doing you are about to transform me as the head of the NRM Party into a mystical figure in the history of that area, far surpassing the fabled King of that area, Ntare(I), *Nyabugaro-bweera*, who reigned around mid-16<sup>th</sup> century. During a serious drought (*ekyaanda*) or ifa (famine), he took his bow and arrow and shot at the heavens and the latter responded with a huge amount of rains that caused *omweeru* (plenty harvests). The NRM will now become a perennial *Nyabugaro-bweera*.

By copy of this letter, I am directing the Ministers of Finance and Agriculture, coordinated by the Prime Minister, to quickly conclude the necessary agreements with you so that the project starts.

  
Yoweri K. Museveni  
**P R E S I D E N T**

**Copy to:** H.E. the Vice President  
Rt. Hon. Prime Minister  
Minister of Finance, Planning and Economic Development  
Minister of Agriculture, Animal Industry and Fisheries  
Attorney-General

Figure 39: Letter from Museveni to "X" company (Torretti 2018)

Finally, this once again illustrates how Museveni ultimately keeps the upper hand over the MWE and the MAAIF in the irrigation sector – and over Uganda’s partners to some extent, as seen by Museveni favouring the World Bank over “X”. Indeed, at the same time as discussions were re-oriented between “X” and the President’s Office, Museveni gave a directive to the MWE to replace the MAAIF as “X”’s partner<sup>144</sup>. It remains unclear whether the letter refers to the negotiations with the company only, or whether it addresses any forthcoming irrigation schemes. Nevertheless, the directive again illustrates a previously-highlighted process: as the irrigation sector grows, empowering both the already-influential MWE and its competitor, the MAAIF, Museveni remains dominant over both ministries by directing mandates to be revoked or (re)allocated – or even putting an end to discussions, as seen before with the cessation of discussions with the French agency and MAAIF over the Olweny scheme. In this sense, the importance of the irrigation schemes in terms of power broking can be extended from subordinating the population to subordinating institutions as well, though the relationship with the MWE can be seen in a different light, as will now be shown.

- **The neo-patrimonial nature of the Dott Services Ltd. case**

Another aspect of Museveni’s personal interest in the irrigation sector was illustrated by the Dott Services Ltd case. As a reminder, we have seen in Chapter 3 how the construction company, contracted to carry some of the rehabilitation work under the FIEFOC programme, left work uncompleted in the Agoro scheme. It appears that, regardless of its questionable record, the company won a contract under the FIEFOC-2 programme in a rather controversial fashion as we will now see. This raised questions about the nature of the relations between the MWE, who contracted the company, and Dott Services Ltd.

Created in 1994, Dott Services Ltd. is well-known in Uganda for its numerous government contracts, mostly for road construction, as well as for the fact that its work is commonly considered to be of poor quality and often delivered late. Discontent over this company has grown significantly over the years, especially in areas where the population suffers from sometimes deadly floods, that the construction of new roads is supposed to address. This, coupled with public accusations of budget mismanagement and high levels of corruption, has made the company the focus of popular criticism and public anger to the point where

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<sup>144</sup> See in annex a copy of this letter.

Museveni ostensibly banned Dott Services Ltd. from receiving further government contracts in April 2017. The ban was later lifted, after being judged unconstitutional by the Attorney General. Nevertheless, before it was lifted, an agreement between the company and the Water for Production Department was still found for implementation of one of new irrigation schemes funded under the FIEFOC-2 programme. This occurred despite, on the one hand, the mostly incomplete work on the Agoro irrigation scheme that led the MWE to study an eventual “rehabilitation of the rehabilitation work” (Interview with an anonymous informant, 15/11/17), and on the other hand the on-going presidential ban (Interviews with the Director of the Water for Production Department, 06/11/17, and with the National Project Coordinator for FIEFOC, 09/11/17). Finally, some interviews clearly stated the relationship between Dott Services Ltd. and Museveni’s entourage<sup>145</sup>, as it is common knowledge – a least seemingly in political circles – that Dott Services Ltd. is owned, at least partially, by General Salim Saleh, the President’s brother<sup>146</sup>.

The Dott Services Ltd. case thus illustrates two processes. First, the necessity for the President, while in the throes of a legitimacy crisis, to publicly show himself sharing popular anger and placing himself on the “side” of the people. This is demonstrated by banning Dott Services Ltd., before re-instating them in a manner that shows the Constitution to be responsible, as he abides by the Attorney General’s decision. Second, that public action for irrigation is not used as a resource for patronage and corruption only within the MWE, as previously shown, but at the presidential level as well. Museveni’s political interests have contributed to shape public action for irrigation, by favouring a certain technology – the choice of irrigation through large-scale schemes – easier to integrate in patronage networks, by involving the private sector for lucrative contracts. This has contributed to justifying mandating the MWE over the MAAIF on several occasions. In this way, public action for irrigation in Uganda reflects findings usually occurring in the literature on the political nature of water governance, as highlighted by various authors in political ecology or Science and Technology Studies. These findings are accurately summed by François Molle as follows:

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<sup>145</sup> Interviews with an anonymous informant from the MAAIF, 15/11/17, and with the Chief of Party at the International Fertilizer Development Center, 20/11/17.

<sup>146</sup> According to Martha Leah Nangalama (2017), Salim Saleh owns 45% of Dott Services Ltd., the main shareholder being Indian (“Ugandan Dott Services Was not Re-instated by Museveni”, *Peril of Africa* (blog), Available at: <http://perilofafrica.com/category/special-report/uganda-dottservices-not-re-instated-museveni/> [Accessed June 06 2019]).

Forging privileged relationships with the political system enables (...) design offices and construction companies to sign lucrative contracts (...).

As for the politicians, they obtain a political benefit by strengthening their electoral base, or even financial benefits in the form of under-the-table payments from construction companies (...) and they are partial to iconic projects that legitimise the state and confer prestige upon them.<sup>147</sup> (Molle 2012b: 229-230)

Finally, recent political events, such as the general elections and the constitutional amendment to lift the age-limit for the President, have highlighted the significantly increasing level of neo-patrimonialism in Museveni's politics, reflected by the Dott Services Ltd. case. Indeed, while the cost of the 2011 elections was estimated at US\$350 million (Fisher 2014), the 2016 elections cost about US\$716 million, meaning that "the government needed much more money to buy off a relatively wealthier populace due to intraparty fragmentation" (Rubongoya 2018: 104). According to Joel Barkan, this situation reflects "inflationary patronage" requiring "ever-increasing amounts of money to maintain oneself in power and increasing levels of corruption to provide the required funds" (Barkan 2011: 11). The rise and scale of corruption, patronage and clientelist practices has thus significantly increased over the years, since the appearance of the legitimacy crisis in the 1990s. Museveni's responses to the crisis failed to satisfy discontent (ICG 2017). Focused on militarising the regime on the one hand, and on nationalistic and populist policies on the other hand, they did, however, reinforce the trend to authoritarianism. Nevertheless, while Museveni put his new term under the slogan "*Hakuna mchezo*" – "No play" – and committed to fight high-level corruption and transform the country, "his rule slowly had shifted from broad-based and constitutional to patronage-based and personal, with his family at the centre" (ICG 2017: 1). Indeed, the co-optation of supporters through patronage alongside control of key institutions, including the army and police, became even more essential for Museveni's survival as the government proved itself unable to address the population's broad needs.

In this light, banning Dott Services Ltd. publicly, while unofficially agreeing to award the company contracts for the FIEFOC-2 programme, came at the crucial time when Museveni was planning to amend the Constitution. This operation, which aimed to raise the age-limit in order that Museveni can stand in the forthcoming 2021 elections, indeed led to the deployment of a very costly patronage strategy among the Members of Parliament (MPs), who were debating the amendment, before eventually passing it in December 2017. The amendment was

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<sup>147</sup> Translated from the French.

reported in the media as having been extremely costly, some reports estimating it at about UGX8 billion<sup>148</sup> (Daily Monitor 2017a). In this light, Gen. Salim Saleh's company, on the verge of being contracted for costly new irrigation schemes while under an unconstitutional presidential ban, raises question about the political nature of the process. Neo-patrimonial instrumentalisation of the tender process used in the irrigation sector thus appears likely to involve not only the ministries, but the President himself and his close circle, for which the booming irrigation schemes represent new resources to meet unprecedented needs for patronage and clientelism networks.

- **Towards an agro-extractive and enclave model**

Finally, the rise of the irrigation sector can be seen through the increasing reliance of the NRM regime over the last few years on forthcoming oil extraction, especially since the last (2016) elections. Indeed, the electoral campaign was marked by various announcements of modernisation plans that the anticipated oil revenue is expected to fund. Consequently, it has become essential for Museveni and the NRM-state apparatus that oil production meets expectations. Anticipating the large oil revenues to come, the government has considerably increased investment, to the extent that the central bank has raised concerns about Ugandan debt if oil production should be delayed (Smith & Van Alstine 2018).

The focus on oil production to finance public investments, allowing further indebtedness, has reached the irrigation sector as well, since the costly, large-scale hydraulic infrastructure it represents fits the current government strategy to strengthen the ruling coalition. Indeed, public investment in irrigation increased from practically nothing to about UGX130 billion<sup>149</sup> for the 2014/2015 financial year according to the Water for Production Sub-sector Investment Plan. With the FIEFOC-2 programme, but also with several other irrigation schemes to come, this amount is expected to significantly increase. The Commissioner of the Water for Production Department – who uses MWE resources and influence to promote irrigated agriculture both in Uganda and abroad during workshops or conferences – describes the current and forthcoming irrigation schemes as being built with “Funds being mobilised under the Oil and Gas Development Package”, and others funded either by the government or the

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<sup>148</sup> About US\$2.1 million

<sup>149</sup> About US\$50 million at this time.

MWE. This plurality of funding comes from the plurality of actors now entering the irrigation sector, leading also to a plurality of approaches to management, with a trend, however, towards extractivist practices.

The actors and schemes identified during interviews include:

- the African Development Bank, funding the FIEFOC and FIEFOC-2 programmes as well as the Achomai irrigation scheme;
- the Islamic Development Bank, funding the Kibimba-II irrigation scheme;
- the Korean Eximbank, funding the Natamala irrigation scheme;
- the Korea Rural Community Corporation, funding the Mpologoma water scheme;
- “X” company, funding the Lopei, Bigasha and another irrigation scheme in Isingiro district;
- the World Bank, funding the Kabuyanda, Matanda, Amagoro and Nyimur irrigation schemes;
- the JICA, grant-aiding the Atari irrigation scheme.

The map and table below show the boom in irrigation schemes that is quickly occurring in the country, as so far the only four “complete” irrigation schemes were previously implemented either in the 1960s (Kibimba rice scheme) or rehabilitated under the FIEFOC programme (Agoro, Mubuku and Doho schemes):



Map 21: Irrigation schemes (>450 hectares) identified during interviews (Arfaut 2019)



Identified Medium/Large Irrigation schemes									
Irrigation Scheme	District	Type	Acres (ha)	Funding Agency	Target Commodity	Status			
1 Doho	Butaleja	Rehabilitate	1,000ha(3,000ha)	FIEFOC/AIDB	Rice	Reconstructed			
2 Mubuku I & II	Kasese	Rehabilitate	516ha(1,016ha)	FIEFOC/AIDB	Horticulture, Rice	Reconstructed, Phase 2 to start FY2017/18			
3 Agoro	Kitgum	Rehabilitate	120ha(400ha)	FIEFOC/AIDB	Horticulture	Reconstructed			
4 Olweny	Lira	Rehabilitate	600ha	GoU	Rice,	Reconstruction on going (85%)			
5 Rwengganju	Kabarole	New	116ha	GOU	Rice, Citrus and Horticulture	Construction to commence in FY 2017/18			
6 Tilda Rice	Iganga	New	1,600ha	Tilda Rice/IDB	Rice	Operated by Private Company			
7 Pearl Rice	Butaleja, Iganga	New	700ha	Pearl Rice/IDB	Rice	Feasibility study and Preliminary design done			
8 Namatala Swamp	Mbale, Budaka, Butaleja	New	3,800ha	MAAIF/MWE/JICA	Rice	Feasibility study and Preliminary design done			
9 Atari	Kween and Bulambuli	New	1,700ha	MAAIF/MWE/JICA	Rice	Feasibility study and Preliminary design done			
10 Sironko/Acomai	Bukedja	New	4,000ha	MAAIF/MWE/JICA	Rice	Feasibility study and Preliminary design done			
11 Doho II	Butaleja	New	1170	FIEFOC/AIDB	Rice,	Construction commenced in FY 2017/18			
12 Wedilia/Rhino Camp	Nebbi	New	1,800ha	FIEFOC/AIDB	Rice, Cotton	Construction commenced in FY 2017/18			
13 Tochi	Oyam	New	500ha(1800ha)	FIEFOC/AIDB	Rice, Citrus and Horticulture	Construction commenced in FY 2017/18			
14 Ngenge	Kween	New	1000ha	FIEFOC/AIDB	Rice, Citrus and Horticulture	Construction commenced in FY 2017/18			
15 Akwera	Otake	New	250ha	MWE	Rice, Horticulture, Citrus	Design and Construction in FY 2017/18			
16 Ongole	Katakwi	New	300ha	MWE	Rice, Horticulture, Citrus	Design and Construction in FY 2017/18			
17 Kabuyanda	Isingiro	New	4,100ha	NELSAP /KAGERA	Rice, Horticulture, Citrus	Feasibility study and Preliminary design done			
18 Bigasha/Omumukura	Isingiro	New	1,942ha	NELSAP /KAGERA	Rice, Horticulture, Citrus	Feasibility study and Preliminary design done			
19 Kibimba	Gomba and Mpigi	New	2,000Ha	FIEFOC	Citrus, Rice and Horticulture	Feasibility study and Preliminary design done			
20 Namalu	Nakaspiripiri	New	1,800ha	FIEFOC	Citrus	Feasibility study and Preliminary design done			
21 Matanda	Kanungu	New	320ha	FIEFOC	Rice	Feasibility study and Preliminary design done			
22 Biso	Buliisa	New	1,300ha	FIEFOC	Cotton	Feasibility study and Preliminary design done			
23 Pabbo	Anuru	New	1,800ha	FIEFOC	Cotton, Rice	Feasibility study and Preliminary design done			
24 Musamya	Kayunga/Mukono,	New	2,000Ha	FIEFOC	Citrus, Rice and Horticulture	Pre-Feasibility studies Done			
25 Mopologoma	Kibuuku/Parisa	New	8,000ha	KDA	Rice, Citrus and Horticulture	Feasibility study and Preliminary design done			
26 Nankwasi Swamp	Tororo	New	2,500ha	KDA	Rice	Feasibility study and Preliminary design done			
27 Kiige	Kamuli	Rehabilitation	Rehabilitation	AFD	Citrus	Feasibility study and Preliminary design done			
28 Odina	Serere	Rehabilitate	166ha(500ha)	MWE	Citrus	Feasibility study and Preliminary design done			
29 Atera	Apac	Rehabilitate	20ha(1,000ha)	MWE	Citrus	Feasibility study and Preliminary design done			
30 Labori	Soroti	Rehabilitate	161ha(500ha)	MAAIF	Citrus	Feasibility study and Preliminary design done			
31 Ongom	Lira	Rehabilitate	300ha(500ha)	MWE	Citrus	Feasibility study and Preliminary design done			
32 Labwor	Abim	New	700ha	MWE	Rice, Citrus	Pre-Feasibility studies Done			
33 Katerera	Rubirizi	New	330ha	MWE	Banana, Cotton	Pre-Feasibility studies Done			
34 Lopei	Napak	New	4,0000ha	NELSAP	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
35 Rwimi	Kabarole	New	4,415ha	NELSAP/RAPT	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
36 Lumbuye	Kaliro	New	9,812ha	NELSAP/RAPT	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
37 Okot	Soroti	New	6,620ha	NELSAP/RAPT	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
38 Nyabanja,	Tororo	New	5,531ha	NELSAP/SMM	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
39 Auyo,	Tororo	New	9,630ha	NELSAP/SMM	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
40 Pokach,	Tororo	New	2,141ha	NELSAP/SMM	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
41 Angolola	Tororo /Busia(Kc)	New	2,575ha	NELSAP/SMM	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
42 Nyamatunga,	Nyamatumanga,	New	385ha	NELSAP/SMM	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
43 Amagoro	Tororo/Busia	New	32,755ha	NELSAP/SMM	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
44 Nyimur	Lamwo/S.Sudan	New	5,000ha	NELSAP/Aswa	Rice, Horticulture, Citrus	Pre-Feasibility studies Done			
45 Danze	Luwero	New	165ha	MWE	Coffee, Horticulture, Citrus	Pre-Feasibility studies Done			
46 Sipi	Bulambuli	New	400	MWE	Rice	Feasibility study and Preliminary design done			

Figure 40: Summary of irrigation schemes provided by the Commissioner at the MWE (2017)

While the first schemes were planned to be taken over by the local population, as for the irrigation schemes under the FIEFOC programme, this will change with other schemes. Indeed, more recent approaches aim to introduce water fees in the schemes, for example in those

funded under the FIEFOC-2 programme, while larger schemes would be delegated to private operators, such as the Lopei irrigation scheme for 70% of its surface area (Interview with the Business Manager of “X” company, 22/04/18). Except for the Atari scheme which is being grant-aided, all the schemes are to be funded through loans. Despite the considerable role played by the expected oil revenue, the Ugandan debt is increasing significantly enough for the signing of the Memorandum of Understanding with “X” to be delayed, as stated by their Business Manager during informal discussions:

They are getting very, very close to their limits according to the IMF [International Monetary Fund]. (28/06/19)

We are still waiting for the [Ministry of Finance, Planning and Economic Development]'s agreement, but Uganda's indebtedness is getting close to 50% [of her Gross Domestic Product], so the MoFPED is reluctant to further commit. (...) For now, the process is a bit stuck. (04/09/19)

Indeed, the Ugandan government is increasingly indebting the country, especially since the last 2016 general elections, in order to launch various infrastructures and other modernisation plans though few warnings of international financial institutions (Afrique La Tribune 2017a, 2017b). This also demonstrates a certain degree of competition between funding agencies, as on the one hand, the IMF is closely watching Uganda's debt level, causing delays in “X”'s contract while, on the other hand, the World Bank is launching the Uganda Irrigation, Development and Climate Resilience project. Budgeted at US\$195 million with the MWE as the implementing agency, this project was much more quickly negotiated, designed and approved than was the case with “X” – since an interview with World Bank Officers in late 2017 showed the absence at that stage of any significant talks regarding the irrigation sector<sup>150</sup>. This speed in designing the project was also facilitated by previous feasibility studies carried out by the Nile Basin Initiative, under one of its investment programmes called the “Nile Equatorial Lakes Subsidiary Action Program”. Despite awareness of the past failures of irrigation schemes in the country, the World Bank thus aims through this project to implement unprecedentedly large irrigation schemes, which will require Resettlement Action Plans used for the first time in the irrigation sector as the promoted solution to the contemporary agro-extractive approach taken in many countries. This also illustrates the strategic issues raised among funding agencies by the boom in irrigation schemes. Indeed, development banks and

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<sup>150</sup> Interview with a Senior Rural Development Specialist at the World Bank, and with a Senior Agricultural Specialist at the World Bank, 05/12/17.

cooperation agencies have an interest in encouraging and maximising loans (Chambers 1997). As pointed out by many authors (see Repetto 1986, Kanbur 2000, Venot *et al.* 2011), this “induces a ‘loan culture’, encouraged by the fact that debt servicing and repayment by the countries concerned are independent of the success of the project”<sup>151</sup> (Molle 2012b: 230). In sum, it appears in Uganda that in general, neither the government’s nor funding agencies’ interest in the boom in irrigation schemes are linked to whatever impact they may have on the ground. Their development is predominantly related to their political and strategic implications. This logic therefore sheds light on some aspects of the gap found between top-driven processes and impacts on the ground in the cases of the Olweny and Agoro irrigation schemes, analysed in Chapters 2 to 4.

In conclusion, the domination of the MWE by water engineers was found to also serve presidential interests through a technocratic, top-imposed extractivist approach to irrigation schemes, leading Museveni to issue directives favouring the MWE over the MAAIF on several occasions. While such technological solutions for shaping public action for irrigation appears to be integrated into neo-patrimonial dynamics at the level of the ministries, which deploy various strategies to access and divert the schemes’ resources, for Museveni the sector involves a wider variety of issues. This has led to an increase in the number of negotiations between various top-level actors, development partners and private sector bodies, in the light not only of MWE and MAAIF lobbying but of that from Museveni himself in the irrigation sector. This recent trend has been facilitated by international donors finally embracing the return to large-scale agricultural land development, and the willingness of the private sector to seize the opportunities proposed by such new demand. Characterised by a competition between ministries and deeply integrated into neo-patrimonial dynamics, the public action for irrigation is thus being ultimately arbitrated by Museveni, whose interest in the sector has grown with his need to build legitimacy and patronage. The sector is thus increasingly promoted through mainstream and social media, especially since the last 2016 general elections which occurred at a time marked by a long, dry spell. In public narratives, the rhetoric promoting irrigation is depoliticised, focusing on pseudo-scientific ideas that divert attention from the underlying political nature of public involvement. This kind of communication strategy is not unusual in water politics, as pointed out by the literature. Following on from the previous irrigation schemes of the 1960s and 70s, and probably as empirically observed

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<sup>151</sup> Translated from the French.

by the NRM-state apparatus while carrying out the FIEFOC programme, irrigation schemes can indeed be used as tool to subordinate populations – by materialising state power on the ground by imposing schemes, as well as by using the schemes as part of a clientelist strategy to seduce the electorate – and control land. Such issues, although not new, are clearly highlighted in Uganda by the various examples we have given. Finally, diverting resources through the tender process, in a similar fashion to the Arch Design Ltd. case, was found to involve Museveni’s inner circle as well, with Dott Services Ltd. This case only further highlights both increasing necessity and difficulties for Museveni to rely on patronage, at a time when maintaining himself in power means coping with unprecedented opposition. Dealing with such unprecedented needs for resources must thus be placed in the context of the long-expected oil revenues, which have allowed Museveni to increase the country’s debt to a drastic extent. This is indeed reflected in the irrigation sector, as it is even a challenge for agreements negotiated at the President’s Office to be finally signed. In the end, this boom in irrigation schemes emphasises the political nature of the new sector, the prevailing considerations being far from the actual impacts on the ground. As Robert Chambers has indeed accurately observed, this creates a configuration of “putting the first last” (1997). Moreover, this has further put the sector at the centre of a trend to transform the country into an agro-extractive state and an enclave development model regarding resource management (Wiegratz *et al.* 2018), in which water for agricultural production is no exception.

## CONCLUSIONS

This chapter aimed to analyse the return to irrigation schemes and the boom that has taken place in recent years in Uganda. We thus hoped to shed light on the reasons behind the gaps identified in Part I between the schemes’ objectives and their actual impacts, and thus to understand how the technological solution used in previous schemes, whose resulting dynamics can be questioned in respect of their initial objectives, has now come to be dominant in the new irrigation sector. This chapter has demonstrated the deeply political nature of public action for irrigation that prevails over its supposed benefit to the people – thus putting the first last, to quote Robert Chambers (1997).

The first section analysed the context in which public involvement in agriculture finally returned to the forefront of Museveni’s politics, after being set aside, as seen in Chapter 5. This must be seen in the light of the legitimacy crisis, continuously fuelled since the 1990s by

general discontent towards a regime which failed to introduce democratic practices, to reduce poverty and to fight the corruption and patronage upon which the NRM-state apparatus came to rely. Responses to the legitimacy crisis came, among others, in the form of the regime's militarisation, thus instrumentalising the war against the LRA, co-opting decentralised agencies in the context of neoliberal reforms, and re-orientating efforts generally towards "pro-poor" policies, including renewed public involvement in agriculture. While these approaches allowed the state to come back to the front line, after the weakening caused by the structural adjustment plans described in Chapter 5, they also demonstrate how the NRM-state apparatus skilfully played on donors' constraints in order to attract international support, while diverting it to serve its own interests. In this light, the return to public action for agriculture is marked by highly political issues, which appeared prominent in the establishment of the renewed agricultural sector.

These dynamics were illustrated by the second section, which focused on the FIEFOC programme, in the new era of development nationalism led by Museveni in the 2000s. Indeed, funding the rehabilitation of irrigation schemes showed how the NRM-state apparatus efficiently played on donors' views, at a time when agriculture was not yet a priority for them and aid was being cut in response to Museveni removing the limit on presidential mandates. By linking the fashionable forestry sector to irrigation in two distinct programme components, the FIEFOC programme was also marked by an extractivist and productionist approach that is prominent in the forestry sector. Defined by "green" economy principles, the shaping of the FIEFOC programme thus represented a first step in directing the technocratic orientation of the irrigation schemes, their rehabilitation showing continuity with the design inherited from the Asian "Green Revolution" introduced in Chapter 4. Nevertheless, the orientation taken by the NRM-state apparatus was reinforced by the 2008 crisis, which, harshly affecting the global rice economy, highlighted the food dependency and vulnerability of many Global South countries. As the crisis strengthened the "green" economy rather than questioning it, the promotion of new concepts such as climate-smart agriculture and food sovereignty followed, upon which a public rhetoric justifying the return to irrigation schemes was finally built. This indeed provided further justification for the rehabilitation of the schemes inherited from the 1960s, as the FIEFOC irrigation component was delayed until 2011 before implementation. This came in a context of the militarisation of some of the public involvement in agriculture and further authoritarianism, while public accusations of corruption in the agricultural sector reached unprecedented levels.

The third section finally demonstrated how these highly political and strategic issues markedly shaped the direction of public involvement in irrigation. We have thus highlighted the personal interests of, and benefits to, the actors involved in the sector, and demonstrated the political nature of the schemes' design, orientation and considerable increase in number. Indeed, thanks to its gradually-developed influence, partly due to donors' view of the water sector, as seen in Chapter 5, the MWE has positioned itself as the dominant ministry in the irrigation sector, over the MAAIF, weakened by neoliberal political reforms. While the MAAIF had to align its own approach and practices with the public approach to irrigation according to the MWE, the latter appeared to derive benefit from such dominance. Indeed, the technocratic orientation of the irrigation schemes, favoured by the general design of the FIEFOC programme, opened opportunities for the ministry to build on its legitimacy and influence, while some of its civil servants diverted scheme resources through their links with private sector companies. Public action for irrigation thus contributes to patronage and to clientelist and corruption networks, through the co-production of power, knowledge and technology by the main top-level actors involved. The technological solutions thus promoted, coupled with considerable involvement with the private sector as promoted by the dominant donors' view, create opportunities to integrate the sector into neo-patrimonial dynamics. In this way, the MAAIF has been able to compete with the MWE by adopting its practices, as they have become dominant in the country, as well as by creating opportunities within its own networks. For the MAAIF, accessing the schemes' resources took, for example, the form of instrumentalising its long collaboration with the JICA, by diverting feasibility studies – as did the MWE.

Finally, presidential interests in the irrigation sector demonstrate its strategic importance for remaining in power. It also explains the favouring of the MWE over the MAAIF, since the technocratic orientation of the sector conditioned by the MWE's domination serves Museveni himself as well, leading him to directly lobby foreign partners. To Museveni, public action for irrigation, in the form of increasing the number of technocratic, infrastructure-heavy schemes, indeed allows him to create new resources at a time when patronage is costing more and more. Moreover, the sector allows him to subordinate ministries, by arbitrating their competition, as well as subordinating populations, materialising state power through land control, and diverting resources to the benefit of his inner circle. As illustrated by the last 2016 general elections, during which Museveni considerably increased the number of modernisation plans in order to address the ever-growing legitimacy crisis, such public

intervention thus contributes more generally to transforming the country into an agro-extractive state. Reflected by the vision of the irrigation schemes, in which the private sector is expected to play a growing part, Uganda, under Museveni's leadership, is thus following an enclave development model, rendered fragile by the degree of uncertainty about its expected oil revenue – at the origin of its large and ever-increasing national debt. In the end, the political agronomy of public action for irrigation shows the prevalence of the political dimension of the sector over issues such as food security or adapting to climate change. Irrigation is rather shaped according to the benefit and requirements top-level actors can derive from it, thus producing public action for irrigation that takes the form of technocratic, top-imposed schemes that are disconnected from local realities and thus have many different impacts on the ground that are far from their initial objectives, as analysed in Part I. In this light, the public action for irrigation contributes above all to consolidating the NRM-state apparatus' grip on power, at a time when the ruling coalition is facing an unprecedented political legitimacy crisis.

# General Conclusions

This thesis has analysed the geopolitics of contemporary irrigation schemes in Uganda. While irrigation plays an ever-increasing role in global agricultural production, the number of large schemes promoted has increased, particularly in the context of the “Green Revolution” and post-Independence in the 1960s. However, the massive investment they required, coupled with their failure to meet their stated production objectives led to their withdrawal from the development sector particularly from the 1980s. This thesis thus contributes to understanding why and how such technocratic and infrastructure-heavy schemes have been revived since the late 2000s, in the context of a global economic and food crisis, unprecedented pressure on natural resources, and threats posed by the climate crisis.

- **Key findings**

This thesis makes an original contribution relating to two main issues. First, it offers a geopolitical analysis of agricultural subjects, which are more usually approached from a technocratic viewpoint, despite the prominence of social and political factors in agricultural production. Moreover, it provides an analysis of the development of an agricultural technology, irrigation, through its introduction in one country in the form of a technocratic, externally-designed and implemented scheme. We thus propose an original approach to exploring irrigation schemes through their political facets at various scales, allowing us to go beyond the traditional fields and normative categories of “state” and “peasantry” while proposing a renewed approach in geopolitical science. We aimed to question at various levels how strategic logics contribute to contemporary Ugandan irrigation schemes’ design, implementation and appropriation. We thus formulated two hypotheses to explore these phenomena, resulting from an empirical-inductive methodology in which we focused on identifying actors, their logics and strategies at various levels of analysis.

We have thus confirmed our first hypothesis, in which we assumed that the implementation of irrigation schemes today remains a disruptive process, leading to the emergence of coping mechanisms. In a context of eroded indigenous institutions and unprecedented competition for natural resources, we also assumed that such mechanisms are strategies intensified by the boom in rice as a lucrative cash crop. This hypothesis was formulated in the light of preliminary



fieldwork and the mobilisation of literature focusing on common pool resources, more particularly in the agrarian context of former colonised countries. Part I addressed this hypothesis by assessing the actual impacts of implementing the Olweny and Agoro irrigation schemes in the Lango and Acholi sub-regions. We have indeed explored long-term agrarian and socio-political patterns in the Lango and Acholi sub-regions, arguing that assessing the impact of “development” projects implies first understanding the long-term dynamics before being able to contextualise the identified changes. Analysing the historical trends relating to agriculture and indigenous institutions at a sub-regional level provided the necessary background for us to produce an analysis of the Olweny and Agoro schemes.

Although the Acholi and Lango sub-regions shared similar environments and agrarian systems, differences existed. Langi society, egalitarian and acephalous, was composed of numerous, highly mobile, small groups, whose main political unit was the clan section. Meanwhile, the Acholi society emerged as polycephalous, with *rwotdoms* being the main political unit. In both early societies, land, which was communally held, was not central to the functioning of institutions, with livestock being considered as the primary economic, social and symbolic asset. We then demonstrated how colonialism, which sedentarised the mobile groups and introduced an external source of authority, affected society in Lango more than in Acholi. Colonial policies led to the progressive transformation of the Langi agrarian economy into a commodified one, this change spreading to the way in which land was held, under the influence of widespread cotton production. Meanwhile, in Acholi society, neither agrarian practices nor communal land tenure systems changed much. Finally, we demonstrated that such land-related trends continued after independence, particularly in the light of recent events. The 1986-87 cattle raids crystallised an agrarian shift in Lango, which had been occurring since the colonial period. We showed that common pool resources, such as wetlands, had tended since then to be individually appropriated by dominant local actors, in a context of legal pluralism marked by eroded indigenous institutions. Our analysis thus contributes to the literature on resource commodification, during which commonly-held property rights are transformed into individualised ones, in this case since colonialism. In Langi society, profoundly affected by colonial policies, the external imposition of a productionist logic “separated the management of the habitat from its regulating social and symbolic principles”: land, therefore, “has become a simple set of places reduced to productive use, towards which the social movement has been oriented and distorted, being reduced to the

simple deployment of a labour force”<sup>152</sup> (Charlery de la Masselière 2005: 51). We showed, however, how Acholi represents a different case where indigenous institutions demonstrated high levels of resilience and recovery to displacement and camp life. Although land also became the main economic asset, we showed how communal tenure systems remain efficient nowadays. The resilience of these institutions plays a major role in maintaining common-property rights and low levels of legal pluralism. Finally, understanding these specific historical features appeared to be relevant in order to contextualise the analysed changes related to the implementation of the irrigation schemes.

In the case of the Olweny irrigation scheme, we demonstrated that the high level of social differentiation and legal pluralism must be seen in the light of historical trends introduced by the logic of commodification. We analysed how this context creates a situation where competition for access to, and use of, resources is intense, highlighting the role played by the local urban and village elite in expanding individual rights to common pool resources. In Lango, wetlands and land adjacent to them are particularly targeted, in the light of new dynamics that emerged after the massive cattle raids of 1986-87 and in the context of the new legal framework for wetlands, high population growth and significant economic impoverishment. As communal land had lost its main grazing function, individual appropriation for cultivation was greatly intensified over the years, conducted by local actors whose economic or symbolic power varies considerably, and whose action is accepted to varying degrees. In the light of this situation we analysed the main changes caused by the implementation of the Olweny Swamps Rice Irrigation Project in 1999-2000. War-related events, seemingly under-sized infrastructure and the allochthonous nature of the gravity-fed irrigation system contributed to the failure of the scheme to be appropriated by local users as planned. However, in the context of unprecedented pressure on land and the rice boom, the lucrative rice crop spread within the project territory. In order to cope with the highly unreliable and variable water factor, individual strategies of rain-fed rice cropping developed. This was favoured over the planned, collective water management, which appeared to be irrelevant in the face of local realities. We explored how these various factors led to the reinforcement of individual strategies to access and cultivate land that could be individually held thanks to the implementation of the project, thus constituting a unique case and opportunity in the context of a general wetlands conservation policy.

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<sup>152</sup> Translated from the French.

Indeed, transforming the area into individualised plots led to the exclusion of many former users to the benefit of new rice growers, who secured cultivation rights through the implementation of the project. We showed that these growers have social characteristics which put them in a position in which they deal with the risky and high levels of investment required for cultivating rice. In other words, they reflect the social differentiation present in the society, as their economic and symbolic power and influence allowed them to obtain access to a scheme plot while the majority of local inhabitants found themselves excluded from the project territory. Members of the urban and village elite, “big men” or indigenous leaders were found among growers holding economic assets perceived to be higher than average. Moreover, the unequal distribution of land among growers also reflects their diversity in terms of economic power and influence. We thus demonstrated how a land-based legal pluralism emerged out of this particular local context, specific to the transformed swamps, in which the characteristics of the indigenous land tenure system are hybridised with the project characteristics – including contemporary individual rights of patrilinear transmission. The Olweny irrigation scheme case therefore illustrates how, in the end, land commodification favours a form of enclosure by eliminating former common-property regimes. Finally, we further highlighted the importance of land in actors’ strategies throughout the rehabilitation process, which accentuated the ownership question, leading growers to mobilise themselves against what they consider to be threats to their access to, and use of, the transformed Itek and Okile swamps.

In the case of Agoro sub-county, we demonstrated that the resilience of the indigenous order to colonial policies resulted in the continuation of communal land management systems, but also of indigenous irrigation in Agoro sub-county. Such resilience appeared unexpected in the light of the destructuring impacts of the war against the LRA and displacement, which lasted between one and two decades in this sub-region. The indigenous institutions’ resilience thus appeared to be atypical in Sub-Saharan Africa, which must be understood in the light of an historically situated context favouring the prevalence of indigenous order. Moreover, Agoro sub-county illustrates the fact that individualised rights over land are not necessarily unknown to indigenous land tenure systems. Indeed, we analysed how the indigenous irrigation practices found in the field led to a dual land tenure system in the valley: *woko* land is held using the prevailing Acholi communal land system, marked by shifting agriculture. Meanwhile, we showed how the *joro* includes more elaborate individualised rights of use, linked to the permanent nature of cultivation on this land thanks to irrigation.

We thus analysed the impacts of the implementation of large-scale water infrastructure, as part of the scheme's "rehabilitation" process conducted in 2012-13, in the light of this particular background and previous failure to "modernise" indigenous irrigation in the sub-county. This operation transformed the allocation of water across a *joro* shared by various clans, resulting in an unprecedented social and spatial differentiation process. We also demonstrated that this process reinforced the pre-existing social, economic and symbolic domination of a few clans over others, by depriving part of the *joro* of water for irrigation while ensuring such access in other areas. The land deprived of access to water became less valuable, while rice growing – introduced in the 1990s – spread in areas benefiting from the new water distribution. Since "rehabilitation", rice growing thus mostly benefits the aristocratic clan of the local chiefdom and its close kin clans, who own it. We therefore analysed how coping mechanisms emerging after the "rehabilitation" are linked to the new competition for access to, and use of, water for irrigation among users of the *joro*. Such competition is heightened by the fact that irrigation remains the only means of growing rice in this dry area, and that rice remains, with vegetables to a lesser extent, the only lucrative crop in the context of recovery from war. We thus showed that in the case of Agoro, the water resource is at the core of the development of legal pluralism specific to the valley, initiated by the disruption in water for irrigation distribution caused by the introduction of large-scale infrastructure. Indeed, we highlighted how various groups of actors, such as a Water Users Association and temporary groups of indigenous irrigation users, are brought together by common interests and deploy strategies in order to access and use irrigated land. As in the Olweny case, the government-established co-operative society failed to impose its authority and legitimacy, trying to apply a productive logic disconnected from the reality on the ground. Finally, we demonstrated how the adoption of rice in the 1990s, coupled with its significant increase in that part of the *joro* with new infrastructure, finally introduced a logic of commodification to this area, leading to high level of social stratification – as cotton growing did in Lango in the 1920-30s.

Regarding our second hypothesis, we have also confirmed that the return of public involvement in large-scale, technocratic irrigation schemes contributes to state-building. This thesis thus contributes to the literature, particularly, for example, in respect of studies of state spatialisation strategies used to obtain votes and control land. However, we went beyond the relationship between the state and the population, by establishing that such irrigation schemes also contribute to balances of power within the state through their inclusion in high-

level neo-patrimonial trends. We addressed this hypothesis in Part II, analysing public action for irrigation by exploring the history of such technology in Uganda and the high-level political issues it involves. This required deconstruction of the main “pro-irrigation” discourse justifying the return to large-scale irrigation in Uganda, as well as the globally dominant paradigms, concepts and narratives that this message relies on. By doing this, we demonstrated why and how the identified high-level actors intentionally produce technocratic projects that are unrelated to local reality, continuing with the legacy of the 1960-70s though in a new and changing context. Indeed, the main issues at stake are not so much meeting productive expectations as opportunities created by the instrumentalisation of public action for irrigation.

Indeed in Uganda, irrigation was hardly used – with the known exception of the Agoro Hills. However, in Asia the transformation of rice and irrigation in pursuit of a productionist vision was at the core of the “Green Revolution”. These practices were introduced into Uganda in the 1960s by the Chinese cooperation teams, along with the state farm and co-operative management model prevailing under the Maoist communist regime and, more broadly, socialist ideology, which was adopted by the Ugandan President Obote. We described the implementation in the 1960-70s, and later collapse of four Ugandan irrigation schemes through the life stories of two key actors, illustrating how externally-imported productionist logic is adopted by technicians, and how such logic compares with local reality in the particular context of successive crises in post-independence Uganda. We could thus demonstrate that, in Uganda, the rice boom that finally occurred in the 1990s was not the result of coordinated public action but rather of the unexpected combination of various factors. Although rice growing spread in the country, and more particularly in the eastern and northern sub-regions, the contribution of irrigation schemes to production appears to have been low. In fact, the significant increase in national rice production was rather due to small-scale irrigation, as heavily promoted in the east by Japanese cooperation teams for nearly two decades, as well as upland rice growing.

After showing how interest in irrigation schemes was revived during the Obote II period, and even more so under Museveni’s leadership, we then analysed the political dimension of the return of this particular agricultural approach in the light of state (re)construction under the NRM regime. Combining approaches from STS, political ecology and agronomy, we demonstrated how irrigation schemes contributed to balances of power and the political

survival of the NRM state apparatus over thirty years. We began by showing how Museveni's first decade in power was marked by major shift towards neoliberalism and extraversion, in order to obtain aid. This led to the structural adjustment plans of the 1990s, which greatly affected public action in general in Uganda. Coupled with the process of drawing up a constitution, we highlighted how it resulted in state withdrawal, privatisation of public services and major budget cuts, including in the agricultural sector. The neoliberal paradigm was also reflected in the "greening" of new legal frameworks for water and wetlands, and in a highly disputed and instrumentalised land reform process based on globally dominant concepts. Our analysis shows that although this allowed the Ugandan state to be normalised, it also transformed balances of power between and within various high-level actors. We have highlighted the fact that, on the one hand, the restructured ministries – MWE and MAAIF – respectively gained and lost considerable power and influence. Moreover, within the MWE, the water-related directorates have seen their capacities and number of mandates grow increasingly in the light of continued interest from donors, while resources for environment-related actions are unstable and low. On the other hand, we have seen how the land reform process represented a political defeat for the ruling coalition, leading the government to generally seek control over land. Land thus appeared a highly sensitive issue.

Exploring the context in which the legal frameworks for water, wetlands and land were drafted and adopted provided us with a general picture of the configuration of balances of power in operation when agriculture finally came back to the forefront in the late 1990s in Uganda. We have demonstrated how such balances of power greatly influenced the manner in which the return to irrigation schemes occurred, in a context of a significant legitimacy crisis. Responses to this crisis came in various forms, including the regime's militarisation and instrumentalisation of the reforms imposed by donors, such as the decentralisation policy and the return of the state in establishing its own poverty eradication strategy. In Uganda, a shift in the configuration of international aid allowed "pro-poor" policies to be developed by the state. These rapidly became the core of a general populist strategy to address growing popular discontent. In a context of new developmental nationalism, we showed how the irrigation component of the FIEFOC programme, launched in 2008, contributed to this populist strategy by aiming to rehabilitate Ugandan irrigation schemes. We also demonstrated that the FIEFOC programme's approach, marked by an extractivist vision of natural resource management, provides continuity with the technocratic orientation of the schemes it aims to revive. This approach is also found in the general principles of the "green economy", whose global advent

after the 2008 crisis was seen in Uganda as well. As agriculture finally returned as a priority for international institutions, a “pro-irrigation” rhetoric developed in Uganda, justifying the recent multiplication of irrigation schemes, using the same technocratic, infrastructure-heavy approach as the first projects introduced into the country.

Next, we demonstrated the political nature of such technological choices by highlighting their implication in power balances and struggles and neo-patrimonial trends within the state. We showed that the MWE, thanks to its ever-increasing influence since water was made a priority in the development sector, became the dominant ministry with respect to irrigation. The MAAIF, weakened by the neoliberal adjustment plans, failed to rebuild influence and power out of the recent return to agricultural policies. Consequently, in order to attract mandates for irrigation schemes, the MAAIF ended up by adopting the neoliberal, technocratic approach used by the MWE, whose civil servants’ background is in construction engineering and promotion of the private sector. Moreover, we have demonstrated how the MAAIF also competed with the MWE by instrumentalising donors in order to obtain mandates. Meanwhile, we argued that the presidential preference for the MWE over the MAAIF is also linked to the infrastructure-heavy nature of technocratic schemes and a similarity of interests between the MWE and the President. While the MWE has diverted tender procedures to favour clientelist and patronage networks, Museveni’s interest in such processes has also been highlighted. Public action for irrigation that promotes infrastructure-heavy, large-scale irrigation schemes indeed creates resources to meet the increasing need for patronage at a time of unprecedented crisis. Finally, this kind of design contributes to state spatialisation strategies thanks to gaining control over land and obtaining votes, at a time when irrigation is highly mediatised in a context of recurring droughts and ever-increasing economic inequalities. We have thus deconstructed the Ugandan “pro-irrigation” discourse, which promotes the need for irrigation schemes in scientific, neutral terms by highlighting the various strategies deployed by distinct high-level actors. The state being far from a homogenous entity, we propose a picture of highly neo-patrimonial public action for irrigation in Uganda, depicting the different balances of power between the various state actors involved, as well as the various strategies they deploy to serve and defend their distinct interests.

We have also demonstrated that although both the historical context and the dominant paradigms have considerably changed, the practices and technological choices made in

Uganda's return to irrigation show few differences from those of the 1960-70s. The design of infrastructure-heavy, top-imposed, technocratic irrigation schemes continues to ignore the existence of local power relationships, therefore contributing to their reinforcement, as in many other types of "development" project. Opportunities created by the implementation of the schemes are taken up by the most advantaged, while the poorest are generally excluded. This also illustrates a certain form of land enclosure which differs from cases of land grabbing opposing the rural population and companies favoured by central government, found in Acholi (Martiniello 2015) and elsewhere. Finally, our cases contribute to studies highlighting the "misrepresentation of rural Africa as a set of homogenous subsistence 'communities', in which there are no class relations or significant differences in asset and incomes" (Wilson 2018: 133). In this sense, our analysis refers to the concept of "development" understood as a "perpetual present" (Lewis 2009). Indeed, this concept contributes to analysing how the development sector – including the "beneficiary" counterpart – fails to integrate the historical perspective while designing public programmes and action. Furthermore, we showed that such failure must be analysed in the light of a political apparatus for which the interest in irrigation schemes is not related to their actual achievements, or to their capacity to address issues such as food security or climate change that justify their existence. The main political motives lie rather in the opportunities that such schemes create in terms of accessing and diverting resources to feed networks of corruption, patronage and clientelism, and more generally in terms of the political survival of the ruling coalition. Such analysis of the politics of irrigation thus resonates directly with the gap between discourses and practices in the aid sector, as described by David Mosse (2005).

- **Contributions and perspectives**

Our research has, therefore, contributed theoretically and empirically to the geopolitical study of irrigation, as well as land-use planning, in the Ugandan context. We have shown that, in the case of an authoritarian regime, where the NRM state apparatus has ruled for over thirty years, the role played by the central power in land-use planning is overwhelming. While, in Philippe Subra's geopolitical approach, the role played by intermediary actors, such as decentralised agencies or lobbying groups from civil society, is significant, our research has not revealed a similar diversity of intermediate actors. We have however highlighted the importance of power balances and struggles within the state, and the porous nature of the boundaries between the mandates of different government bodies, and how this leads to



balances of power shaping choices in terms of agricultural policy and land-use planning. Nevertheless, our study has above all demonstrated how the interaction of changing dominant global paradigms with specific Ugandan characteristics has led to such a configuration of power, at low and high levels alike. This research thus relates the gap between schemes' stated objectives and their actual impacts to the socio-political patterns specific to Uganda: a former colonised, aid-extraverted country from the upper part of the Nile basin, whose political (re)construction started in 1986 with the spread of structural adjustment plans.

In the light of the global multiplication of policies for adapting to the climate crisis and aiming at food sovereignty, this raises the question of similarities and differences that could be drawn from comparison with other countries. Indeed, the internal geopolitics of irrigation is marked by a multiplicity of factors, together forming a configuration that will vary from one case to another. It would therefore be interesting to better understand the diversity of the existing configuration, which could potentially provide a more comprehensive approach to the analysis of how irrigation policies are formulated and appropriated by actors at all levels. This could be particularly relevant for the Sub-Saharan African region, where irrigation is hardly present – at least, for now – compared to other continents. This might also be interesting as there are few studies focusing on the strategic dimension of irrigation from a geopolitical perspective, despite the context of a climate crisis and ever-increasing competition over access to, and use of, natural resources. Moreover, the great diversity of political, economic, social and environmental contexts across the sub-continent could offer a high degree of plurality of configurations of the internal geopolitics of irrigation.

For instance, in countries where water is a scarce resource, agricultural water might compete to a great extent with other subsistence crops that are less water-demanding, or with other uses such as grazing or fishing. In this sense, at a high level, irrigation refers to a political choice that it would be interesting to analyse, in which priority is given to agricultural intensification, especially given the importance of the conservationist approach generally adopted regarding wetlands. It would be thus interesting to study cases where opposing visions over vulnerable ecosystems' management and use clearly clashes, for instance involving RAMSAR sites. Meanwhile, at a lower level, this would reflect a transformation of access to, and use of, natural resources that it could be equally relevant to study together in order to explore the interaction between politics and local dynamics. Indeed, competition is also be found between

the actors, exacerbating struggles for resources between local users, or in other cases involving dispossession by companies, such land appropriation leading to other forms of enclosure. Other factors besides climate should also be taken into consideration, for example population density and migration.

Furthermore, it would also be interesting to question the technical choices made regarding the promotion and appropriation of irrigation in other contexts, and more particularly the existing gap between experts' technical and economic recommendations – which often ignore issues related to social acceptability – and the design, implementation and appropriation of public action. Indeed, in areas that international expertise might find suitable for small-scale, flexible, low investment irrigation, governments nevertheless prefer to develop infrastructure-heavy, top-led schemes – such as those in countries in the Gulf of Guinea and East Africa. Providing geopolitical analysis of such technological choices in various contexts might therefore be interesting. Moreover, given the diversity of situations that exists, it could also be relevant to relate these studies to how the intended users interact with the chosen irrigation technologies at low level in each specific political context.

By increasing the number of such studies, we could thus contribute to the general understanding of the mechanisms that construct “irrigation configurations”, thanks to the role played at various scales by the social, political, environmental and agrarian patterns within states.

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# Annexes

## ANNEX 1: Chronology of events

<b>Late 17<sup>th</sup> century</b>	Emergence of an Acholi identity.
<b>18<sup>th</sup> century</b>	Emergence of a Langi identity.
<b>1894</b>	Establishment of the Protectorate of Uganda.
<b>1962</b>	Independence.
<b>1966-67</b>	Political crisis: Milton Obote, a Langi elected Prime Minister in 1962, changes the Constitution and appoints himself President for life. The former President, the king of Buganda, flees into exile.
<b>1968-74</b>	First attempt to implement an irrigation scheme in Agoro sub-county.
<b>1971</b>	The army, led by Idi Amin Dada, overthrows Milton Obote, who flees to Tanzania.
<b>1978-79</b>	The Tanzanian army overthrows Idi Amin Dada.
<b>1980-81</b>	Milton Obote's rigged winning of the general election sparks a guerrilla conflict called the Bush war, opposing Obote "II" to Yoweri Kaguta Museveni, among other rebel groups.
<b>1982</b>	A Chinese technical team carries out feasibility studies for an irrigation scheme in the Olweny swamps.
<b>1986</b>	The National Resistance Army, led by Museveni, takes over Kampala: Museveni becomes President and establishes the democracy "Movement".
<b>1986-87</b>	Massive cattle raids perpetrated by armed Karimojong groups deplete northern sub-regions of 90% of their livestock. The Holy Spirit Movement, led by Alica Auma, opposes Museveni's army in Acholi before being defeated near Kampala.
<b>1987</b>	The war against the Lord's Resistance Army, led by Joseph Kony, begins.
<b>1992</b>	Euroconsult updates the Olweny Swamps Rice Irrigation Project designed by the Chinese team.
<b>1993-2002</b>	Return of an Agriculture Officer to Agoro sub-county to promote rice production and irrigation.

<b>1995</b>	<p>Euroconsult carries out the first Environmental Impact Assessment in Uganda for the Olweny Swamp Irrigation Rice Project.</p> <p>Establishment of a new Constitution.</p> <p>National Environment Statute.</p> <p>National policy for wetlands.</p>
<b>1995-96</b>	<p>Forced displacement of the Acholi population into “protected camps” by the government.</p>
<b>1996</b>	<p>First general election since Museveni took over. Museveni is elected President.</p>
<b>1998</b>	<p>Land Act.</p>
<b>1999</b>	<p>National Water Policy.</p>
<b>1999-2000</b>	<p>Implementation of the Olweny Swamp Irrigation Rice Project.</p>
<b>2000</b>	<p>National Environment Regulations.</p>
<b>2001</b>	<p>Museveni wins the general election.</p> <p>Launch of the Plan for Modernisation of Agriculture, as described in the Poverty Eradication Action Plan revised in 2000 in a context of restructuring of international aid.</p>
<b>2002</b>	<p>Operation Iron Fist. In reaction, the Lords’ Resistance Army deploys itself in Lango and Teso sub-regions. The Lango and Iteso populations are also displaced into “protected camps”. The Agriculture Officer in charge of promoting rice and irrigation in the Agoro sub-county flees.</p>
<b>2005</b>	<p>Referendum leading to a multi-party system. Amendment of the Constitution to remove the limit on the number of presidential terms: many cooperation agencies react by significantly reducing the amount of international aid.</p>
<b>2006</b>	<p>The LRA declares a ceasefire. End of the war against the LRA in Uganda.</p> <p>Museveni wins the general election.</p>
<b>2007</b>	<p>Drafting of a National Land Policy begins.</p>
<b>2008</b>	<p>Launch of the FIEFOC programme, which includes the rehabilitation of the Agoro, Olweny, Doho and Mubuku irrigation schemes.</p> <p>Launch of a National Rice Development Strategy.</p>
<b>2011</b>	<p>Museveni shifts the mandate for the FIEFOC programme from the MAAIF to the MWE.</p>

	Museveni wins the general election.
<b>2012</b>	Drafting of a National Irrigation Policy begins.
<b>2012-13</b>	Rehabilitation operation for the Agoro irrigation scheme.
<b>2013</b>	National Land Policy. National Agriculture Policy.
<b>2014</b>	Launch of the Olweny irrigation scheme rehabilitation. Launch of Operation Wealth Creation.
<b>2015</b>	National Climate Change Policy.
<b>2016</b>	Launch of the FIEFOC-2 programme. Museveni wins the general election.
<b>2018</b>	National Irrigation Policy.



## ANNEX 2: List of interviews

	<b>Interviewees</b>	<b>Date</b>	<b>Location</b>
1	Environment Officer, Lira district	26/03/15	Lira
2	Jackson Amai	27/03/15	Lira
3	Ex-LC3 Chairman, Barr sub-county	29/03/15	Barr
4	Parish Chief, Okile parish	01/04/15	Acamroma
5	Ex-Agriculture Officer, Lira district	03/04/15	Lira
6	Commercial Officer, Lira district	05/04/15	Lira
7	Chairman of the Itek/Okile Rice Growers Multipurpose Cooperative Society	08/04/15	Lira
8	Land Board, Lira district	08/04/15	Lira
9	Secretary of the Itek/Okile Rice Growers Multipurpose Cooperative Society Vice-chairman of the Itek/Okile Rice Growers Multipurpose Cooperative Society Jackson Amai	10/04/15	Abolet
10	Parish Development Committee Chairman	12/04/15	Ayel
11	Blockleader, Okile parish	12/04/15	Okile
12	Consultant, LEMU	15/04/15	Lira
13	Consultant, Warners Consultant Limited	17/04/15	Lira
14	Executive Board Members of the Itek/Okile Rice Growers Multipurpose Cooperative Society ; Jackson Amai ; district Officers ; former Chairman ; ten blockleaders ; two rice growers	20/04/15	Abolet
15	Agriculture Officer, Kitgum district	22/04/15	Kitgum
16	Agriculture Officer, Lamwo district	22/04/15	District's headquarters
17	Ex-Manager of ASHICO	26/04/15	Central
18	Arch Design Ltd	28/04/15	Kampala
19	Programme Officer, JICA	22/02/16	Kampala
20	Community Liaison Officer, Pearl Engineering	03/03/16	Lira
21	Commercial Officer, Lira district	04/03/16	Lira
22	Water Officer, Lira district	15/03/16	Lira
23	Chairman of the Itek/Okile Rice Growers Multipurpose Cooperative Society	17/03/16	Abolet
24	Ex-Agriculture Officer, Lira district	04/04/16	Lira
25	Elder owning under freehold title of part of Okile swamp	28/04/16	Ayel
26	Household's interview	March/April 2016	Adeknino
27	Household's interview	March/April 2016	Adeknino
28	Household's interview	March/April 2016	Adeknino
29	Household's interview	March/April 2016	Adeknino
30	Household's interview	March/April 2016	Adeknino
31	Household's interview	March/April 2016	Adeknino
32	Household's interview	March/April 2016	Adeknino
33	Household's interview	March/April 2016	Adeknino
34	Household's interview	March/April 2016	Adeknino
35	Household's interview	March/April 2016	Adeknino
36	Household's interview	March/April 2016	Adeknino
37	Household's interview	March/April 2016	Adeknino
38	Household's interview	March/April 2016	Adeknino
39	Household's interview	March/April 2016	Adeknino
40	Household's interview	March/April 2016	Adeknino
41	Household's interview	March/April 2016	Adeknino
42	Household's interview	March/April 2016	Adeknino

43	Assistant Commissionner, Water for Production, MWE	11/05/16	Kampala
44	Technical advisor, Water for Production, MWE	15/05/16	Kampala
45	Constructing and supervising companies; MWE & Lira district representatives; parishe chiefs	01/06/16	Abolet
46	Ex-Manager of ASHICO	03/07/16	Central
47	Chairman of the Water Users Association	04/07/16	Central
48	Agriculture Extension Officer of ASHICO	05/07/16	Central
49	Elder of Rudi parish, Paknyi village	06/07/16	Pakinyi
50	Agriculture Extension Officer of ASHICO	07/07/16	Central
51	Water Attendent of ASHICO	17/08/16	Central
52	Vice-chairman of ASHICO	18/08/16	Central
53	Ex-Water Scheme Attendant, ASHICO	20/08/16	Pakinyi
54	Ex-Agriculture Officer, Kitgum district	26/08/16	Lokung
55	Director of African Studies, University of South Carolina	30/08/16	via Skype
56	Water Attendent of ASHICO	18/11/16	Central
57	11 participants	21/11/16	Central
58	9 participants	22/11/16	Irumo
59	14 participants	26/11/16	Irumo
60	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
61	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
62	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
63	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
64	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
65	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
66	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
67	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
68	Group's interview with clans owning land in the scheme	September/ Decembre 2016	Agoro sub-county
69	Assistant Commissioner, Water for Production Department, MWE	31/10/17	Kampala
70	Director of Water for Development Directorate, MWE	06/11/17	Kampala
71	JICA Expert, Planning Advisor for Planning Department, MAAIF	07/11/17	Entebbe
72	Assistant Commissionner, Wetlands Management Department, MWE	08/11/17	Kampala
73	Commissioner, Water Resources Planning and Regulation Department, Water Resources Management Directorate, MWE	08/11/17	Kampala
74	Economist for FIEFOC, MWE	09/11/17	Kampala
75	National Project Coordinator for FIEFOC, MWE	09/11/17	Kampala
76	JICA Expert, Advisor for Agricultural Infrastructures, Mechanization and Water for Agricultural Production Department, MAAIF	13/11/17	Entebbe
77	Acting Commissioner, Agricultural Infrastructures, Mechanization and Water for Agricultural Production Department, MAAIF	13/11/17	Entebbe
78	Assistant Commissioner, Policy and Planning Department, MWE	14/11/17	Kampala

79	Business Development Manager, BRL Ingénierie	14/11/17	via Skype
80	Anonymous, MAAIF	15/11/17	Entebbe
81	Acting Assistant Commissioner, Climate Change Department, MWE	17/11/17	Kampala
82	Chief of Party, IFDC	20/11/17	Kampala
83	Programme Officer, JICA	22/11/17	Kampala
84	Agriculture and Rural Development Specialist, African Development Bank	24/11/17	Kampala
85	Former Charmain of the Land Technical Committee	26/11/17	Kampala
86	Senior Engineer, Agricultural Infrastructures, Mechanization and Water for Agricultural Production Department, MAAIF	30/11/17	Kampala
87	Acting Commissioner, Policy Implementation and Coordination Department, Office of the Prime Minister	01/12/17	Kampala
88	Commissioner, Water for Production Department, MWE	04/12/17	Kampala
89	Chairman of the Uganda Land Commission	04/12/17	Kampala
90	Senior Rural Development Specialist, World Bank Senior Agricultural Specialist, World Bank	05/12/17	Kampala
91	Senior Agriculture Officer, MAAIF	08/12/17	Kampala
92	Senior Programme Advisor, DANIDA	10/12/17	Kampala
93	Project Coordinator, MAAIF	12/12/17	Entebbe
94	Country Director, anonymous company	14/03/18	Kampala
95	Business Manager, anonymous company	22/04/18	Kampala

# ANNEX 3: Questionnaires

## Fieldwork in the Adeknino village, Lango sub-region

*Interview with 17 households randomly encountered working in their garden.*

### **Part 1:**

1. What is your name? What is your clan?
2. Are you married?
3. How many people has your household? How many people in your household that help farming?
4. Which activities do you get an income from?

### **Part 2:**

5. Which kind of labour do you use for farming?
6. Are you a member of a group? If yes, which one(s)?
7. Do you own an ox-plough?
8. How many cattle do you have?
9. How big is your land (we can calculate in *atali* if not sure)?
10. How many garden do you have? Are they all inherited land?
11. For every garden: which crop are you growing this year? What did you grow the year before? And the year before? And the year before? What are you planning to grow next year?

### **Part 3:**

12. Do you also have a garden in a wetland?
13. If yes: how did you acquire it? What are you growing there? Do you have any ownership/use conflict?
14. If no: why not? Would like to have one? Explain.

## Fieldwork in the Agoro sub-county, Acholi sub-region

Interview with 9 groups of clan leaders whose *kaka* owns land within the Agoro irrigation scheme.

Participants requested :

- Ladit-kaka;
- Rwot Kweri;
- Rwot Okuro;
- Ludito Mutegi;
- Opinion leaders.

### Part 1:

1. What is the name of your *kaka*?
2. What do you know about the origin of your *kaka*?
3. How many *doggolas* has your *kaka*? Roughly, how many *keno*?

### Part 2:

4. What type of land tenure do you have?
5. What are the various uses of your *ngom kwaro*?
6. What type of farming is practiced in this *ngom kwaro*?
7. Is selling/buying land within *ngom kwaro* possible?
8. Is *hiring land* within your *ngom kwaro* possible?

### Part 3:

9. Who has control of your *ngom kwaro*?
10. Who has authority of your *ngom kwaro*?
11. How do you choose those leaders?
12. How land is allocated?
13. If you have guests on your *ngom kwaro*, do they have the same rights over land?  
What about orphans, disabled persons or women (included unmarried or divorced)?

### Part 4:

14. Is there any difference of the by-laws concerning customary land management between land within and outside the scheme?
15. If yes, how do you explain those differences? Did it start recently or a long time ago?
16. Did the rehabilitation initiate any change of the by-laws concerning customary land tenure?
17. Is there anything/questions you would like to add?

ANNEX 4: Official letters and policy draft

TEL: 231900  
FAX: 235462  
EMAIL: shc@statehouse.go.ug

PO/6

IN ANY CORRESPONDENCE ON THIS SUBJECT PLEASE QUOTE No. ....



State House,  
P. O. Box 25497,  
Kampala,  
Uganda.

6th April, 2011

The Hon Minister  
Ministry of Finance, Planning and Economic Development  
**KAMPALA**

The Hon Minister  
Ministry of Water and Environment  
**KAMPALA**

The Hon Minister  
Ministry of Agriculture, Animal Industry and Fisheries (MAIF)  
**ENTEebbe**

**FARM INCOME ENHANCEMENT AND FOREST CONSERVATION PROJECT: IMPLEMENTATION OF THE WORKS UNDER THE IRRIGATION COMPONENT**

As you are aware, the Government in 2005 secured a loan of UA 31.5 million (US\$50.05 million) and a grant of UA 9.85 million (US\$ 15.62 million) respectively, from African Development Bank (ADB). The money was for financing the implementation of the Farm Income Enhancement and Forest Conservation Project (FIEFOC). The project is due to close on 31<sup>st</sup> December, 2012. However, I am informed that, whereas the forest component has been implemented as scheduled, the irrigation component has lagged behind schedule. Hitherto, no works have started.

I am also informed that, during the Mid Term Review conducted in 2009, Government and ADB agreed to restructure the project. They basically agreed that the four big irrigation schemes of Mobuku, Doho, Agoro and Olweny be financed by the UA 12.5 million (US\$19.96) meant for the irrigation component. However, since then, progress for engaging the civil works contractors on the sites under MAIF has been very slow.

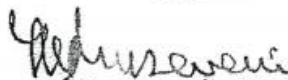
By December 2012, this project would have been eight years old. Therefore, it will be regarded by ADB as an ageing project, which does not qualify for extension for disbursement and closing deadlines. Given the way the project has so far performed in MAIF, I do consider that, even by July 2011, the Ministry may not be in position to have the contractors on the sites in order to beat the 2012 deadline for disbursements.

par 9? DAIF?  
in RWE.

I am further briefed that, the preliminary designs so far received reveal that, due time that has passed from the time the project was designed to-date, the money available may not be enough to cover the four irrigation schemes.

I have therefore decided to restructure the project as follows:

- viii) Given the available money under the financing, Government should focus undertaking works on Mobuku and Doho and, where possible, Agoro Irrigation Schemes.
- ix) The process of implementation of the civil works under the irrigation component is hereby transferred to the National Project Coordination Unit (NPCU) under the Ministry of Water and Environment, for the purposes of implementation. When the civil works are done with, the schemes should then be handed over to MAIF, to carry on with the irrigation activities.

  
Yoweri K Museveni  
PRESIDENT

Copy to Rt Hon Prime Minister  
Hon Minister In-Charge of The Presidency  
The Permanent Secretary, Ministry of Water & Environment  
Permanent Secretary, Ministry of Agriculture, Animal Industry and Fisheries  
The Permanent Secretary/Secretary to Treasury, Ministry of Finance, Planning & Economic Development

In any correspondence on  
This subject quote No. FDD137/312/01

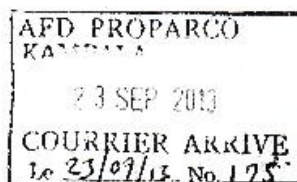


THE REPUBLIC OF UGANDA

MINISTRY OF AGRICULTURE,  
ANIMAL INDUSTRY AND FISHERIES,  
P.O. BOX 34518,  
KAMPALA  
EMAIL: [maif@agriculture.go.ug](mailto:maif@agriculture.go.ug)  
WEBSITE: [www.agriculture.go.ug](http://www.agriculture.go.ug)  
TELEPHONE: 0414255136/0414255137  
FAX: 0414 255183/84  
TELEX: 61287  
KAMPALA, UGANDA

16<sup>th</sup> September, 2013

Local Representative,  
Agence Française de Développement (AFD)  
Kampala



### REHABILITATION OF OLWENY IRRIGATION SCHEME IN LIRA DISTRICT

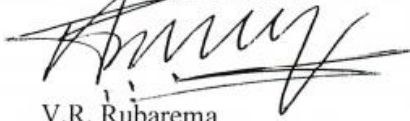
The Ministry of Agriculture Animal Industry and Fisheries (MAAIF) has received communication from the Ministry of Water and Environment, (MWE) regarding availability of funding from Government of Uganda for studies and rehabilitation/construction of Olweny irrigation scheme. (Copy of the letter for ease of reference attached, Annex 1)

Under cover of the said communication, we were informed that procurement of works for the rehabilitation and construction supervision has commenced.

Under the joint MWE-MAAIF Water for Production project funded by the French AFD, we have been working in collaboration with the AFD and the MWE to have a complimentary feasibility study and detailed designs for Kiige and Olweny irrigation schemes to be (odina) advertised as one lot. Whereas we have spent reasonable time developing contract documents, it is now no longer prudent to continue with Olweny, irrigation scheme. The ministry (MAAIF) now proposes a review of the scope of the Request for Proposal of the ongoing procurement to cover only Kiige.



The purpose of this submission is to request that we replace Olweny with a new scheme since there are a number of such schemes with high irrigation potential and very high demand.



V.R. Rubarema

**PERMANENT SECRETARY**

- cc: Hon Minister, Ministry of Agriculture Animal Industry and Fisheries
- cc: Hon Minister, Ministry of Water and Environment
- cc: Permanent Secretary, Ministry of Finance, Planning and Economic Development
- cc: Permanent Secretary, Ministry of Water and Environment

TEL: 22190  
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IF ANY CORRESPONDENCE ON  
THIS SUBJECT PLEASE QUOTE **PO/4**



State House,  
P. O. Box 25497,  
Kampala,  
Uganda

[REDACTED] 2019

[REDACTED]  
Country Director

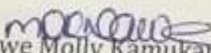
[REDACTED]  
KAMPALA

**RE: IRRIGATION SCHEMES DEVELOPED UNDER JOINT VENTURE PARTNER ARRANGEMENT**

Reference is made to His Excellency the President's letter of even reference dated [REDACTED] 2018, instructing you to work with the Ministries Finance and Agriculture, concerning the above subject matter.

Following a Cabinet decision and further communication from Ministry of Agriculture that, the whole project of water for production be handled by Ministry of Water and Environment, I have been instructed to inform you to work with the Ministries of Water and Environment; and Finance, Planning and Economic Development on the same matter rather than Ministry of Agriculture, Animal Industry and Fisheries.

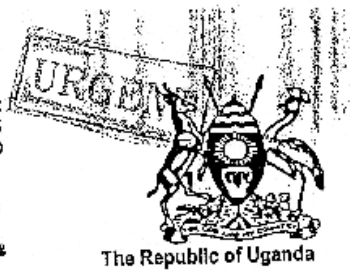
By copy of this letter, Hon. Ministers of Finance, Planning and Economic Development and, Water and Environment are informed to implement H.E. the President's directive as indicated in his letter of [REDACTED] 2018(copy attached).

  
Nawe Molly Kamukama (Mrs.)  
**PRINCIPAL PRIVATE SECRETARY TO  
HIS EXCELLENCY THE PRESIDENT**

**Copy to:** Hon. Minister of Finance, Planning and Economic Development  
Hon. Minister of Water and Environment  
Hon. Minister of Agriculture, Animal Industry and Fisheries

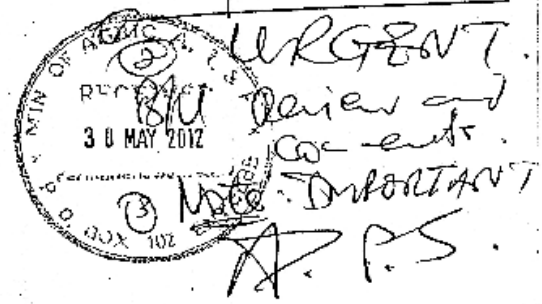
Ben Tomale

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Website: www.mwe.go.ug



MINISTRY OF WATER AND ENVIRONMENT  
P. O. BOX 100  
KAMPALA, UGANDA

C.F. Dev.



In any correspondence on this subject please quote Ref No DEA/109/269/01

May 29, 2012

All Permanent Secretaries

**DRAFT CABINET MEMORANDUM ON THE IRRIGATION POLICY AND NATIONAL IRRIGATION MASTER PLAN**

As you may be aware, Cabinet under Minutes 354(2009) and 382 (CT 2009) noted the directive of His Excellency, the President to Minister of Water and Environment to prepare and submit to Cabinet an Irrigation Master Plan.

Furthermore, under the National Water Policy (1999), Chapter 6: Water for Production, the Ministry of Agriculture, Animal Industry and Fisheries is required to develop comprehensive agricultural development policies, including irrigation policy, consistent with the National Water Policy.

Pursuant to the above, the Ministry of Water and Environment (MWE), in collaboration with the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), steered the process of preparation of the draft Irrigation Policy and National Irrigation Master Plan. The outputs of the above initiatives were presented to a joint top policy meeting of the MWE and MAAIF co-chaired by the Hon. Minister of Water and Environment, and the Hon. Minister of Agriculture, Animal Industry and Fisheries on 16<sup>th</sup> February 2012 at MWE Headquarters in Luzira.

The purpose of this letter, therefore, is to submit to you for your review and comments the Draft Irrigation Policy and the National Irrigation Master Plan.

The Permanent Secretary and Secretary to Treasury is requested to review the two (2) documents and provide certificate of clearance for their submission to Cabinet, while the Deputy Secretary to Cabinet is requested to vet the documents and provide clearance as appropriate.

03 MAY 2012

Given the urgency of having both the draft irrigation policy and the national irrigation master plan considered and approved by Cabinet, I would appreciate your urgent response on the two documents preferably within two (2) weeks from the date of this letter.

  
David O. O. Obong  
**PERMANENT SECRETARY**

Copy to: Hon. Minister of Water and Environment (MWE)  
  
Hon. Minister of Agriculture, Animal Industry and Fisheries (MAAIF)  
  
Hon. Minister of State for Water  
  
Hon. Minister of State for Environment  
  
The Head of Public Service and Secretary to Cabinet  
  
The Deputy Head of Public Service and Secretary for Administrative Reform

CABINET

DRAFT

SECRET

CABINET MEMORANDUM CT (2012) .....

THE IRRIGATION POLICY AND NATIONAL IRRIGATION MASTER PLAN

(Joint Memorandum by the Hon. Minister of Water and Environment, and Hon. Minister of Agriculture Animal Industry and Fisheries)

Minute 354 (CT 2009)  
Minute 382 (CT 2009)

INTRODUCTION

1 Colleagues will recall that Cabinet under Minutes 354 (CT 2009) and 382 (CT 2009) noted the directives of H.E the President to the Minister of Water and Environment to prepare and submit to Cabinet an Irrigation Master Plan.

2 I wish to also inform colleagues that the National Water Policy (1999), Chapter 6: Water for Agricultural Production requires the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to develop comprehensive agricultural development policies, including irrigation policy, consistent with the National Water Policy.

3 Pursuant to the above, the Ministry of Water and Environment (MWE), in collaboration with the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), steered the process of preparation of the draft Irrigation Policy and National Irrigation Master Plan. These outputs were presented to a joint top policy meeting of the MWE and MAAIF co-chaired by the Hon Minister of Water and Environment, and the Hon. Minister of Agriculture, Animal Industry and Fisheries on 16<sup>th</sup> February 2012 at MWE headquarters in Luzira.

This is NOT true

PURPOSE OF THE CABINET MEMORANDUM

4 The purpose of this Cabinet Memorandum therefore is;

- i) To present to Cabinet for consideration and approval the draft National Irrigation Policy and the key findings and recommendations of the Irrigation Master Plan Study report and
- ii) To seek Cabinet approval of the National Irrigation Policy and National Irrigation Master Plan.

May be approved etc. with prior authority MAAIF

## THE POLICY CONTEXT

5 Colleagues may wish to note that **Policies, Regulations and Strategies** that guide and influence irrigation activities include among others:

- a) Water Act, Cap 152
- b) National Water Policy, 1999
- c) National Development Plan (NDP), 2010-2015
- d) Agriculture Sector Development Strategy and Investment Plan, 2010
- e) Water Sector Strategic Investment Plan, 2009

6 **The National Water Policy (1999)**, Chapter 6 - Water for Agricultural Production, provides for the development and management of water for agricultural production with particular reference to water for irrigation, water for livestock and aquaculture. The policy objective is to **"promote development of water supply for agricultural production in order to modernise agriculture and mitigate effects of climatic variations on rain-fed agriculture"**. The National Water Policy requires MAAIF to develop comprehensive agricultural development policies, including irrigation policy, consistent with the National Water Policy. The policy recognizes that there are vulnerable groups (poor farmers/households, women and youth groups) who should be provided with water for production facilities using public funds, besides the promotional activities.

7 I would like colleagues to further note that the **National Development Plan (NDP)** establishes irrigation as the third of eight priorities and as such requires the two Central Government institutions namely MWE and MAAIF to **"support the reduction of dependency on rainfed agriculture through rehabilitation and construction of large and small scale irrigation schemes"**.

## DRAFT NATIONAL IRRIGATION POLICY

8 A draft National Irrigation Policy has been prepared and a copy attached as Annex.

### OBJECTIVES

The overall policy objective for irrigation is:

***"Poverty Alleviation and Economic Growth as a result of the sustainable realisation of the country's irrigation potential mitigating the effects of climate change and contributing to the transformation of Uganda society from a peasant to a modern and prosperous country"***

It is supported by two subsidiary objectives, namely:

## CABINET

*“Improved and expanded irrigation infrastructure and practices contributing to poverty alleviation in Uganda as a result of farmer managed, small scale schemes and best practice service delivery”*

and

*“Improved and expanded irrigation infrastructure and practices contributing to economic growth in Uganda as a result of an enabling investment environment and the profitable investment in irrigated crop production, value addition and/or service provision.”*

### STRATEGIES

- 9 The above draft irrigation policy objectives will be realized by a strategic approach combining investment, institutional and regulatory measures intended to:
- i. increase household incomes and promote equitable access to the benefits of sustainable poverty alleviation and economic growth
  - ii. enhance the availability and quality of gainful employment
  - ii. enhance human capital development
  - iii. improve the coverage and quality of appropriate economic infrastructure in the public and private sectors;
  - iv. promote sustainable populations and the use of environmental and natural resources.

### FUNDAMENTAL GUIDING PRINCIPLES

10 The fundamental guiding principles of the draft Irrigation Policy that influence irrigation activities include among others:

- a) *The allocation and use of water resources* – water allocation decisions that engender equitable access, use, protection and regulation of the resource, applying abstraction permits provided for in Water Act, Cap 152; through integrated approaches subject to social, public health, environmental and economic efficiency considerations. The water allocation decisions should fully reflect Uganda’s international obligations to downstream riparian states.
- b) *Investment planning and decision making* – prioritization of rehabilitation of existing infrastructure; focus on demand driven publicly funded irrigation infrastructure to benefit small farmers of appropriate scale consistent with ability to plan, manage and utilize; promotion of provision of bulk service infrastructure (dams and conveyance canals/systems) necessary to attract commercial irrigation investments in distribution and field systems and financed through leverage fund; stimulation of demand through awareness raising, full participation of small farmers for ownership and sustainability and encourage community contributions to capital costs – responsibility for field systems investments, capacity enhancement to increase abilities to manage and use own facilities.
- c) *Facilitation and regulation of commercial investments* – Creation of an enabling investment environment (bureaucratic transparency and efficiency, international protection mechanisms and insurance schemes, investment incentives and ease of doing business) ; transparent water

CABINET

allocation and land appropriation mechanism with clarity of benefits, including adequate compensation and/or partnerships in commercial investment ventures; promotion of Public Private Partnerships irrigation with balanced, rational and acceptable allocation of risk and apportionment of profits between public and private interests respectively.

- d) *The provision of effective irrigation services* – Establishment of accountable, adaptable and cost effective support services; cost recovery through service charges through informed involvement of users in setting and collection; appropriate community management organization/water user association for publicly irrigation infrastructure; availability of prompt up-to-date regularly accessible information and data based on dynamic research capabilities for corps, climate, markets, prices and value addition opportunities; dedicated institution as apex body in form of Irrigation Secretariat to coordinate and protect varied stakeholder interests, monitor policy implementation, act as one-stop-shop for commercial investors, clearing centre for research, training and capacity building activities and principal repository for information and data on irrigation services.

**IMPLEMENTATION STRATEGY**

11 The implementation strategy of the draft Irrigation Policy is intended to address the fundamental guiding principles and it entails four stages phased into Immediate, Short, Medium and Long Terms.

- a) an *Immediate Term* lasting 4 years, and characterised by continuing work in progress with respect to rehabilitation and upgrading of public/government irrigation schemes, feasibility studies for additional new schemes and bulk service infrastructure, design and establishment of an Irrigation Secretariat, establishment of demonstration small scale irrigation technology and water harvesting, capacity enhancement interventions targeted at both institutional and investment challenges and opportunities;
- b) a *Short Term* lasting 5 years, and characterised by a much needed reinvigoration of the irrigation sub-sector building on immediate term interventions by means of combination of infrastructural and institutional measures, strengthening monitoring and regulation, scaling up research and development in irrigation;
- c) a *Medium Term* lasting 5 years, and characterised by increasing irrigated acreage (small scale, government), both spatial and market expansion, penetration of new markets; and studies and construction of bulk service infrastructure and implement PPPs.
- d) a *Long Term* lasting 12 years, and characterised by increasing integration of small producer into higher level value chains, regional markets and beyond, coupled with increasing commercialisation of production models.

**CONSULTATIONS CARRIED OUT**

12 Colleagues should note that the Ministry of Water and Environment in collaboration with the Ministry of Agriculture Animal Industry and Fisheries drafted the National Irrigation Policy through a consultative process with all key stakeholders at Central Government which included Senior Officials from both ministries, Water for Production Sub Sector Working Group, Top Policy

- ① MWE in collaboration with MAIF? Should be the other way round. Page 4 of 13
- ② No MAIF officials were involved in this!



## CABINET

committees of the both ministries, Technical Support units and District Local Government and there was consensus on the resultant draft Irrigation Policy.

### IRRIGATION MASTER PLAN STUDY

#### OVERVIEW

13 The National Irrigation Master Plan (NIMP) reveals that despite Uganda's plentiful water resources – at least at the national level, estimates of spatial potential for improved irrigation vary from 170,000 ha to over 560,000 whereas the total potential arable area is some 4,400,000 ha. Of the total irrigable potential land 14,420 ha is understood to have been equipped for formal irrigation and with another 53,000 ha or so of managed wetlands. *“Only 5% of the irrigation potential areas have been developed comprising: five government irrigation schemes and small scale irrigation of paddy rice”*. The currently under-developed, marginalized, irrigation sub-sector with generally (but not entirely) low productivity and run down, underperforming infrastructure hardly exemplifies competitive advantage. It is very much intended therefore that the National Irrigation Master Plan (NIMP) restores the sector to competitive advantage, not only with respect to local markets, but also the markets that are expected to emerge or expand at the regional and global levels during the lifetime of the NIMP.

14 The NIMP is aligned to the NDP which clearly calls for and legitimises a robust new commitment both to the improvement and/or expansion of the country's irrigated area, and to the institutional measures necessary to achieve and maintain significantly higher levels of productivity. An overview of the key findings of the National Irrigation Master Plan (NIMP) study includes the following:

- i. The Current Drivers of Irrigation Development in Uganda
- ii. Objectives of Irrigation Development in Uganda
- iii. Irrigation Potential
- iv. Water Availability
- v. The Framework Master Plan
- vi. Financial and Economic Analysis, and the Financing Plan
- vii. Institutional Arrangements for Irrigation

#### DRIVERS IRRIGATION DEVELOPMENT

15 “The National Irrigation Master Plan study identifies at least four current drivers of irrigation development in Uganda. These are:-

- a) *First* among them is the *National Development Plan*, which calls for *“a transformed Uganda society from a peasant to a modern and prosperous country within 30 years”*.

The Irrigation Master Plan is anchored on three kinds of irrigators:

## CABINET

**"Traditional Farmers"** - those practicing subsistence cropping with minimal to nil cash crops;

**"Emerging Farmers"** - those with farming systems combining subsistence with significant commercial cropping, and who hence are already participating in the economy at large;

**"Commercial Farmers"** - those for whom the greater part, if not all of their farming systems comprises cash crops - these include farmers of all size, including those within public schemes that operate commercially oriented farming systems.

Irrigation development enables increasing numbers of traditional farmers to become emerging farmers; emerging farmers to increase the proportion of their commercial production and for the numbers and scale of commercial operations to increase.

- b) The *second* driver of irrigation development in Uganda is *climate change*. Irrigation mitigates against decreased or intensified precipitation, while associated drainage works mitigate against increased flooding. Not only does this secure production, it also reduces perceived risks associated with crop diversification and higher input production systems.
- c) *Thirdly*, there are the *new markets* in which Uganda, given an expanded irrigation sub-sector, can begin to compete in terms of both volume and quality of produce. These markets moreover are not limited to the immediate region, but include (or will include sooner, rather than later) South Asia and indeed the entire world which is facing a looming food security crisis caused by growing populations, land-use change in traditional producing areas and a rise in sea level. Yield gap closure in the traditional producing areas that remain is not expected to fill the gap between demand and supply, so *new build* is going to be essential, and many countries in Sub-Saharan Africa - Uganda included - are well placed for this in terms of the three key factors of production (land, labour and water).
- d) *Fourthly*, and closely related to the third is the increasing number of *major international investors* looking to establish commercial agricultural assets in the region. Although such investments need careful regulation if they are to have social benefits and minimal environmental impact, an appropriate Irrigation Policy and an Irrigation Master Plan such as this one can catalyse such investments by establishment of an investment environment that potential investors consider enabling.

### OBJECTIVES OF IRRIGATION DEVELOPMENT IN UGANDA

16 The NIMP illustrates that irrigation has the potential to contribute to food security, poverty alleviation and economic growth, but given the immense potential that improved rainfed agriculture has for food security in Uganda, the high investment costs associated with irrigation development suggest that the sub-sector should be more oriented towards economic growth and poverty alleviation i) at the schemes in terms of improved yields and higher value production; and elsewhere ii) added value activities and livelihood differentiation accruing to increased trade goods and market activity.

## CABINET

17 The Overall Objective of irrigation development in Uganda, in line with the NDP is therefore: *"Poverty Alleviation and Economic Growth as a result of the sustainable realisation of the country's irrigation potential mitigating the effects of climate change and contributing to the transformation of Uganda society from a peasant to a modern and prosperous country"*

### IRRIGATION POTENTIAL

18 The Irrigation Master Plan is presumed on three land types, namely: *"Type A land"* which lies close to surface water resources on which agricultural water can be managed without the need for storage. For the purpose of this Master Plan Type A potential is estimated to total some 295,000 ha of which 243,500 ha is intended for publicly funded development (approximately 24,000 ha of which will be upland, and the balance managed wetlands);

*"Type B land"* which does not lie close to surface water resources or which cannot be fully developed in the absence of storage facilities and/or feeder systems. Type B land is estimated to total some 272,000 ha of which approximately 9,750 ha is intended for publicly funded development.

*"Off-plan land"* which could be either Type A or Type B, commercially developed but with bulk service infrastructure selectively financed by government on a demand driven basis.

### WATER AVAILABILITY

19 The Irrigation Master Plan (IMP) was subjected to a detailed water audit agglomerated at basin level based on district specific hydrology, agro-climatology and indicator crops. Implementation of the IMP is highly feasible in terms of water availability (although trans-seasonal storage may be necessary at specific locations) and a transparent water rights based allocation mechanism which are necessary for reasons of both equity and environmental management.

In addition to the internal water audit, the IMP's Trans-boundary impact was also assessed and found to be insignificant in terms of downstream demand. Implementation of the IMP will not require prior notice and approval from downstream users as the water withdrawals are below the threshold for this condition to be triggered.

### THE FRAMEWORK MASTER PLAN

20 The Framework Master Plan (FMP) comprises a four stage strategy consistent with the National Development Plan (NDP).

The NDP itself calls for reinvigoration of the irrigation sector; and does so in two contexts.

NSte.  
The MAMF  
SSIP was a reference  
doc.

CABINET

In the context of Enhanced Agricultural Production (NDP §5.1 "Agriculture Development"), Objective 1<sup>1</sup>, Strategy 5<sup>2</sup> involves irrigation for which it specifies six relevant component activities:

- rehabilitation of five government irrigation schemes (Mobuku, Doho, Kiige, Olweny and Agoro)
- management reorganisation of irrigation schemes and transfer of management to the lowest appropriate level and systems to ensure their sustainability;
- establishment of new irrigation schemes (informal, small scale and commercial);
- provision of support: including promotional activities, guidelines, regulations, standards, designs and manuals and technical assistance to small scale and commercial private irrigation developers;
- establishment of demonstrations on small scale irrigation technologies and water harvesting and management to ensure transfer of irrigation knowledge and skills;
- establishment of a monitoring framework for supply, utilisation and management of water for crops

21 The FMP stages are consistent with the time frame adopted for the current and possible future NDPs and are summarised in Table 5.1 below. It is important to note the following:

- i) The capacity building, institutional measures and various studies should be considered crucial to the success of the FMP;
- ii) Although an increasing role for the commercial sector (both domestic and international) is essential to the achievement of the FMP's overall objective, the greater part of the public investments (around 75%) are targeted at the traditional emerging farmers. These are the building blocks not only of the agricultural sector, but of the overall economy, and will remain so for at least the lifetime of the NDP. Also, they are clearly the prime targets of the socio-economic shift called for by the NDP.
- iii) Accordingly, the FMP is intended to increase irrigation service delivery to such farmers by an average of around 6.25% year over the 25 year lifetime of the plan (from a baseline of just under 57,000 ha to over 253,000 ha), as compared with a business as usual rate of under 2.7%.
- iv) The benefits moreover will not be limited to spatial expansion. The FMP also provides for an increasing shift from simple surface irrigation to more precise methods: sprinkler and drip. These will not only reduce pumping costs where applicable, they will also increase savings in water rights-in-use, which could be monetised, they will also reduce the sub-sector's overall demand in the context of the country's shift to an Integrated Water Resources Management (IWRM) paradigm.

<sup>1</sup> "Enhance agricultural productivity"

<sup>2</sup> "Increase supply of water for agricultural production"

CABINET

TIME SLICE	YEARS	KEY CHARACTERISTICS
Immediate	2011 - 2012	<b>Capacity Enhancement and Studies:</b> <ul style="list-style-type: none"> <li>feasibility studies for the rehabilitation of existing government schemes</li> <li>scoping studies for new smallholder and bulk service schemes</li> <li>demonstrations and awareness raising</li> <li>institutional capacity enhancement</li> <li>scoping of options for Public Private Partnerships</li> <li>reformulation of the policy legal and regulatory frameworks</li> </ul>
Short Term	2013 - 2017	<b>Reinvigoration of the Sector:</b> <ul style="list-style-type: none"> <li>institutional measures identified and studied in the Immediate Term;</li> <li>successfully appraised investments;</li> <li>a fresh round of studies (Investments, markets and Public Private Partnerships); and,</li> <li>awareness raising and closer coordination/cooperation with the private sector (which will include the emerging farmers as defined earlier).</li> </ul>
Medium Term	2018 - 2022	<b>Spatial and Market Expansion:</b> <ul style="list-style-type: none"> <li>continuing demand driven development of Type A irrigation potential with new build becoming rapidly more significant than rehabilitation;</li> <li>increasing development of Type B potential; and,</li> <li>the development of bulk service infrastructure.</li> </ul>
Long Term	2023 - 2035	<b>Integration and Commercialisation:</b> <ul style="list-style-type: none"> <li>deeper integration with regional and global markets</li> <li>ongoing spatial expansion of both Type A and B potential;</li> <li>increasing commercialisation of the sector (recall Figure 3.2) - this may involve radical farming system diversification;</li> <li>private investment in bulk service infrastructure and service delivery; and,</li> <li>more Public Private Partnerships.</li> </ul>

22 THE IMPLEMENTATION STRATEGY FOR THE FMP ENTAILS:

An *Immediate Term* lasting 4 years, and characterised by continuing work in progress with respect to rehabilitation and upgrading of public/government irrigation schemes, feasibility studies for additional new schemes and bulk service infrastructure, design and establishment of an Irrigation Secretariat, establishment of demonstration small scale irrigation technology and water harvesting, capacity enhancement interventions targeted at both institutional and investment challenges and opportunities;

A *Short Term* lasting 5 years, and characterised by a much needed reinvigoration of the irrigation sub-sector building on immediate term interventions by means of combination of infrastructural and institutional measures, strengthening monitoring and regulation, scaling up research and development in irrigation;

A *Medium Term* lasting 5 years; and characterised by increasing irrigation area (small scale, government), both spatial and market expansion, penetration of new markets; and studies and construction of bulk service infrastructure and implement PPPs.

A *Long Term* lasting 12 years, and characterised by increasing integration of small producer into higher level value chains, regional markets and beyond, coupled with increasing commercialisation of production models

## FINANCIAL AND ECONOMIC ANALYSIS AND THE FMP FINANCING PLAN

23 The overall costs and benefits of the proposed FMP are set out in Table 5.2 and it can be illustrated that over 75% of the expected budget is dedicated to publicly funded investments which the FMP targets mainly at the traditional and emerging farmers. The government investment costs required for development of the irrigation sector amount to Ugx 38.8 billion, Ugx 128.1 billion, Ugx 191.4 billion, Ugx 1,355.9 billion over the immediate, short, medium and long term periods.

The *Private Sector Leverage Fund* is intended to provide Government with the resources necessary to provide infrastructure that would attract or facilitate private sector investment. Such infrastructure is potentially wide ranging in nature and could include dams; bulk irrigation service infrastructure; grid connections and cold chains etc.

Table 5.2 Summary of Costs and Benefits (Ugx X 10<sup>6</sup>)

ITEM	TERM					TOTAL
	immediate	short	medium	long	continuation	
<b>Government costs</b>						
institutional capacity building	19,212.50	8,562.50	1,822.50	2,500.00	-	32,097.50
public cost of infrastructure	2,407.56	33,450.82	103,445.66	1,146,669.71	850,027.99	2,136,001.74
private sector leverage fund	17,224.74	86,123.72	86,123.72	206,696.92	-	96,169.09
<b>total Government</b>	<b>38,844.81</b>	<b>128,137.03</b>	<b>191,391.88</b>	<b>1,355,866.62</b>	<b>850,027.99</b>	<b>2,564,268.33</b>
<b>Producers' costs</b>						
farmers cost contribution	-	1,753.80	4,292.11	39,330.44	27,877.93	73,254.28
operation and maintenance	-	3,557.75	19,882.59	490,306.52	1,208,269.45	1,722,016.32
production costs	-	32,883.76	162,531.03	2,664,195.15	6,262,575.28	9,122,105.22
<b>total producers</b>	<b>-</b>	<b>38,195.31</b>	<b>186,705.73</b>	<b>3,193,832.11</b>	<b>7,498,722.66</b>	<b>10,917,455.82</b>
<b>OVERALL TOTAL COSTS</b>	<b>38,844.81</b>	<b>166,332.34</b>	<b>378,097.61</b>	<b>4,549,698.74</b>	<b>8,348,750.65</b>	<b>13,481,724.15</b>
Revenues	-	115,566.85	584,302.12	10,195,906.51	24,165,230.82	35,061,006.30
<b>CASH FLOW</b>	<b>-38,844.81</b>	<b>-50,765.50</b>	<b>206,204.51</b>	<b>5,646,207.78</b>	<b>15,816,480.17</b>	<b>21,579,282.15</b>

The cashflow set out in Table 4.2 above was subjected to a financial and macro-economic analysis. Its Financial Internal Rate of Return was fixed at 30% (and achieved as such by setting the annual leverage fund allocations accordingly), which corresponds to an Economic Rate of Return of 45%<sup>3</sup>.

The FMP financing plan is illustrated by Table 5.3 which indicates a gradual reduction in public commitment in favour of user financing, especially in terms of recurring costs.

<sup>3</sup> The large jump from financial to economic RR is explained by the shadow prices associated with the high proportion of exports and/or import substitution expected to accrue to the FMP

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**Table 5.3 The FMP Financing Plan (Ugx X 10<sup>6</sup>)**

ITEM	TERM				
	Immediate	short	medium	long	continuation
<b>Financed by Government</b>					
capacity building	4,803	1,713	365	208	-
infrastructure (new)	602	6,690	20,689	93,857	
infrastructure (replacement)	-	-	-	1,699	56,669
private sector leverage	17,224.7	17,224.7	17,224.7	17,224.7	-
<b>Financed by Beneficiaries</b>					
capital cost contribution (new)	-	351	858	3,219	-
capital cost contribution (replacement)	-	-	-	58	1,859
operation and maintenance	-	712	3,977	40,859	92,944

**INSTITUTIONAL ARRANGEMENTS FOR IRRIGATION**

24 The NIMP study identifies irrigation as a sub-sector with varied and diverse nature of irrigation stakeholders (farmers, Water User Associations, Commercial Investors, Research organisations, etc) and that this requires an apex body in form of a dedicated Irrigation Secretariat to:

- Coordinate and protect interests of all stakeholders
- Monitor implementation of irrigation policy and strategies
- Provide “one-stop-shop” for commercial investors
- Act as clearing centre for research and development, training and capacity building activities and
- Act a principal repository for information and data services on irrigation

**KEY RECOMMENDATIONS OF THE NATIONAL IRRIGATION MASTER PLAN**

25 The National Irrigation Master Plan recommends the following:

- i) Approval and promulgation of **Irrigation Policy** (Copy of draft Irrigation Policy is attached as Annex 1)
- ii) Setting up the proposed **Irrigation Secretariat**, to coordinate the institutional arrangements for investment infrastructure, and operation and maintenance for irrigation services, research & information, agricultural extension, and regulation
- iii) Setting up a **Private Sector Leverage Fund** intended to provide Government with the resources necessary to provide infrastructure that would attract or facilitate private sector investment under a Public Private Partnership (PPP) arrangement with Government. Such

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infrastructure is potentially wide ranging in nature and could include dams; bulk irrigation service infrastructure; grid connections and cold chains etc.

- iv) Immediate follow on preparation of **detailed implementation plan** for the Master Plan which would entail; detailed design of the irrigation Secretariat and Private Sector Leverage Fund, short-term studies addressing soft institutions, and establishment of the master plan implementation monitoring framework among others.

**CONSULTATION**

- 26 Colleagues should note that the Ministry of Water and Environment in collaboration with the Ministry of Agriculture Animal Industry and Fisheries carried out a National Irrigation Master Plan study through a consultative process with all key stakeholders at Central Government which included Senior Officials from both ministries, Water for Production Sub Sector Working Group, Top Policy committees of the both ministries, Technical Support units and District Local Government and there was consensus on the resultant Master Plan.

**CONCLUSION**

- 27 At the next convenient meeting of Cabinet, I shall request colleagues to:
1. Note that Government is required under the National Water Policy (1999) to develop comprehensive agricultural development policies, including the Irrigation Policy, and that the successful implementation of the Irrigation Master Plan considers the following preconditions as critical:
    - a) political commitment, especially as regards institutional changes (including water rights, economic pricing of water)
    - b) The setting up of an Irrigation Secretariat,
    - c) The need for supply and market chain infrastructure, including the provision of facilities to add value to agricultural production, especially that produced by the small farmers,
    - d) Improved rural access and communications infrastructure.
    - e) Crop diversification and improved soil management practices
  2. Note that the NIMP requires substantial investments and hence Government will need to provide additional resources over and above the current sector ceilings.
  3. Note that both the draft National Irrigation Policy and the National Irrigation Master Plan were prepared through a highly consultative process involving all the stakeholders.

*Not true*



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4. Commend both the Ministry of Water and Environment and Ministry of Agriculture, Animal Industry and Fisheries for their joint effort in preparing the draft National Irrigation Policy.
5. Approve the draft Irrigation Policy.
6. Approve the National Irrigation Master Plan (NIMP) and specifically the following key recommendations;
  - a) Establishment of the Irrigation Secretariat
  - b) Creation of a Private Sector Leverage Fund
  - c) Preparation of a detailed implementation plan for the National Irrigation Master Plan
7. Direct the Office of the Prime Minister, working in liaison with both the Ministry Water and Environment and Ministry of Agriculture Animal Industry and Fisheries, to steer the process of establishment of the Irrigation Secretariat.
8. Direct the Inter Ministerial Technical Committee (IMTC) on Water for Production, set up vide Cabinet Minute No. 286 (CT2011), to provide technical support to the process of establishment of the Irrigation Secretariat.
9. Direct the Ministry of Finance, Planning and Economic Development to facilitate the establishment of a Private Sector Leverage Fund for Irrigation.
10. Direct the Ministry of Water and Environment and Ministry of Agriculture Animal Industry and Fisheries to jointly prepare the detailed implementation plan for the Irrigation Master Plan.

*Hon. Minister of Water and Environment*  
*P.O Box 20026*  
*KAMPALA*

*Hon Minister of Agriculture, Animal*  
*Industry and Fisheries*  
*P.O Box 34518*  
*KAMPALA*

*May 2012*

## ANNEX 1 DRAFT IRRIGATION POLICY

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### A1.1 Context

The current National Development Plan is intended to Inter-alia transform Ugandan society from a peasant to a modern and prosperous country by 2040, and to do so in a way that balances wealth creation with poverty alleviation. Government acknowledges the fundamental role that a thriving agricultural sector can play with respect to establishment of a strong national economy. Transformation of the country's agricultural sector, which already represents a significant proportion of the overall national economy, is therefore expected to play a major role with respect to the broader socio-economic transformation called for by the NDP.

Yet despite vast undeveloped land and water resources, the sector remains characterised by sub-optimal yields, poorly equipped institutions and a lack of focussed investment from either the public or private sectors.

The Government also acknowledges the rapidly changing situation beyond Uganda's borders. Participation in an expanding East African Community for instance means that self-sufficiency is not the only solution to food security. This is because production set-backs in one part of the community can be off-set by surplus production in another. Equally, by selecting crops that are most appropriate to a local resource endowment means that natural resources are used in the most productive way. The increased marketing activities that result increase in turn, labour differentiation and hence poverty alleviation and broader economic growth, exactly in line with the NDP, especially where added value becomes a possibility.

But the new markets are not limited to the East African Community. There is a looming global food security crisis and many expert commentators believe that Africa has a major potential role to play in solving it. Some 2 billion new mouths will need feeding by the middle of the 21<sup>st</sup> Century, while climate change and rising sea levels are expected seriously to compromise the ability of another 1 billion people to be fed from traditional food producing areas. Add to this the fact that some of the world's traditional food producing areas are also reducing due to land use change and Uganda's opportunity becomes even more clear. In fact, it will become increasingly obvious that Uganda's regional market will become not the East Africa Community, but rather the Western Indian Ocean rim, made accessible to Ugandan exporters by the massive expansion of the transport and communications network intended for the Community.

Africa's potential role as regards global food security is already recognised by the international investment community whose high net worth family offices, institutional investors and fund managers, aware of the unremitting trend towards higher food prices and robust domestic and regional markets are eagerly looking for commercial investment opportunities in African agriculture - for both food and industrial crops. Uganda is also facing therefore, an unprecedented confluence of investment interest and market opportunity.

However, drought and flood incidence are increasing in both frequency and intensity as a result of climate change and these problems will need to be mitigated if the country's production potential is to be realised in a sustainable and profitable fashion by a combination of public and private investment.

The need for an inclusive demand driven irrigation policy, that addresses not only the need for expanded and intensified production but also institutional shortcomings and need for an enabling investment environment is therefore obvious.

Against this background, the following policy is predicated on:

- Two kinds of investor, namely:
  - the public sector (comprising government and to whatever extent is considered expedient, its development partners) and
  - a well regulated commercial sector (comprising both national and international players).
- Two kinds of institution:
  - "**Hard**" institutions which include public sector institutions in the form of relevant official stakeholders at every level of the civil administrative hierarchy, plus where water is managed on a basin basis, at every level of the hydrocracy. They will also include farmer organisations and private sector service providers and investors in service infrastructure.
  - "**Soft**" institutions which are the policies, laws, regulations and incentives that ensure the smooth and equitable running of the sector, attract new players into it and guarantee the sustainability of the natural resource base on which it depends.
- Three land types, namely:
  - **Type A** land which lies close to surface water resources on which agricultural water can be managed without the need for storage. For the purpose of this policy, Type A potential has been estimated to total some 295,000 ha of which 243,500 ha is intended for publicly funded development under this policy (approximately 24,000 ha of which will be upland, and the balance managed wetlands):
  - **Type B** land which does not lie close to surface water resources or which cannot be fully developed in the absence of storage facilities and/or feeder systems. For the purpose of this policy, Type B land has been estimated to total some 272,000 ha of which approximately 9,750 ha is intended for publicly funded development under this policy.
  - **Off-plan** land which could be either Type A or Type B, commercially developed but with bulk service infrastructure selectively financed by government on a demand driven basis.
- Three kinds of farmer:
  - **Traditional Farmers** which are those practicing subsistence cropping with minimal to nil cash crops;

- *Emerging Farmers* which are those with farming systems combining subsistence with significant commercial cropping, and who hence are already participating in the economy at large;
- *Commercial Farmers* which are those for whom the greater part, of not all of their farming systems comprises cash crops – these include farmers of all size, including those within public schemes that operate commercially oriented farming systems.

And

- Five types of infrastructure:

- *Small Scale schemes* which will be simple gravity fed schemes, usually beginning close to the water source. Sprinkler and drip technology on these schemes will typically be low tech, and in the case of drip for instance, entirely charged by treadle pumps.
- *Formal Government Type A schemes* which will be similar in concept to small scale schemes in that they will be situated close to the water sources, but will require pumped withdrawal facilities at the water source and be generally, will be larger. Any irrigation technology such as sprinkler and drip will also be more sophisticated.
- *Government Type B schemes* which will be similar in concept to Type A except that they will be situated further from the water sources, and will require not only pumped abstraction systems but also storage and feeder systems. Irrigation technology such as sprinkler and drip will also be more sophisticated.
- *Managed (seasonal) wetlands* which will generally be used only for rice, although, there will be some local opportunities for a quick short season legume crop taken off the residual moisture.
- *Private Sector schemes* which will comprise schemes which are entirely financed by purely commercial interests and as a result are beyond the scope of the FMP except that, in order to attract such investments, Government may decide to invest in bulk service infrastructure (dams and large feeder systems for instance).

#### A1.2 Policy Objectives

The overall policy objective for irrigation is:

*“Poverty Alleviation and Economic Growth as a result of the sustainable realisation of the country’s irrigation potential mitigating the effects of climate change and contributing to the transformation of Uganda society from a peasant to a modern and prosperous country”*

It is supported by two subsidiary objectives as follows:

*“Improved and expanded irrigation infrastructure and practices contributing to poverty alleviation in Uganda as a result of farmer managed, small scale schemes and best practice service delivery”*

and

*“Improved and expanded irrigation infrastructure and practices contributing to economic growth in Uganda as a result of an enabling investment environment and the profitable investment in irrigated crop production, value addition and/or service provision.”*

These objectives will be realised by a strategic approach combining investment, institutional and regulatory measures intended to:

- increase household incomes and promote equitable access to the benefits of sustainable poverty alleviation and economic growth
- enhance the availability and quality of gainful employment
- enhance human capital development
- improve the coverage and quality of appropriate economic infrastructure in the public and private sectors;

*and*

- promote sustainable populations and the use of environmental and natural resources.

### **A1.3 Fundamental Guiding Principles**

The fundamental guiding principles with respect to the allocation and use of water resources; for guiding investment planning and decision making; for facilitating and regulating commercial investments and for providing effective public and private services in irrigation will be as follows:

#### ***A1.3.1 Allocation and Use of Water Resources***

- a. The provision of water to meet the domestic demands for basic human needs such as the irrigation of subsistence gardens; watering subsistence livestock and for subsistence aquaculture will not require prior authorisation under the Water Statute 1995. These domestic demands will be given first priority when allocating water resources.

Allocation of water for commercial agriculture (including livestock and aquaculture) will be subject to the regulation of the Water Management Zones and based on the economic, social and environmental values of the water involved. All water users requiring more than 400 m<sup>3</sup>/day, including water made available through the management of wetland recession or from motorised boreholes, for their agricultural activities require a permit for water abstraction as per the terms of the Water Statute 1995.

- b. Water allocations are more likely to be authorised for holistic and integrated approaches to the development of services for households, irrigation, wetland management, aquaculture and livestock use subject to the over-arching requirement that the approaches do not compromise the equitable use and protection of the water source(s) concerned.
- c. All irrigation proposals will be subject to social, public health and environmental impact assessments to be carried out in strict conformity to the pertaining regulations for the approval of the duc authority. Proposals failing to meet the relevant standards may be revised to include suitable and acceptable mitigating measures and re-subjected to the same strict assessments. Proposals failing thereafter to satisfy the relevant standards will be denied permission to proceed.
- d. Noting that high economic water use efficiency at catchment and basin level is associated with increased environmental stream flows and socially equitable access to water for household and productive purposes, water allocation decisions will be based on economic efficiency applied at catchment or basin level. However, since physical efficiencies are a building block of economic efficiency, physical measures that reduce abstraction rates or increase return flows will be encouraged by both financial and capacity building measures. And in the case of increased return flows, water quality standards will be established and enforced.
- e. A system of water use permits and the ability to trade water, the use of which is protected by the permit, has the potential to increase the economic mobility of water and hence economic water use efficiency. But in order for such a system to benefit the poor, any water resource pricing (which is not to be confused with service charging) will be applied only to savings within the amount permitted or in excess of the amount permitted.
- In the case of Water User Associations using publicly funded water management infrastructure (see below) water permits will be granted to the Association, rather than its individual members who have shares in that water permit, thereby allowing individual savings to be consolidated at group level, thereby reaching levels that are meaningful in the event of water trades or transfers.
- f. In order to avoid problems that could arise where a productive enterprise requiring irrigation has an economic lead time in excess of a standard water permit's duration, the duration will be consistent with the use for which it is sought. However, all water permit holders will be required to implement the enterprise according to a pre-agreed timetable. Failure to do so will result in withdrawal of the permit, subject to appeal.
- g. All water allocation decisions will fully reflect Uganda's international obligations to downstream riparian states.

*AI.3.2 Investment Planning and Decision Making*

- a. Investments, in the context of this policy, are either i) publicly funded irrigation infrastructure intended to benefit smallholders or ii) bulk service infrastructure such as small dams and feeder canal systems that are considered necessary to attract commercial investment in irrigation distribution and field systems (and/or their equivalents in drainage).
- b. All public investments in irrigation will be demand driven, including the rehabilitation of existing infrastructure. However, it is intended to generate demand by means of campaigns that raise awareness of the benefits of such investments among potential beneficiaries, with priority given to the rehabilitation of existing infrastructure. In this respect it is noted that beneficiaries will not be limited to the "peasant" farmers that the NDP is intended to transform. They will also include commercial investors attracted to the agricultural sector for reasons noted in section 1 of this policy, and at whom the bulk service infrastructure is targeted.
- c. In line with best practice, the scale of investments targeted at small farmers will be consistent with their ability to plan and manage them. This does not however, preclude the possibility of large capital programmes comprising multiples of small, community managed schemes. Neither does it preclude large commercial schemes invested at the developers' own risk, or large bulk service infrastructure intended to attract them.
- d. All investments implemented on behalf of small farmers will be identified, planned and implemented with their full participation. This participation will include a contribution to capital costs, ideally at 30% of the total. However, discretionary investment subsidies will be made available to vulnerable groups (such as female headed households, youth, the poor and the disabled especially in drought prone areas). Community contributions can be made in cash or in kind, and ideally will be defined by the level of the works – meaning that publicly funded infrastructure brings the service in question to a certain level, beyond which the beneficiaries themselves are responsible for implementing the works – examples of which would be tertiary canals or field drains etc.
- e. Irrigation technology levels in public investments will be consistent with the beneficiaries ability to use it. However, ongoing capacity building will be provided in order that their ability to use increasingly sophisticated technology is raised over time. Furthermore, as abilities are raised in this respect, Government will provide subsidies and other financial instruments to assist small farmers to avail themselves of new technology. But any such financial instruments will be justified on the basis of the economic and/or environmental value of any water saved.
- f. Bulk service infrastructure to attract commercial investment will be financed from a "leverage" fund, so-called because a given investment by government is intended to lever up a larger investment from the commercial sector. The target leverage ratio for this will be 1:3 or more. In other words, an investment

of Ugx 1 million from the leverage fund is expected to attract an investment of at least Ugx 3 million from the commercial sector.

h. 8.3.3.3 Facilitation and Regulation of Commercial Investments

- a. Commercial players will be more likely to invest in irrigation services if they perceive the investment environment as enabling, and they will assess this key characteristic in terms of:
- the ease of doing business in Uganda;
  - the ability to amortise any hard currency debt and to repatriate profits (ex-tax and other statutory payments due);
  - bureaucratic transparency and efficiency,
  - Uganda's participation in international contract protection mechanisms and insurance schemes, and
  - incentives such as tax breaks, import permits and (in the case of foreign investors) work permits.
- b. A transparent land and water allocation mechanism is needed in order to ensure that all stakeholders are involved in and benefit from any investment that is made. This will mean that land is not forcibly expropriated in favour of the commercial investor from those legally using without due compensation or other benefits being agreed and settled. These benefits could include partnerships in the commercial venture. Similarly, the dangers inherent in "implicit" water permits and the like will be obviated by making them explicit and subject to the prevailing regulatory framework.
- c. Several kinds of Public, Private Partnerships are appropriate for irrigation. These include: pure investments whereby the commercial investor simply invests in infrastructure; service delivery using publicly or commercially funded infrastructure and actual production: All will be actively encouraged by this policy. However, unlike water supply and sanitation, revenue based PPP models in irrigation are subject to a greater degree of risk. But allocation of risk between the public and private sides of the participation should represent an acceptable compromise between the best interests of both parties. In other words, the government should not take all of the risk and the commercial investor should not take all of the profits. Similarly, it will be necessary to develop guidelines with regard to which party is the beneficiary of a water permit.

**A1.3.3 The Provision of Effective Irrigation Services**

- a. Equitable, wise and productive use of natural resources is facilitated by the availability of accountable, adaptable and cost effective support services. This has both institutional and financial implications.
- b. Direct recurring costs will be fully recovered in the form of service charges. But best practice shows that collection rates are highest when the users themselves are involved in both setting and collecting them: Indirect recurring costs, such as those accruing to the operation of basin level infrastructure, or bulk service



- infrastructure may however be deemed the responsibility of government, and hence financed from the increased tax revenues accruing to the productive use of the larger infrastructure.
- c. At the grass roots on publicly funded service infrastructure, the principle service institution will be the water user association. These should be financed by member subscriptions and led by committees characterised by adequate levels of female participation (and where relevant, youth). Service fees for external service delivery will be paid to the service provider by the Water User Association, rather than individually by their members, thereby reducing transaction costs between service provider and service user. Where necessary or relevant, such Water User Associations will be represented on catchment committees, or will participate in pan-sectoral water using federations to whatever extent is considered necessary or appropriate.
  - d. In order to help all users of irrigation services to make best use of those services and the new marketing opportunities that Uganda faces, it is essential that all services are adaptive to users' needs. This calls for a strong and dynamic research capability.
  - e. In particular, there is a pressing need for comprehensive, regularly updated and accessible information and data services concerning crops, markets (and any associated tariff and non-tariff barriers in the case of exports), prices, added value opportunities and climate etc.
  - f. Because of the varied and diverse nature of irrigation stakeholders, an apex institution will be required in the form of a dedicated Irrigation Secretariat to:
    - coordinate and protect the interests of all such stakeholders;
    - monitor implementation of this policy and the strategy legitimised by it;
    - provide a "one-stop-shop" for commercial investors;
    - be a clearing house for research and capacity building activities; and be the principal repository for the information and data services.

#### **A1.4 Implementation Strategy**

The implementation strategy is intended to address each of the fundamental guiding principles. To do so it requires four stages, one each for the Immediate, Short, Medium and Long Terms.

##### ***A1.4.1 Immediate Term: 4 years***

The Immediate Term is intended to capture ongoing work in the sector and incorporate it into the overall strategy while establishing a strong institutional and knowledge based foundation for the future. Accordingly in addition to continuing the work in progress with respect to the rehabilitation and upgrading of five government schemes, the Immediate Term will be characterised by capacity building, studies and investigations. More specifically:

*With respect to infrastructure*

Government will undertake or commission:

- scoping missions for new schemes intended for traditional farmers
- scoping missions for new schemes and bulk service infrastructure, including the possibilities of urban waste treatment works for irrigation, intended either for emerging farmers or to encourage private investment in irrigation production and service delivery
- feasibility studies for the rehabilitation of five government irrigation schemes.

*With respect to hard institutions*

Government will:

- design and establish an Apex Irrigation Secretariat
- establish demonstrations of small scale irrigation technology and water harvesting and the like and will begin to disseminate appropriate WFP technologies
- prepare a capacity building programme with respect to awareness raising about the benefits of irrigation
- implement an awareness raising programme with respect to the benefits of irrigation
- design, establish and operate an ICT/IS unit, and an associated Monitoring and Evaluation Unit
- prepare and begin implementation of a comprehensive capacity building and training for service delivery at all levels (including the private sector)
- clarify roles regarding multi-purpose storage and trans-district schemes
- design and implement a capacity building programme for the quality assurance of storage infrastructure
- prepare and implement a comprehensive capacity building programme for improved, decentralised O&M, including recurring cost recovery
- prepare a capacity building programme re: rights based water markets and the nature of economic efficiency
- design remote sensing networks, and the appurtenant institutional requirements, in selected pilot catchments
- strengthen in-country research capacity

*With respect to soft institutions*

Government will:

- undertake or commission an export tariff barrier review and design a long term tariff monitoring and advisory service to be included in the Apex Secretariat

- undertake or commission a study of possible tax breaks and other incentives for private investment
- undertake or commission a study of current water rights system & potential water market modalities
- undertake or commission a study of operating rules for multi-purpose dams

**A1.4.2 Short Term: 5 years**

Building on the foundation established by the end of the Immediate Term, the Short Term is intended to reinvigorate the sector by means of combination of infrastructural and institutional measures. More specifically:

***With respect to infrastructure***

Government will

- rehabilitate 5 government schemes
- construct up to 200 ha of small scale irrigation
- construct up to 560 ha of formal government irrigation
- develop up to 7,000 ha of managed wetlands according to regulations

***With respect to hard institutions***

Government will:

- continue supporting ongoing and expanded demonstrations, including farmer to farmer visits, of small scale irrigation technology and water harvesting etc while continuing to disseminate of appropriate WfP technologies
- maintain and expand awareness of the benefits of irrigation
- establish the tariff monitoring group designed during the Immediate Term
- expand the capacity building programme for awareness raising begun in the Immediate Term
- undertake ICT/MIS based monitoring and evaluation of sector performance
- continue comprehensive capacity building and training for service delivery at all levels (including the private sector)
- maintain ongoing quality assurance of water storage infrastructure
- continue the comprehensive capacity building programme for improved, decentralised O&M, including recurring cost recovery
- implement capacity building programmes with respect to rights based water markets and economic efficiency monitoring
- install remote sensing networks, and establish the appurtenant institutional requirements in selected pilot catchments

- provide training in the application of IWRM principles to irrigation and the role of strategic water allocations
- undertake or commission an expanding programme of demand driven research and development

*With respect to soft institutions*

Government will:

- change tariff laws as appropriate
- revise the laws as necessary to allow financial incentives for commercial investment
- register customary irrigation water used as a customary right
- implement operating rules for multi-purpose dams

**AI.4.3** *Medium Term: 5 years*

With wide awareness established with respect to the potential benefits of irrigation, the Medium Term will be characterised by a spatial expansion of irrigation services; penetration into new markets in the East African region and beyond; and the introduction of increasingly sophisticated institutional measures. More specifically:

*With respect to infrastructure*

Government will:

- construct up to 720 ha of small scale irrigation
- construct up to 1600 ha of formal government irrigation
- develop up to 16,700 ha of managed wetlands according to regulations
- undertake or commission studies into possibilities for bulk service infrastructure and Public Private Partnerships
- construct bulk service infrastructure studied during the Immediate Term and implement PPPs on a case by case basis.

*With respect to hard institutions*

Government will:

- continue supporting ongoing and expanded demonstrations, including farmer to farmer visits, of small scale irrigation technology and water harvesting etc while continuing to disseminate of appropriate WFP technologies
- maintain and expand awareness to include new markets and added value opportunities
- continue tariff monitoring
- provide ongoing career enhancement and on the job training for government staff
- continue ICT/MIS based monitoring and evaluation

- continue comprehensive capacity building and training for service delivery at all levels (including the private sector)
- maintain ongoing quality assurance of water storage infrastructure
- continue a comprehensive capacity building programme for improved, decentralised O&M, including recurring cost recovery
- implement pilot water markets in selected sub-basins
- continue and expand remote sensing in selected pilot catchments
- continue or commission an expanding programme of demand driven research and development

*With respect to soft institutions*

Government will:

- develop a policy framework for risk and water right allocation in the case of public private partnerships

**A1.4.4 Long Term. 12 years**

In line with the National Development Plan, the Long Term will be characterised by accelerating integration of the small producer into the economy at large and an increasing ratio of commercial to subsistence cropping as a result of continually improving irrigation service. More specifically:

*With respect to infrastructure*

Government will:

- construct up to 13,000 ha of small scale irrigation
- construct up to 15,300 ha of formal government irrigation
- develop up to 142,800 ha of managed wetlands according to regulations
- expand implementation of bulk service infrastructure and PPPs

*With respect to hard institutions*

Government will:

- continue supporting ongoing and expanded demonstrations, including farmer to farmer visits, of small scale irrigation technology and water harvesting etc while continuing to disseminate of appropriate WfP technologies
- maintain and expand awareness raising to include new markets and added value opportunities
- continue tariff monitoring
- provide ongoing career enhancement and on the job training for government staff
- continue ICT/MIS based monitoring and evaluation

- continue comprehensive capacity building and training for service delivery at all levels (including the private sector)
- maintain ongoing quality assurance of water storage infrastructure
- continue a comprehensive capacity building programme for improved, decentralised O&M, including recurring cost recovery
- expand water markets into selected sub-basins
- expand as required remote sensing in selected pilot catchments
- continue or commission an expanding programme of demand driven research and development

No activities are anticipated with respect to soft institutions in the Long Term.

#### **A1.5 Assumptions and Preconditions**

Irrigation is not an end in itself, it is merely a means by which to deliver or manage the soil moisture available to the growing crops in a timely fashion and at suitable quality levels. Consequently the initiatives anticipated by this Policy (i.e. the rehabilitation, upgrading and development of sustainable irrigation infrastructure, the establishment of an enabling environment and strong service oriented and adaptive institutions; and the crafting and enforcement of an appropriate regulatory framework) will not of themselves guarantee the required growth of the agricultural sector in the absence of successful parallel factors or initiatives.

These are likely to include but not be limited to:

- political commitment, especially as regards institutional changes
- supply and market chain infrastructure, including the provision of facilities to add value to agricultural production, especially that produced by the small farmers
- effective operation of the Country's food reserve.
- improved rural access and communications infrastructure.
- crop diversification and improved soil management practices

as discussed elsewhere in the NAP

This policy therefore assumes that the same factors that have inspired its formulation, will also inspire the formulation and implementation of the necessary parallel initiatives at policy, strategy and programme levels.