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South Africa's Agrarian Question

Hubert Cochet, Ward Anseeuw, Sandrine Freguin - Gresh

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South Africa's agrarian question

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Hubert Cochet, Ward Anseeuw,
Sandrine Fréguin-Gresh

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Acronyms and abbreviations

ABP	area-based planning
AgriBEE	agricultural black economic empowerment
ANC	African National Congress
ARC	Agricultural Research Council
BEE	black economic empowerment
CASP	Comprehensive Agricultural Support Programme
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement (Agricultural Research Centre for International Development)
CPA	Communal Property Association
FAF	Financial Aid Fund
FI	farm income
FSR	Farming Systems Research
FW	family worker
GVA	gross value added
ha	hectare
IDC	Industrial Development Corporation
IDP	Integrated Development Plan
IYFF	International Year of Family Farming
IRR	internal rate of return
JSE	Johannesburg Stock Exchange
LARP	Land and Agrarian Reform Project
LRAD	Land Redistribution for Agricultural Development
LSU	large stock unit
MCP	millers-cum-planter
MD	man day (full day of work for one person)
MGK	Magaliesberg Graan Koöperasie (Magaliesberg Grain Cooperative)
mt	metric tons
NAFCO	National African Federated Chamber of Commerce and Industry
NFG	new freehold grower
NFI	net farm income
NVA	net value added
PLAS	Pro-Active Land Acquisition Strategy
PS	production system
PTO	permission to occupy
RADP	Recapitalisation and Development Programme (also called RECAP)
RDPP	Recapitalisation and Development Policy Programme
SAFEX	South African Futures Exchange Market
SLAG	Settlement/Land Acquisition Grant

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SSG	small-scale grower
WUA	Water User Association
WUFA	Winterveld United Farmers' Association
ZAR	Zuid-Afrikaansche Republiek – the Transvaal Republic

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Preface

This book aims to provide a better understanding of existing dynamics in agriculture in South Africa.

Coordinated by Hubert Cochet, Ward Anseeuw and Sandrine Fréguin-Gresh, it combines two approaches. The first is based on six agrarian diagnostic case studies, implemented between 2009 and 2012 by a dozen French Masters' students and their South African counterparts. This work was funded by the French Development Agency within a collaborative framework between AgroParisTech, CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement/ Agricultural Research Centre for International Development) and the University of Pretoria. Under the supervision of the coordinators of this book, the results of these studies are presented in a coherent set of chapters (Chapters 4 to 9), and form the basis of this compilation. The second approach (Chapters 1 to 3 and 10 to 14) presents supporting or transversal analyses of the case studies or complements them through additional work that the coordinators are engaged in South Africa. These chapters are authored by the coordinators themselves (individually or co-authored, Chapters 2 and 12 in collaboration with local colleagues). These two approaches allow for a rich combination of grounded empiricism with broader and transversal overviews and analyses.

Twenty years after the first democratic elections, debates regarding agriculture in South Africa are particularly vivid as the country still faces major challenges within and beyond the sector: stagnating land reform, concentration along agricultural value chains, growing inequalities and unemployment, continuous poverty in rural areas and environmental degradation. In this context, a better understanding of agrarian dynamics, particularly the role and place of agriculture as well as the challenges encountered by farmers over the last decades, is crucial. The coordinators and authors of the book hope that this work, though not exhaustive in its documentation of the manifold aspects and dimensions of South Africa's agrarian question, will contribute to a better understanding of these challenges.

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Introduction: South Africa's agrarian question

Hubert Cochet, Ward Anseeuw and Sandrine Fréguin-Gresh

> The Land Shall be Shared Among Those Who Work It! … The state shall help the peasants with implements, seed, tractors and dams to save the soil and assist the tillers. (Freedom Charter, 1955)[1]

In 1994, about 60 000 white commercial farmers occupied 87 million hectares and were engaged in large-scale, commercially oriented farming enterprises; about 2 million black households were engaged in one way or another in small-scale, often subsistence farming in the former bantustans (or homelands) and reserves, covering about 13 million hectares.[2] Where do we stand today, two decades later?

The year 2014 marked the 20th anniversary of South Africa's democratic transition. The first decade was one characterised by post-apartheid euphoria, by many questions and doubts, and by testing and manoeuvring. The second decade allowed South Africa to position itself as an emerging nation, but was also one in which the euphoria of the first decade dissipated. The fulfilment of people's expectations for delivery on transformative promises is no longer a desire but a demand from the public.

Since 1994, the South African economy has undergone profound restructuring, mainly focused on macroeconomic stabilisation, and become increasingly integrated into global markets. The agricultural sector and rural areas are also to be restructured, as apartheid systematically and purposefully restricted the majority of South Africans from meaningful participation in the agrarian economy. The assets of millions of people were directly and indirectly ruined and access to skills acquisition and to agricultural self-employment was racially restricted. The accumulation process under apartheid led to extreme spatial and economic segregation, particularly in the rural areas and in the agricultural sector.

Land and agrarian reforms were the African National Congress's (ANC's) main promises during its ascension to power in 1994. The Reconstruction and Development Programme noted that these reforms were necessary to redress the injustices arising from forced removals, the denial of access to land, and the continuous destruction of the peasant activities of non-white populations (ANC 1994). Several reforms were implemented to find a solution to overcome the dire situation of these rural areas, to promote access to residential and farm land, as well as to revitalise and develop agriculture in the former reserves and bantustans and on the newly acquired lands. On the one hand, agriculture was to be restructured in the broader framework of the country's liberalisation and deregulation process and the subsequent restructuring of downstream and upstream segments of value chains and markets. On the other

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hand, according to the possibilities of manoeuvring within such a liberal economic framework, a provision for state intervention was made to engage in land matters. Land reform represented a major objective of the government's strategy for Growth, Employment and Redistribution, with the ANC aiming to redistribute 30 per cent of the land during the first five years after the end of the apartheid era (DoA 1995). Since then, in the context of applying a policy framework oriented towards positive discrimination, several other programmes and policies focused on linking land reform to development and agricultural production have been implemented.

These reform processes thus represent not only decisive elements of the ideological transition, but are also presently seen as a condition for the economic and social stabilisation of the country. The 1995 White Paper on Agriculture presented its mission as to: 'Ensure equitable access to agriculture and promote the contribution of agriculture to the development of all communities, society at large and the national economy, in order to enhance income, food security, employment and quality of life in a sustainable manner' (DoA 1995: 5).

2014: Reflecting on the country's agrarian transition

Twenty years after the country's first democratic elections, it seems relevant and necessary to reflect on the present agricultural situation. This book endeavours to assess what has (and hasn't) been achieved with regard to South Africa's agrarian transformation. It presents the policies and measures implemented, and analyses their implications and outcomes concerning the necessary restructuring of the country's agricultural sector. By choice, the book takes an ad hoc position, understanding and assessing the present situation through the lens of the past and ongoing transformations of local agricultural processes. Although the initial objective of the book was not to provide policy recommendations, the results presented question what has happened over the last two decades, provide critical analyses, examine the state of affairs of the agricultural sector, and offer some food for thought for debating the ways forward regarding South Africa's agrarian change.

Unlike most other sub-Saharan African countries, South Africa is not an agricultural-based country.[3] More than 60 per cent of its population lives in urban areas and agriculture represents less than 3 per cent of the country's gross domestic product. Reflecting on the country's agrarian transformation in the broader framework of its structural transition remains, however, of utmost importance for several interrelated reasons. First, it is of prime importance for political reasons. The vision of an agricultural sector that meets the needs of the people who work the land in a more equitable manner not only goes back to the Freedom Charter of 1955, but remains a core ideological and political aspect of the country's transition. Not addressing the latter would be neglecting the legacy of past dispossessions and of more than 100 years of segregation. Secondly, from a development aspect, if rural economies are to be revitalised, the redistribution of land alone will not be sufficient. As has been shown by the many failures of (South Africa's) land and agrarian reform programmes

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(Anseeuw & Mathebula 2008; Kirsten & Machethe 2005; Lahiff 2001), broader approaches to structural reforms are necessary. Redistribution would be incomplete if not linked to development, wealth creation and an overall transformation of the social class structures and patterns of accumulation. As is the case with land, unfinished agricultural and general rural transformation and restructuring will linger as a time bomb. Zimbabwe, a fellow settler economy where, except for land, few transformations focused on agriculture (Matondi 2013), is illustrative of the latter scenario. In a period of extreme unemployment and increasing inequalities, South Africa's agrarian transformation is also of socio-economic importance. This is critical given that the transformation and performance of other sectors such as mining and manufacturing is stagnating. With unemployment rates skyrocketing and inequality and poverty rising, agriculture's role as a buffer (for the poorest households as well as for the economy overall) is increasingly important. This is reflected in the government's latest agricultural policy action plan. It not only aims to establish a more integrated and inclusive agricultural and rural economy, but also to support the National Development Plan target of creating 1 million jobs in agriculture by 2030 (NPC 2012).

The United Nations declared 2014 the International Year of Family Farming (IYFF) to recognise the importance of family or small-scale farming in reducing poverty and improving food security, in particular after the 2008 global food crisis. South Africa, however, faces a striking reality: for over a century the duality of the agricultural sector and the 'planned destruction of black agriculture' (Chapter 1) and of family farming in South Africa have led to and reinforced major challenges and difficulties in overcoming poverty, unemployment and hunger in rural areas. The IYFF aims at better recognising the contribution of family farmers as 'agents for alleviating rural poverty and ensuring food security for all; as stewards who manage and protect natural resources; and as drivers of sustainable development' (IFAD 2014: 1). However, the IYFF throws into question the rural future in South Africa, where the reflection on agrarian transformation is situated in the framework of the global agro–food–energy nexus (Margulis et al. 2013), as well as the role of agriculture in structural change. While the country is often considered a key player on the African scene, a pioneering agricultural investor engaging in the continent's agrarian transition (Hall 2012), questions about the roles and implications of South Africa's different agricultural production and investments models are part and parcel of the broader 'year of (family) agricultural' debate.

A focus on South Africa's agrarian reform

South Africa's political and academic debates regarding its rural transformations have mainly been limited to land.[4] Most research work has also focused on the country's land reform process, while overlooking the transformation of agriculture and the country's agrarian structure. With its focus on South Africa's agrarian question, this book should contribute to filling this gap.

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The country's focus on land is mainly related to its policy choice. Land reform is an important component of the broader agrarian reform, particularly in the case of South Africa and other former settler countries where land was and still is core to the socio-economic, political and ideological realms. Land represents a crucial building block for the country's transition, for various reasons. It is a valuable, tangible and immovable resource of limited quantity, unequally distributed. As such, it is a primary and fundamental resource for many South Africans. Land is also highly symbolic for many people, forming part of their identity. People are bound to their 'ancestral' land with its cultural and religious values and norms, they relate to their natural surroundings in personal ways, and land provides them with a fundamental feeling of 'connectedness' with the social and cultural environment (Anseeuw & Alden 2010).[5] As such, it is a core element of the country's complex social relations of production and reproduction, within which (potential) conflicts are bred and might be mushrooming (Pons-Vignon & Solignac Lecomte 2004).

As a result, land was at the origin and is still at the heart of the country's reform policies. These land reform policies (redistribution, restitution, tenure reform – see Chapter 2), as well as the White Paper on Agriculture, all focus on the land question. Even though the latest policies flirt with agricultural issues (funding for settlement into agriculture, coordination of departments for better service delivery), they remain centred on land reform projects. Limited to only one of the sector's production factors, such an approach is project-oriented (on a case by case basis) and does not aim at an overall restructuring of the sector.

This reflects the country's choice to emphasise land access by claimants and profound restructuring of the sector in favour of previously marginalised populations, in combination with maintaining agricultural productivity and not jeopardising national food security (Derman et al. 2006). As such, the White Paper on Agriculture promotes: 'A highly efficient and economically viable market-directed farming sector, characterised by a wide range of farm sizes, which will be regarded as the economic and social pivot of rural South Africa and which will influence the rest of the economy and society' (DoA 1995: 4).

A predominantly land reform approach (versus a broader agrarian approach) is also related to the international discourse that emerged after the 1990s. Over the 20th century, different agrarian reform policies were undertaken in various countries. Beyond ideological variations, these policies were based on redistribution to transform agrarian structures, mainly through significant state intervention. Generally, agrarian reforms were aimed at redistributing large-scale farms or estates, often elite controlled and not intensively used, into smaller agricultural structures which could benefit a larger share of the population. Since the 1990s, in parallel with the global trend of liberal globalisation, both the agrarian reforms themselves and the terms used to refer to them were gradually banished from donor discourse and placed in the category of past interventionist policies. They were replaced by land reform, referring to two concepts. On the one hand, it referred to land tenure policies

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organised around the 'securitisation of land' and often accompanied by titling programmes, in particular in countries/regions where private rights over resources did not exist or were not formally recognised. On the other hand, it related to market-assisted land reform or market-assisted mechanisms for land redistribution based on the willing-seller/willing-buyer principle promoted by the World Bank (Borras et al. 2009). In this context, the term 'land reform', which only emerged recently, was used to bury politically the concept of (redistributive) 'agrarian reform', relegating state intervention to land titling on the one hand and activating land markets on the other, all without genuine redistribution. In order not to fall into this semantic trap, it was decided in this book to study the transformation process of South African agriculture in its entirety, in terms of agrarian reform. However, as will be seen, its impact on the effective redistribution of land and the transformation of agrarian structures has remained limited.

Without a broader agrarian approach, results of far-reaching transformations of rural societies often remain limited. It is thus important to open a more encompassing discussion on South Africa's agrarian transformation, one which includes not only land, but also all the other production factors, in order to understand the broader agrarian society and the diversity of farm structures and their evolution.

South Africa's agrarian question has traditionally been framed as a singular national question. This book's objective is to include the multiple facets of the agrarian question in South Africa. Going beyond the issue of people's relationship with land – and the policies implemented to modify the latter – the book also includes aspects related to multiple agrarian dynamics and the development models promoted.

Agrarian refers broadly to the agrarian structure(s) of a country. According to a narrow approach, agrarian reform often includes five dimensions: price and market policy; land reform, including the development of land markets; value chains, agro-processing and input supply channels; rural finance; and market institutions. A broader definition, however, focuses on a broader set of issues, such as the class character of the relations of production and distribution in farming and related enterprises, and how these connect to the wider class structure in agricultural and rural environments (Cousins 2007). It thus concerns economic and political power and the relations between them.

An agrarian diagnosis approach: A long-term approach acknowledging farm diversity

Studying farming in South Africa, its transformations as well as its results, can give rise to methodological challenges. Indeed, the vastness of the national territory and the wide variety of bioclimatic conditions have brought about the development of a large range of agricultural forms, making it difficult to 'cover' the current diversity by conducting research with reasonable human and financial means. Furthermore,

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the combination of a social and political history marked by almost a century of discrimination and planned destruction of 'black' farming, and economic changes at the beginning of the 1990s (e.g. state withdrawal and economic liberalisation, restructuring of downstream and upstream industries, increasing integration into international markets) has shaped the particularly significant contrasts between the different forms of production which characterise the agricultural sector. That is why most research on South African farming focuses on only one or several aspects or on certain forms of production, without grasping the overall dynamics. This raises a number of questions: How should one then proceed to remove these methodological constraints? What approaches and concepts should be used? How should one take into account the social, political, economic and technical transformations that have influenced, and which continue to underlie, South African farming? How should the technical and economic results of the different contrasted forms of agricultural production be characterised with a view to comparing them? How should these productive agricultural processes be placed in the wider dynamics of the agricultural sector, as well as the rural life and communities of South Africa?

Agro-geographers and agro-economists adhering to the school of comparative agriculture have developed a systemic approach to the agrarian system (Cochet 2012). Referred to as the agrarian diagnosis approach, it documents productive processes in agriculture and analyses their long-term insertion into the socio-political dimension of rural societies in order to analyse agrarian transformations in a different way to what has been done so far (see Chapter 3). As a holistic concept that takes into account historical developments and the geographic traces of different forms of agriculture, it enables one to characterise major changes affecting production processes, in particular the transformation of agrarian structures. Resulting from the need to combine different analytical scales (plot, herd, farm, but also region and value chain) and to express all the relations linking the technical and social spheres over time, an analysis in terms of an agrarian system goes beyond the study of technical systems of uses of natural resources or the study of distribution structures of farmland. It envisages the technical changes and the transformations intervening in social relationships, not only at the local level, but also at the national or even international levels. That said, although the agrarian diagnosis approach is comprehensive and holistic, it cannot document all aspects and dimensions of South Africa's agrarian question. As such, although acknowledging them, this book does not discuss issues such as labour regimes, gender and patriarchy.

It is hoped that this book will contribute significantly to the academic literature by promoting the agrarian diagnosis approach. Among the many concepts used in farming systems research, the agrarian system stands out in the works of (francophone) agronomists, agricultural economists and geographers (see, for an overview, Sourisseau et al. 2014). It is a pluri-disciplinary, all-encompassing concept that allows sense to be made of agricultural activities, their diversity and complexity at local and regional scales in a way that accounts for both ecological and socio-economic dimensions. In addition to using this tool to feed the debate

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regarding South Africa's agrarian transformation, the objectives of this book are to demonstrate the relevance of the approach for agricultural research, to present the usefulness of its tools and instruments in terms of identifying obstacles and to assess solutions for agricultural development. Although the approach is relatively well known in French-speaking Africa, this is not the case in English-speaking countries, making this book a potentially valuable asset for agricultural research in east and southern Africa.

Extensive fieldwork: Revealing the realities on the ground

Applying the agrarian diagnosis approach allows for disaggregated analyses to be undertaken based on extensive fieldwork encompassing multidisciplinary dimensions. Indeed, the agrarian diagnosis approach should be viewed as a procedure that can be broken down into several activities, all interlinked and providing information of different types and at various levels to cover all the dimensions and complexities of the concept of the agrarian system: defining and delimiting a study area (a 'small-scale agricultural region') where it is possible to formulate hypotheses on the socio-spatial dimensions of the agrarian system and to understand productive processes in agriculture over time; studying the historical dynamics and reconstructing the evolution of production systems' trajectories to enable the identification of existing production systems in their diversity; characterising and analysing from a technical and economic perspective the functioning of the identified production systems; and resituating them in socio-economic and institutional dynamics (organisation and division of labour between the primary, secondary and tertiary sectors; insertion of farms into value chains and access to markets; the social logics of farm operation and decision-making; exchange relations and balance of power, particularly as regards accessing and recognising property rights, etc.).

This book will as such significantly complement the few academic works that exist in South Africa on the country's agrarian transformation. It takes on a broader, more encompassing agrarian perspective than the many works that are related (logically, considering the policy focus of the country) to land reform projects (e.g. Aliber & Cousins 2013; Anseeuw & Mathebula 2008; Cousins 2013) and offers a multidisciplinary stance that adds to the mainly monodisciplinary, macro/panel-based economic analyses that present aggregated assessments (Nieuwoudt & Groenewald 2003). It goes beyond macroeconomic, political–economic analyses (Bernstein 1996, 2013) or project-based and very specific studies (Lahiff et al. 2012) by presenting multi-level assessments and combining in-depth, empirical and disaggregated results based on extensive fieldwork with macro-analyses.

To feed these multi-level and multidisciplinary assessments, six detailed agrarian diagnoses inform and structure the book. Implemented between 2009 and 2012 in six different agricultural regions in South Africa, they allow for original, well-informed analyses of the rural situation and its (non-)transformation. Based on rich data – often lacking in South Africa, at least for certain forms of agriculture

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– the book reveals the often ignored and overlooked realities on the ground. The different regions, chosen for their agricultural prevalence, their different agricultural landscapes and their diversified farm structures, are: the banks of the Nwanedzi River around Tzaneen (Limpopo province) (Chapter 4); the Hazyview region (Mpumalanga) (Chapter 5); the Kat Valley (Eastern Cape) (Chapter 6); the sugar-producing region of Sezela (KwaZulu-Natal) (Chapter 7); the irrigated area of Jacobsdal (Free State and Northern Cape) (Chapter 8); and the region around Brits (North-West province) (Chapter 9).

These chapters are the results of a project funded by the French Agency for Development and implemented by AgroParisTech in collaboration with CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement/Agricultural Research Centre for International Development) and the University of Pretoria.[6]

Structure of the book

Chapters 1 and 2, more descriptive than analytical, set the stage for the rest of the book by giving an overview of the evolution of South Africa's agricultural sector. Oriented to the past and taking on macroeconomic and policy-oriented postures, these chapters describe the broad structures and policies which shaped and presently configure the agricultural sector. The present debate regarding South Africa's agrarian question would not be possible without a historical perspective, since South Africa's socio-economic and political legacy has been so specific and substantial in shaping its present configuration, including its agricultural sector. However, rather than anchoring these chapters and the entire book in the past, the approach is to combine past and present characteristics and transformations and present how the latter have been moulded and are evolving.

Chapters 3 to 9 have two objectives: conceptual and methodological, and empirical. Studying farming in South Africa, its diversity and its transformations, can lead to methodological challenges. As such, Chapter 3 introduces and details the origins of concepts which are central to the agrarian diagnosis approach, and describes the implementation of the approach with a particular focus on the South African context. Chapters 4 to 9 present the results of the implementation of agrarian diagnoses in the six regions identified. Based on extensive empirical data, they offer in-depth descriptions of the production systems in these regions, ranging from a historical perspective and narrative as to how they were shaped, to precise and well-informed accounts of how they are presently structured.

Chapters 10 to 13 provide cross-analyses and discuss the results within the broader context of South Africa's agrarian question and transformation. Based on the empirical results presented in Chapters 4 to 9, Chapter 10 provides a transversal analysis rooted in productivity gaps, with the distribution of value and revenues presenting the persistent inequalities embedded in South Africa's agriculture. Chapter 11 discusses the ambiguities, limits and failures of the country's agrarian

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reform. Chapter 12 criticises the government's present position and instruments – such as its strategic partnerships and contract farming, touted as a perfect solution for smallholder and emerging farming (re)vitalisation – as being smoke and mirrors, thus questioning the capacity of policy choices to effectively restructure agriculture in South Africa. Chapter 13 depicts a situation that is far from grassroots agrarian reform and that tends towards the increased concentration of the means of production through a process of corporatisation.

Notes

1 See http://www.anc.org.za/show.php?id=72, accessed 2 November 2015.

2 During the apartheid regime, legislation divided the South African populace into four distinct population groups based on racial classification. Although the notion of population groups is now legal history, it is not always possible to gauge the effects of past discriminatory practices, and the progress of policies designed to eradicate them, without reference to it. For this reason, the authors of this volume continue to use the terms black/African, coloured, white or Indian/Asian people where it is pertinent to the analysis of data.

3 Following the classification of the World Bank's WDR08, South Africa is categorised among the urbanised countries, as are other emerging countries such as Brazil, Chile and Mexico (World Bank 2007).

4 A few of the numerous works are Cousins (2000); Anseeuw (2006); Lahiff (2007a, 2007b); Hall (2010); Aliber & Cousins (2013).

5 An interesting example of this issue was the debate between President Mbeki and Tony Leon, the then leader of the Democratic Alliance, around the question of who is an African. See, Mbeki lashes out at whites, *Pretoria News*, 8 January 2005.

6 CIRAD is a French agricultural research and international cooperation organisation working for the sustainable development of tropical and Mediterranean regions.

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1 *The planned destruction of 'black' agriculture*

Hubert Cochet

For those familiar with agriculture in sub-Saharan Africa, travelling in the former homelands of South Africa elicits surprise. How is it that this densely populated countryside, dotted with rural settlements created by the forced removal policy under apartheid, is left uncultivated, largely abandoned to bush and underused? The landscape is characterised by very few livestock, evidence of erosion despite extensive woody vegetation and occasional signs of farming. Following on from 1994, when researchers, academics and the development community began reflecting on the future of these lands and how to revive 'black' agriculture, there is now a need to understand the historic and contemporary factors that have led to the massive abandonment of agricultural activities (Cochet 1998). How did the formerly vibrant production systems that once covered these lands die off, to the point that the landscape is now dominated by marginally used lands, even though rural population density is higher than ever? Reconstituting the steps and processes underlying this planned destruction is a prerequisite to any attempt at reconstruction.

Overview of previous production systems

In his book *The Rise and Fall of the South African Peasantry*, Colin Bundy reconstructs the agrarian systems of the late 19th century in the future homeland of Ciskei, part of what was then the vast Cape Province (Bundy 1979). Many black farmers had already adopted animal traction and were using ploughs and carts. New crops, like winter wheat, had appeared in farmers' rotations. Sheep farming was widespread, thanks to the growing international wool trade.[1]

Market-based peasant farming was reinforced by a growing market for agricultural products and livestock, and higher prices brought on by the diamond boom in Kimberley and the Witwatersrand gold rush. Together with the adoption of animal traction for tillage and transportation which enhanced labour productivity, this led to larger marketed surpluses (beyond what was needed for the obligatory hut tax) and the development of sheep pens and irrigation systems. The result was a thriving and dynamic form of black agriculture (Bundy 1979).

This process of agricultural development also occurred on lands which had been newly controlled by white people or on Crown lands, where squatter-peasants and tenants would settle in the absence of the white owners (Bundy 1979).

Bundy's book gives the impression that there was no significant difference in labour productivity between white and black agriculture in the late 1800s, at least in this region of South Africa. Although this hypothesis would need to be tested by further

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historical research, it is clear that the enormous differences in productivity observed today are primarily the result of relatively recent differentiation processes, and are largely due to the massive appropriation of resources by the white minority in the 20th century.

White farmers had thus to face both foreign competition and domestic competition from the black peasantry, whose productivity was equal to theirs. Despite limited access to land, black farmers were more cost-efficient and tended to have more intensive techniques, and thus better returns. As a result, black farmers continued to produce marketable surplus, even after white people no longer managed to do so (Bundy 1979).

> Peasants had for long been a target for the anger and resentment of white farmers. These farmers had two main complaints. Firstly, they were unable to compete successfully with African peasants, whose production costs were kept relatively low through their access to family labour. Secondly, the existence of an African peasantry and the resilience of the African subsistence economy seriously impeded the flow of labour to white farms. (Maylam 1986: 89)

The 'reproduction threshold' of African farms was lower than that of farmers of European origin, owing to a less expensive lifestyle, particularly with regard to imports. This allowed them to stay above the reproduction threshold longer when prices were low, and to generate a surplus even when white people could not. And yet, the vibrancy and resilience of black agriculture would bring about its downfall. As labour competition grew between black and white agriculture, it became clear that the development of the latter – along with the mining sector – would require the methodical destruction of the first.

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First signs of distress

Several decades before the 1913 Land Act sounded its death knell, black agriculture had started to weaken. Border wars, forced removals and long distances from markets undermined black agriculture in the Cape Colony, and particularly in the Ciskei. The rinderpest outbreaks in the 1890s dealt a heavy blow to the peasant economy in the country, as well as in many parts of eastern and southern Africa. In Transkei, for example, 80–90 per cent of cattle were decimated (Bundy 1979: 120; see also Wilson & Thompson 1971), brutally decapitalising farms (as cattle were the main form of capital accumulation) and reducing animal traction.

In addition, taxes were increased. From 1880–1890, the poll tax and hut tax were introduced on the reserves, as well as a tax on ox carts, known as the wheel tax (Fauvelle-Aymar 2006). In the Cape Colony, the Location Acts of 1876 and 1884 turned black sharecroppers, tenants and farmers into 'squatters' whose land could be expropriated as necessary (Fauvelle-Aymar 2006).[2]

The development of domestic markets encouraged landowners to modify production processes and rely more on salaried labourers, leading them to evict tenant farmers (Fauvelle-Aymar 2006). Wages were much lower than the production share that previously remained with sharecroppers, the value of which increased as markets grew. Thus began the proletarianisation of rural populations.

Moreover, as transportation infrastructure expanded and improved in areas occupied by white people (railways and roads linking major cities), black people were pushed deeper into their reserves, further penalising their market access.

With an increasing number of farmers becoming wage labourers, socio-economic differences among black farmers deepened, separating those with access to animal traction (thanks to having replenished their herds after the rinderpest epidemics, often because they had the largest herds before) from the impoverished majority. In Transkei, the 19th century saw massive migration toward the Colony of Natal and its sugar cane plantations, while food production collapsed and grain imports skyrocketed (Bundy 1979).

The development of mining and industry required a large influx of cheap labour, which aggravated the labour shortage felt by white farmers. It became obvious to white mine owners and farmers that they needed to radically increase labour availability without increasing its cost. This gold and maize alliance (Bundy 1979) in many ways fuelled the policy of massive proletarianisation of black populations that dominated the 20th century.

Finally, the turn of the 20th century also witnessed one of the first massive aid programmes to white agriculture, providing support for fences, construction of the first dam, irrigation development, credit, housing construction, outreach services and preferential rail rates (Bundy 1979; Fauvelle-Aymar 2006).

Land grabbing and the further weakening of black agriculture

The Land Acts of 1913 and 1936, leading to the delimitation of the 'native reserves' (the first one identifying 8 per cent, the second one 13 per cent, of the country's land surface), were the culmination, and more particularly the institutionalisation, of a land-grabbing process already well under way. Because black agriculture was concentrated in a small portion of the territory, it was brutally affected by high population densities. During the decades following the Land Acts, the lands in the reserves degenerated and a process of rapid underdevelopment took hold. 'Not only did the peasant communities cease to export grain: they ceased to grow sufficient to feed themselves' (Wilson & Thompson 1971: 58).

In addition, the cash and labour tenants who rented plots in white areas were ejected (Bundy 1979). Black people in white zones were only recognised as servants (wage labourers), labour tenants and squatters (Bundy 1979). Initially spared from expulsion, labour tenants were in time removed from the white areas so that the only black people left were wage labourers. According to Bundy (1979: 235), of the

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1 million labour tenants living with their families on white farms in 1936, only 163 000 remained in 1964 and 16 000 in 1973, mostly in Natal where the system lasted longer. However, the process of widespread impoverishment varied regionally, as suggested by work done during this research.

Ciskei and Transkei

In the Ciskei, the constant displacement of populations caused firstly by multiple border wars and then by the racial gerrymandering that accompanied the establishment of the bantustan of Ciskei, led to an earlier and more severe crisis than elsewhere, which was further aggravated by soil and climatic conditions that impeded biomass production.

In the district of Victoria East (typical of the Ciskei), the population grew from 6 900 inhabitants in 1875 to 15 800 in 1925, while agricultural surplus fell from 19 000 to 10 000 pounds (wool, hides and grains). At the same time, food purchases tripled while costs of clothing and blankets dropped threefold and tools and supplies by half (Bundy 1979, according to Henderson 1927; see also Wilson & Thompson 1971). In the period 1949–1951, even during the good years, food production covered only half the nutritional needs of the district of Keiskammahoek (Wilson & Thompson 1971) and 60 per cent of household income was spent on food. The same was true in the Transkei, where household survival depended largely on migration. Production fell between 1910 and 1940, and 30 per cent of households had no livestock. The concentration of the black population on small swathes of land increased resource pressure. 'In most areas fuel was so scarce that the dung and herbage required for compost was burnt on cooking fires' (Wilson & Thompson 1971: 56).

Despite more than half a century of continuous plunder and crises, a significant portion of rural households were still working in agriculture by the mid-20th century. In the 1950s and 1960s, mixed crop–livestock production systems were still 'alive'. Interviews conducted in 1998 with elderly persons from the village of Twecu on the site of their former homeland, before being forcibly removed under the 'betterment plan' (see below), implicitly revealed elements of this production system: animal traction coupled with intensive crop rotations, double annual harvests on the best plots' crops, with animal manure carried by cart to the fields. Gardens situated near the houses were enclosed by hedges and/or ditches and stone walls, and a large number of vegetables were grown (Cochet 1998).

The remains of this agrarian system are now barely visible in the landscape. In some of the older hamlets, one can still make out land boundaries and identify talus embankments and enclosures surrounding houses, or animal traction equipment, neglected and riddled with rust.[3]

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KwaZulu

In the Colony of Natal, the settlement of English migrants during the second half of the 19th century and the free transfer of land by the British Crown paved the way for the rapid development of large sugar plantations that supplied sugar to the Cape Colony and metropolitan areas. Missions run by Protestant missionaries were established in the 1870s, representing land where Zulu people had to settle.

To increase cane production and optimise the first sugar mills set up at the turn of the century, black populations from the reserves were 'encouraged' to plant sugar cane on the lands left to them, in order to pay the per capita tax. As the allocation of a quota was related to land ownership, having a land title was already at this time practically a prerequisite. For example, the inhabitants of the Ifafa mission (near the Sezela plantation) felt constrained to buy their own piece of land from the state in instalments over twenty-five years, which further contributed to their impoverishment (Chapter 7). This modus operandi foreshadowed the contractual relationships that the Sezela plantation currently offers to 'historically disadvantaged' growers: all sugar cane farming operations (ploughing, furrowing and planting) are done at the mill where the cane is delivered, not only because growers have no capital, but also because the men have gone to work on white farms, plantations or in the mines. The reduction of pasture that has resulted from planting cane has worsened the problem of overgrazing, leading to epidemics, the further reduction of livestock farming and decapitalisation of families (Bièque & Kippeurt 2012) (see Chapter 7).

Crocodile River Valley (Brits)

The construction of the Hartbeespoort Dam and irrigation systems in 1924 made it possible to effectively implement the 1913 Land Act and expel black populations from the region of Brits (Rémy & Clerc 2011). Indeed, the area's history, marked by the construction of the irrigation system, led to the expansion of white agriculture and the dispossession of black communities, who were pushed outside the irrigated area into territories that would later, in 1977, be promoted as the 'independent' bantustan of Bophuthatswana (Chapter 9).

Lowlands of the northern and eastern regions of the former Transvaal

At the turn of the 20th century, these regions were still relatively inhospitable, mainly owing to malaria. As a result, few white families settled there and the Land Act of 1913 had no real impact until malaria was eradicated and irrigation systems developed. It was not until the late 1940s and early 1950s that white farmers settled in these regions, after being given plots of rezoned lands that had been previously attributed but were yet to be developed.[4]

Because white settlement came somewhat later, black agriculture was able to prosper on the margins of the land grabbing and resource monopolisation going

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on elsewhere in the country. Take, for example, the mixed farming–animal traction system described in Anjuère and Boche (2009). Found on the banks of the Nwanedzi River (Limpopo), this system allowed a good portion of families settled in the bantustan of Gazankulu to live with dignity. The main crops were maize, beans, squash, groundnuts, earth peas, *matimba* (from the sugar cane family), various types of vine crops and melons. In addition to these subsistence crops, farmers grew wheat and sorghum, which they processed to sell as traditional beer. They also planted manioc and mango trees on the residential plots. Each household had access to collective rangelands and grazing rights to surrounding farmlands, allowing them to raise cows and oxen. Cattle were kept by younger members of the family, who took them to graze during the day and brought them back in the evening to the family kraal. The most modest families rented oxen from the more well off to prepare their plots. In addition to cattle, households often had goats and pigs, fed with a mixture of corn bran and water as well as household waste (Anjuère & Boche 2009) (see Chapter 4).

'Agricultural development' planning for black people

Betterment plan and normative agricultural planning

History provides countless examples of normative development programmes designed to 'modernise' African agriculture, and which have been imposed on local populations in a more or less authoritarian fashion. First, there were the major land-planning operations that, from one end of the continent to the other, have tried to wipe the slate clean. With the help of bulldozers, they have carved into the landscape large structures reflecting modernity, simply because they are mechanised. These projects were first initiated in the late colonial period and continued post-independence: the great groundnut projects in Casamance and British Tanganyika; the large irrigation systems of the CFDT (French Textile Company) where shea and locust bean forests were razed; the *paysannat* system in the Belgian Congo and Rwanda–Burundi borders; the state-run farms in Guinea and the Ethiopian Rift, and so on.[5] Across the continent, 'agricultural development' was based on the same simple principle: African agricultural and pastoral practices were archaic and the cause of erosion and deforestation. They needed to be done away with as quickly as possible and replaced by 'rational' practices. This vision of African agriculture was based on an almost complete ignorance of existing production systems, the historic and ongoing changes to these systems and their potential for development (Cochet 2005).

The forceful reorganisation of land under betterment planning was an extreme variant of this type of 'development', only comparable – in design, not results – to authoritarian villagisation attempts in the 1970s and 1980s in countries like Tanzania and Ethiopia.

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After African people were displaced to the reserves – a process that culminated with the Land Acts of 1913 and 1936 – authorities set out to plan 'agricultural development' reserved for black people. Betterment planning dictated that cropland, pasture, woodlands and residential areas be grouped together and follow a standard land-use scheme. This 'agricultural development' policy, both particularly authoritarian and fundamentally racist with its concept of 'separate' development, had far-reaching consequences given that nearly the entire population had been displaced to lands that covered 8 per cent, and later 13 per cent, of the territory. It is no surprise, then, that when white experts assessed native agriculture they would point out its weaknesses: low yields, erosion, overgrazing. The Bantu people were invariably blamed when in fact these weaknesses were merely the result of a widespread and extensive process of land grabbing.[6]

From this point on, the issue of overgrazing started to appear in South African literature. Overgrazing was repeatedly used to explain erosion and degradation in the homelands, and to justify drastic measures to limit the number of livestock raised by black families (Alvord 1949). Proclamation No. 31 of 1939, Control of and Improvement of Livestock in Native Areas, aimed to crack down on the 'demon of overgrazing' (De Wet 1995: 42). Staff of the Department of Native Affairs were tasked with eliminating 'redundant' livestock, after determining the load factor ad hoc and an acceptable number of head for each community. This interpretation ignored the fact that keeping livestock in a restricted area would necessarily increase the pressure on the land and subsequently lead to pushing people off their reserves. It was a 'tragedy of the commons', staged from the outset and just in time to justify operations that would lead to additional decapitalisation. This interpretation also overlooked the fact that cattle represented the only remaining form of capital accumulation for black families, as all other forms had been closed off to them. Finally, it did not account for the fact that manure was the only way to fertilise cultivated areas given the lack of access to synthetic fertilisers.

This imposed land-use policy was unevenly applied before World War II, but was intensified under the Smuts government starting in 1945. Emphasis was on building 'viable' production units in the homelands, although not once was the fight against overgrazing called into question. Because there was not enough land for black-run farms to reach sufficient size, it was decreed that only a small number of 'viable' farms would be promoted in each community. Large numbers of families were encouraged to cease agricultural and pastoral activities and move to rural villages. It was the end of the one-man-one-plot era. The population on each reserve was divided into two groups: full-time peasant farmers and full-time wage labourers (De Wet 1995). The model precluded any form of pluri-activity. Proclamation No. 116 of 1949 gave full powers to local officials, called Native Commissioners, to enforce zoning under the betterment plan and sanction recalcitrant farmers (De Wet 1995). It thereby ushered in an era of agrarian despotism in the homelands and future 'autonomous' or so-called 'independent' bantustans once the Commissioners' role was delegated to black intermediaries following the Bantu Authorities Act (No. 68 of 1951).

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In 1954, the government entrusted the Tomlinson Commission with a vast feasibility study of the homelands. The Commission toed the government line, reaffirming the need to create viable production units in the homelands and move surplus populations to rural villages to create a pool of workers for industry and the mines. But the objective of creating 'viable agricultural holdings' in the homelands was not prioritised. Just as before the war, priority was given to fighting erosion and overgrazing, to forced villagisation and to the authoritarian zoning of lands into grazing areas, arable areas and residential areas.

The National Party's agenda had shifted. It no longer sought to reinforce an admittedly ineffective and normative model of black agriculture. Rather, the goal was to turn the homelands into labour pools, controlled by sheer distance (isolated in the countryside) and used to benefit white farms, industries, mines and other sectors.

Women, children and the elderly took care of what remained of farming operations, while men migrated to work in the mines or on white farms to make ends meet. Farms looked increasingly like *minifundios* (one man, one plot) planned by the authorities, comparable to those in Latin America, or the small plots of land given to workers of Soviet *kolkhoz* (collective farm) that were so critical to improving their meagre remuneration.

But the liquidation of black agriculture went even further in South Africa. The agriculture sector in the homelands was almost entirely destroyed and what remained was not enough to sustain the whole labour force, resulting in lower labour costs to employers. It was state pensions given to the elderly, starting in 1965 (see below), that sustained households. The case of the South African homelands is thus a special case insofar as nearly the entire rural population was turned into wage labourers. Today, this nearly complete proletarianisation weighs heavily in attempts to revitalise black agriculture.

The results of the velleity for agricultural development in the 'reserves', and in particular the villagisation and 'improvement' projects, had largely no positive impacts, at least not for the targeted populations. In all the bantustans, maize production stagnated between 1947/48 and 1967/68 (down from 3.8 to 3.7 million bags), while the population increased. At the same time, maize production on white farms increased from 30 to 105 million bags (Bundy 1979: 229).[7] The trend was even more pronounced for sorghum production: down from 1.2 to 0.7 million bags in the bantustans, and up from 1.8 to 9.5 million bags on white farms (Bundy 1979: 229).

The impact of these projects varied depending on whether villagisation brought families of similar origin together or simply superimposed families from different regions onto local groups. Impact also depended on the geography, the proportion of land zoned as 'pastoral', and whether the betterment planning included small-scale irrigation projects. Variations notwithstanding, the assessment of Chris de Wet (1995) and the examples below confirm that the policy clearly contributed to the destruction of black agriculture: smaller plots per family, rigid crop rotations,

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phasing out of animal traction, distancing and disruption of the flow of biomass within production units, the slaughter of 'surplus' animals, decapitalisation and lower yields.[8] It also had detrimental effects on social cohesion within communities. The following examples illustrate how, in the different regions studied in detail in this book, this deadly process flourished.

Nwanedzi Valley (Limpopo)

The case of the Nwanedzi Valley (Limpopo) illustrates the destruction caused by betterment planning. The belated arrival of white settlement in the region meant that black agriculture was able to develop until the 1950s and 1960s. Betterment planning was not actually implemented until the 1970s by the authorities of the Gazankulu bantustan, some twenty years after the Tomlinson Commission's recommendations. Maud Anjuère and Mathieu Boche (2009; Chapter 4) explain how families living in the area were forced to leave their homes and land and to settle on residential plots of the regulatory size of 2 000 m^2. The villages of Mandlakhazi and Nwadjaheni were thus created. Despite this process of forced villagisation, nearly all the families continued for two or three years to farm their old plots, particularly those with water access. However, the plots were unfenced owing to lack of financial resources and harvests were almost always destroyed by the villagers' cattle. Only a few households, where the head was a well-paid wage labourer (compared to the low standards of the time), had the means to fence their land and continue farming these plots. The so-called 'arable' lands were, in turn, reserved for a state plantation (sisal and mango). The vast majority of families in the area had no choice but to adapt their production systems to the meagre plots of land allocated to them. The objective of betterment planning was fully achieved here: villagisation forced most men and women to seek work on the neighbouring white farms, or to migrate to Johannesburg or Pretoria.

New Forest village

The case of New Forest village (studied by Hélène Regourd) in the former bantustan of KaNgwane (Mpumalanga) illustrates the process and consequences of setting up a small irrigated area as part of betterment planning.[9] The New Forest irrigation scheme, built in 1965 – 720 hectares (ha) and 535 families living in five villages – was a gravity-based furrow irrigation system. To be eligible for an irrigated plot, families had to be full-time farmers and have fewer than five head of livestock.[10] Agricultural production was managed, organised and supervised by the state and by the Agricultural Rural Development Corporation. Technical and infrastructure support was provided until farming operations were fully autonomous. Tractors with drivers were made available to farmers, along with crop management plans (planting and harvesting calendar), pesticides, chemical fertilisers and dosage instructions. The state managed the scheme and water distribution, as well as the marketing of any surplus (Regourd 2012; Chapter 5).

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Some years later, in the 1970s, new government measures imposed a new state-controlled system of food and vegetable crops, fully mechanised and fertilised, to allow for two growing seasons per year: summer food crops (maize, groundnuts, squash) and winter cash crops (cabbage, tomatoes, onions, etc.). Greatly limiting any pastoral farming, the new standards put an end to the mixed crop–livestock systems that previously prevailed, creating systems that relied exclusively on synthetic fertilisers (Regourd 2012).

Black farmers cultivating the slopes of the Sabie Valley (Hazyview), situated outside this small irrigation scheme, were ordered to cease their activities immediately because 'they pumped too much water from the river and would run it dry', even while large-scale irrigation schemes were widely developed for white farmers. Those who did not comply were arrested. According to a witness of these events, 'this is when blacks started to go hungry in the valley, because they depended solely on rain' (Regourd 2012: 53). Here too, draught animals were abandoned because farmers were no longer allowed to cultivate beyond small gardens, often less than 200 m^2 in area (Chapter 5).

Promoting a small black farming elite in the bantustans

The idea of establishing 'viable' farms entrusted to a small black elite in the bantustans – promoted for a time in the 1940s and recommended by the Tomlinson Commission but quickly abandoned in favour of the planned *minifundios* – resurfaced in the 1970s. It was decided that the number of smallholdings should be reduced from 500 000 to 50 000 (Bundy 1979: 228).

This new policy prefigured what was to come in the context of post-apartheid agrarian reform with emerging farmers. The concept of promoting a small number of black farmers was based on a model copied from 'modern' agriculture and implemented on white farms: large monoculture production units based on productive specialisation and strict separation of crops and livestock, partial mechanisation, massive use of synthetic inputs (fertilisers and pesticides), wage labour and heavily subsidised.

The result of this new 'development' policy was irrevocable. The government subsidies channelled through the bantustans' puppet governments simply accelerated the process of proletarianisation. The farming models promoted were such a failure that they deserve a brief analysis.

Bantustan of Bophuthatswana

In the bantustan of Bophuthatswana, the relatively fertile soil to the south of the present town of Bethanie, which was not incorporated into the neighbouring irrigation scheme, had long been cultivated by members of the Bakwena ba Mogopa community using draught animals. In 1977, the bantustan's authorities decided to promote an agricultural development project. Candidates were selected based on

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'required skills'. In this case, thirty-three people were each awarded a plot of 100 ha of rain-fed land with good agronomic potential (Rémy & Clerc 2011). Some already possessed a tractor and tillage tools, acquired in the early 1960s (probably families that were already well off at the time, and close to the bantustan authorities). The unilateral, discriminatory nature of the model led to the eviction of families with smaller plots. Commercialisation could only be achieved through Agricor, a cooperative established at the time to market the produce of black farmers (Rémy & Clerc 2011). As will be seen in Chapter 9, the current model promoted in Bethanie looks identical. It is as if the project implemented at the time of the bantustans foreshadowed the design and implementation of the current model used today to promote emerging farmers.

Alluvial terraces of the Kat River (Eastern Cape)

In order to make Ciskei racially homogeneous, the government launched a 'consolidation' operation in 1980 which led to new population displacements: expropriation of white farmers residing within the boundaries of the future entity and expulsion of black families settled on 'black spots', now attributed to white people. Under this forced restructuring, part of the middle and high Kat River Valley – alluvial terraces, citrus plantations, etc. – were inserted into the bantustan of Ciskei. This process of transferring 'white' farms to black beneficiaries also foreshadows the land reform processes in place today (Chapter 6).

To do this, white farms in the north of the valley were purchased by the South African government and surrendered to Ciskei authorities, who entrusted their management, including the citrus groves, to the parastatal structure Ulimicor (also known as the Ciskei Agricultural Corporation) until the late 1980s. Ulimicor modernised most of the citrus farms, implementing microjet irrigation systems, purchasing new equipment (tractors and sprayers) and planting new orange orchards (Quinquet de Monjour & Busnel 2012). In the late 1980s, the government of Ciskei decided to privatise the former white citrus farms and install black farmers there. Twenty people were selected. Among the lucky winners were many agricultural technicians who worked for Ulimicor and relatives of members of the government of Ciskei, despite their lack of interest in agriculture. The alluvial terraces of the former white farms were then divided into economically 'viable' units of 17–32 ha each. They were rented out for five years, with an option to buy. Ulimicor would assist each farmer for five years, lending out equipment and providing advances for chemical inputs at the beginning of the crop year as well as technical support (Quinquet de Monjour & Busnel 2012).

Bantustan of Gazankulu

Projects implemented in the bantustan of Gazankulu were similar. In the area studied by Anjuère and Boche (2009), only a few villagers from Mandlakhazi and Nwadjaheni (those close to tribal authorities and government officials of Gazankulu)

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were allocated plots of 8–13 ha of 'arable' land. On the advice of the government's technical services, they set up mango plantations with 10–15 m between rows in order to cultivate maize, groundnuts, earth peas and squash during the rainy season. All the other families residing in these villages who had so far weathered the steamroller of 'separate development' were brutally decapitalised because of a lack of access to production means (land, water, capital and labour) and six consecutive years of drought. Lack of forage owing to drought and overgrazing, and the inability to sell animals before they wasted away completely, devastated herds and further impoverished inhabitants (Anjuère & Boche 2009; Chapter 4).

Emergence of sugar cane smallholdings in the black spots of KwaZulu

The development initiatives promoted in the sugar regions of KwaZulu were a little different. As noted, planting sugar cane was practically mandatory in the missions in the early 20th century. In the 1970s, sugar cane processors once again needed more sugar cane than white farmers could supply, in order to optimise their processing facilities whose capacity had grown.

The Financial Aid Fund (FAF) was set up in 1973 to 'help' farmers from the reserves by providing financial services.[11] Sugar companies served as intermediaries between the FAF and small-scale growers. The planter would have an account with the sugar company, which was credited with a loan from the FAF for planting cane. The sugar company that owned the Sezela plantation would prepare the land and plant with its own equipment and workforce. The raw product delivered for the first three seasons would be divided up: one part would go to reimburse the FAF loan and the other to the sugar company operations. During the first three years, the planter neither spent nor earned any money (Bièque & Kippeurt 2012).

In the years that followed, the sugar company continued to carry out all farming operations and to ensure farmers had enough funds to apply post-harvest fertilisers and herbicides by retaining a portion of the harvest upon delivery. The money available in this fund, calculated on the cost of sugar cane production, was used to purchase inputs and to pay the service provider, that is, the sugar company itself. The balance was given to the planter in March of the following year.

This system, under which smallholders had no control over the production process, again foreshadowed the situation of most black farmers today, be they heirs of these 1970s smallholdings or emerging farmers (see Chapter 7).

Cutting off access to the national agrofood system

Parallel to their gradual proletarianisation, rural Africans were entirely pushed out of agricultural and agrofood markets. As their productive autonomy dwindled, laws and regulations multiplied to ban the sale of their products on the market. In 1949, for example, a law was passed to limit the number of street vendors, mostly Indians, in the city of Durban. The law required sellers to have a licence, a storeroom for

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fruits and vegetables, and a vehicle deemed 'valid' by the licensing agent (cited by Bièque & Kippeurt 2012). In his law firm based in Johannesburg in the early 1950s, Nelson Mandela received each week old women who made and sold African beer to complement their meagre incomes, but who found themselves threatened with prison or fines (Mandela 1994).

Rural markets were closed in favour of large-scale retailers. Six supermarkets today have 93.8 per cent of retail market share (Louw et al. 2008). This process led to the establishment of a national food system following Western standards and consumption models. The system is based on a small number of central purchasing entities with centralised platforms, requiring white farmers to be organised into cooperatives to deliver large, standardised volumes. As a result, it is very difficult for a black farmer who is not integrated into these channels to sell his or her produce.

There is very little local trade left between producers and consumers living in the same region. In the region of Brits, for example, recipients of restitution programmes have managed to build medium-sized vegetable farms (10–20 ha) and sell spinach, tomatoes and sweet potatoes to intermediaries that directly supply the surrounding community (see Chapter 9). Around Hazyview, roadside hawkers are able to sell their products, as this form of marketing is no longer illegal (see Chapter 5).

Some animal products also still benefit from dynamic local markets, like goat meat, a staple among populations in the former homelands. In contrast, maize and maize flour, another staple in rural markets, seem totally controlled by the agrofood industry. It is indeed remarkable that, unlike in other rural areas in Africa, small maize farmers do not have a mill at home or in their village to process their production. They must sell all of their production and buy maize flour at the supermarket.

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Conclusion: An alarming state of disrepair

In areas of the country where African populations were grouped according to the segregation laws, labour productivity declined significantly from the days when farmers had animal traction equipment and much of the land was cultivated. The consolidation of white power and the implementation of 'separate development' policies – lack of access to land and water; forced decapitalisation through livestock 'destocking' campaigns; and no independent market access, whether to supply chain inputs, production means, commercialisation or processing channels – definitively destroyed the accumulation potential of African farms.

As a result, South African peasant agriculture is in an alarming state of disrepair. The contrast with vibrant peasant production systems elsewhere in Africa is salient. In many places, peasant agriculture continues to generate value addition, revenues (albeit modest), employment, social ties and sometimes quite remarkable landscapes. Take for example the *Faidherbia albida* plantations that dominate many parts of the Sahelo-Sudanian zone; the shea and locust bean parks in the more humid areas of

the Sudanian zone; the impressive terraces of the Mandara Mountains in northern Cameroon; the swamp rice fields extending towards the sea from the Casamance down to the coast of Guinea; the highlands of Burundi, Rwanda, Bamileke country or enset plantations in Ethiopia, to mention a few of the most spectacular examples. None of this can be observed in South Africa, where the rural landscapes of the former homelands are among the most depressing on the continent.

Moreover, the roughly 1 million agricultural jobs created by the 60 000 white farms during apartheid (Simbi & Aliber 2000) – a large number due to the low wages – pale in comparison to what could have been created by family farms benefiting from government support and good market channels. Underemployment in rural South Africa is higher than ever before and is one of the highest in the world.

Elsewhere in the world where land grabbing has occurred at the expense of the majority, we have seen the gradual establishment of a dual agricultural sector, with large mechanised factory farms on the one hand, and *minifundios* on the other. Yet the latter are often home to very intensive production processes in terms of labour, the only production means available, and contribute significantly to domestic market supply and even export crops. We can cite numerous examples worldwide, including in the former Soviet Union, where the plots of former *kolkhoz* workers and their descendants contribute more than ever to food production for the domestic market. In some countries, like Brazil, the dual nature of these production systems has been officially recognised with the implementation of public policies that acknowledge the highly productive nature of small and very small farms, and their multiple functions in terms of job creation and poverty alleviation. In South Africa, the agricultural sector has been fully and exclusively reserved for white people. In this sense, although conceptually necessary (as used in this book), it is sometimes difficult to consider South African agriculture as dualistic, as black populations have been completely stripped of production means and entirely proletarianised. This unique situation makes the revitalisation of small family farms extremely difficult and complex, yet absolutely indispensable, as will be seen.

Notes

1 A similar expansion of black agriculture in the colony of Natal is described by Maylam (1986).

2 In many districts, however, white farmers were slow to throw these occupants off their lands; the rent they paid in labour was valuable (Bundy 1979).

3 See reconstructions done by De Wet (1995) for the villages of Chatha and Rabula in the former Ciskei. See also Lasbenne (1998) and Saqalli (1998).

4 Around Hazyview and Bushbuckridge (Mpumalanga), black populations were first displaced by force in the late 19th century, not by white farmers but by President Paul Kruger, in order to create the first game reserve (Regourd 2012).

5 *Paysannat* is the name given by the Belgian colonial administration in Congo and Rwanda–Burundi to the centrally planned rural development schemes, which designed

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the development of plots alongside the road and the attribution of a set of parcels to each 'beneficiary' farmer with the obligation to respect a crop rotation system dictated by the agricultural extension services.

6 An article by Alvord (1949), director of the Department of Native Agriculture, Southern Rhodesia, provides 'scientific' legitimacy to this perspective.

7 In the Transkei, the 'government' introduced a tax on large and small livestock. In 1974, maize production reached 1.25 million bags, with 2.8 million bags imported (Bundy 1979: 229). Even during a good year, only 30 per cent of households could produce enough food to subsist (Bundy 1979).

8 A drop by one-third in maize yields, main food crop in the village of Chatha, studied in detail by De Wet (1995). Also see Lasbenne (1998) and Saqalli (1998) for the village of Twecu in the former Ciskei.

9 The construction of gravity-based furrow irrigation schemes and allocation of 1.0 to 1.5 ha plots to the selected families were part of the recommendations of the Tomlinson Commission.

10 Cases described by De Wet (1995) in the former Ciskei confirm these criteria.

11 Around 1970, the government asked residents from the Ifafa mission to bring back their property titles under the pretext that there were errors in the land register. In fact, the titles were never returned to the residents. It is now the Permission to Occupy system that governs land tenure.

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2 *Agrarian reform in South Africa: Objectives, evolutions and results at national level*

Ward Anseeuw, Frikkie Liebenberg and Johann Kirsten

The evolution of the South African agricultural sector during the 20th century was characterised by periods of structural change. Initial steps aiming at the spatial segregation of white and black farmers were followed by a period of government support to agriculture and growth in agricultural output up to the 1980s. This led to the development of a section of the farming sector, often referred to as the commercial sector and operated by white people on privately owned land, through the adoption of modern mechanised and biological technologies, resulting in consistent growth in output within a policy environment heavily favouring increased production by large-scale owner-operated farms using wage labour (Vink & Kirsten 2003). In contrast, African small-scale farmers were limited to subsistence activities, being confined to the communally managed former homeland areas, which make up 13 per cent of the country's agricultural land (Anseeuw 2006; Cousins 2000). The policy environment of racial discrimination and price distortions could not, however, be sustained and the pressures on agriculture began to mount during the 1980s, forming a prelude to the policy shifts that occurred in the wake of the democratic elections of 1994.

The objective of this chapter is to set the stage for the rest of the book by giving an overview of and points of reference in the evolution of South Africa's agricultural sector. The chapter takes a macroeconomic and policy-oriented approach, describing the broad structures and policies which shaped and presently transform the agricultural sector's configuration. The chapter also takes a partially historical perspective. This is crucial for the present debate regarding South Africa's agrarian question, given that the country's past and socio-economic and political legacy is so specific and substantial in shaping its present configuration, including its agricultural sector. However, rather than anchoring this chapter in the past,[1] it will focus on the present characteristics and transformations and how the latter have been moulded and are evolving.

The three most important contemporary features and evolutions of South African agriculture are the process of deregulation of the economy and of the agricultural sector, in particular since the end of the 1980s and early 1990s; the attempts to deracialise the sector and its spatial configuration over the last two decades; and its dualistic structure (commercial and subsistence sectors), which persists.

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Table 2.1 Main legislation shaping South Africa's agricultural sector since 1910

Native Labour Regulation Act, 1911
Bantu Labour Regulation Act, 1911
Land Settlement Act, 1912
Natives Land Act, 1913
Bantu Land Act, 1913
Black Land Act, 1913
Agricultural Credit Act, 1926
Sugar Prices Act, 1926
Land Settlement Relief Act, 1931
Mealie Control Act, 1931
Livestock and Meat Industries Act, 1934
Wheat Industry Control Act, 1935
Native Trust and Land Act, 1936
Bantu Trust and Land Act, 1936
Development Trust and Land Act, 1936
Marketing Act, 1937
Group Areas Act, 1950
Natives (Abolition of Passes and Co-ordination of Documents) Act, 1952
Bantu (Abolition of Passes and Co-ordination of Documents) Act, 1952
Blacks (Abolition of Passes and Co-ordination of Documents) Act, 1952
Native Labour (Settlement of Disputes) Act, 1953
Bantu Labour (Settlement of Disputes) Act, 1953
Bantu Labour Relations Regulation Act, 1953
Black Labour Relations Regulation Act, 1953
Natives Resettlement Act, 1954
Bantu Resettlement Act, 1954
Blacks Resettlement Act, 1954
Land Settlement Amendment Act, 1954
Water Act, 1956
Land Tenure Act, 1966
Group Areas Act, 1966
Marketing Act, 1968
Bantu Homelands Citizenship Act, 1970
Black States Citizenship Act, 1970
National States Citizenship Act, 1970
Subdivision of Agricultural Land Act, 1970
Bantu Homelands Constitution Act, 1971
Black States Constitution Act, 1971
National States Constitution Act, 1971
Self-governing Territories Constitution Act, 1971
Agricultural Produce Export Act, 1971
Co-operatives Act, 1981
Abolition of Racially Based Land Measures Act, 1991
Marketing Amendment Act, 1992
Agricultural Labour Act, 1993

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Land Reform: Provision of Land and Assistance Act, 1993
Restitution of Land Rights Act, 1994
Labour Relations Act, 1995
White Paper on Agriculture, 1995
Land Administration Act, 1995
Land Reform (Labour Tenants) Act, 1996
Marketing of Agricultural Products Act, 1996
Interim Protection of Informal Land Rights Act, 1996
Communal Property Associations Act, 1996
Basic Conditions of Employment Act, 1997
White Paper on South African Land Policy, 1997
Extension of Security of Tenure Act, 1997
Transformation of Certain Rural Areas Act, 1998
Local Government: Municipal Demarcation Act, 1998
Local Government: Municipal Structures Act, 1998
Skills Development Act, 1998
Employment Equity Act, 1998
Municipal Systems Act, 2000
Communal Land Rights Act, 2004
Department of Rural Development & Land Reform Strategic Plan, 2010–2013
Green Paper on Land Reform, 2011
Recapitalisation Policy, 2011
Draft Policy on the Expropriation Bill, 2011
A Policy Framework for Land Acquisition and Land Valuation in a Land Reform Context and for the Establishment of the Office of the Valuer-General, 2012
Black Authorities Act Repeal Bill, 2012
Restitution of Land Rights Amendment Bill, 2013
Land Tenure Security Policy for Commercial Farming Areas, 2013
Rural Development Framework Policy, 2013
Policy for the Recapitalisation and Development Programme of the Department of Rural Development and Land Reform, 2013
Agricultural Landholding Policy Framework, 2013
South Africa Expropriation Bill, 2013
Extension of Security of Tenure Amendment Bill, 2013
Property Valuation Act, 2013
Restitution of Land Rights Amendment Act, 2014

Source: Authors

South Africa's agricultural liberalisation, deregulation and the institutional restructuring of the public sector

While the first democratic elections held in 1994 represented political democratisation, they also had economic consequences: the compromises reached during the negotiations at the end of apartheid resulted in the political liberalisation being accompanied by economic liberalisation. This implied implementing economic policies advocating a reduction of the role of the state and redistribution through

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economic growth (Habib & Padayachee 1999). According to the World Bank (1994) and the ANC (1994), progress towards liberalising the South African and agricultural economies would enhance the efficiency of the economic system and ensure equality as far as markets and services were concerned.

Concretely, this meant cancelling the direct subsidies from which white farmers had benefited for several decades, suppressing every associated system with regard to agricultural marketing and price regulation, and changing the status of most institutions related to farm development, such as state cooperatives and financial services.

Until early 1998, the marketing of most agricultural products in South Africa was regulated by statute, through twenty-two marketing schemes introduced from 1931 and especially from the time of the 1937 Marketing Act with the establishment of marketing boards (Vink & Kirsten 2003) (see Table 2.1). The Marketing of Agricultural Products Act (No. 47 of 1996) changed the way in which agricultural marketing policy was managed, resulting in the abolishment of the marketing boards, and opened up the sector to the regulatory forces of national and world markets. The Act set up the National Agricultural Marketing Council with the main mandate to dismantle the existing commodity control boards, and subsequently to manage and monitor limited state intervention in the sector (Vink & Kirsten 2003). As such, the powers given to the different boards to set prices were ended when these boards were abolished.

Directly related to the transformation of South Africa's marketing institutions and policies were the country's trade policy reforms. Accordingly, quantitative restrictions, a multitude and a wide dispersion of tariff lines, import and export permits related to price controls, and other regulations were replaced by tariffs after South Africa became a signatory to the Marrakesh Agreement in 1994. At present, many – if not all – tariffs are below the reference rates of this agreement, an illustration of the country's liberalisation process (Vink & Kirsten 2003).

Alongside the abolishment of the marketing boards in the framework of South Africa's liberalisation process, a broad-based institutional restructuring of the agricultural public sector was initiated. Besides the reorientation of the public sector to fit the new policy directions related to the new agricultural marketing policy, two main reasons explain these restructurings. Firstly, some institutions, such as the Development Bank of Southern Africa, the Land Bank, the Agricultural Research Council (ARC) and the development corporations in the former homelands, were considered too closely aligned with apartheid policies and focused on separate development. They were subjected to restructuring programmes in order to realign them to a new mandate in support of the development priorities of the new government and of inclusive development. These restructurings were complex, with some, such as the ARC, having difficulties reorienting their activities to smallholders and emerging farmers. Secondly, agricultural public sector institutions were subjected to a process of 'provincialisation', in line with the adoption of the Interim Constitution. Such transformation modified the relationships between the national

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and provincial departments of agriculture, as well as the activities and constituencies of farmer lobby groups (Vink & Kirsten 2003).

These changes in policy had a major influence on the spending patterns of government on both service delivery and support to farmers and sector organisations. The focus here is primarily on the expenditure of the departments of agriculture and other public institutions, such as the ARC, the Land Bank, organised agriculture, the control boards and the Agricultural Credit Board, which also played a major role. As shown in Figure 2.1, government expenditure on agriculture has drastically decreased since 1987, which marks the shift in policy development to the phase of deregulation. This decrease is particularly significant in relative terms: from heights of 16.9% in 1933 and 14.1% in 1948 (during the height of the establishment of 'white farm-dom') to 5.07% in 1981 (South Africa being affected by financial crises related to the political situation and embargoes),[2] the share of government spending on agriculture has declined to reach an average of 1.4% of total government expenditure since 1994 (Liebenberg 2013).[3]

This decrease is mainly related to the quasi-annulment of agricultural subsidies, as well as a major reduction in expenditure on agricultural infrastructure and the like. The decline in absolute terms – although not as sharp overall as it was in the past given that it was counterbalanced by an increase in expenditure as part of South Africa's engagement in the framework of land reform and the racial transformation of the sector over the last decade (Figure 2.2 and later in this chapter) – remains important considering that the sector presently includes all farms, black and white, large and small.

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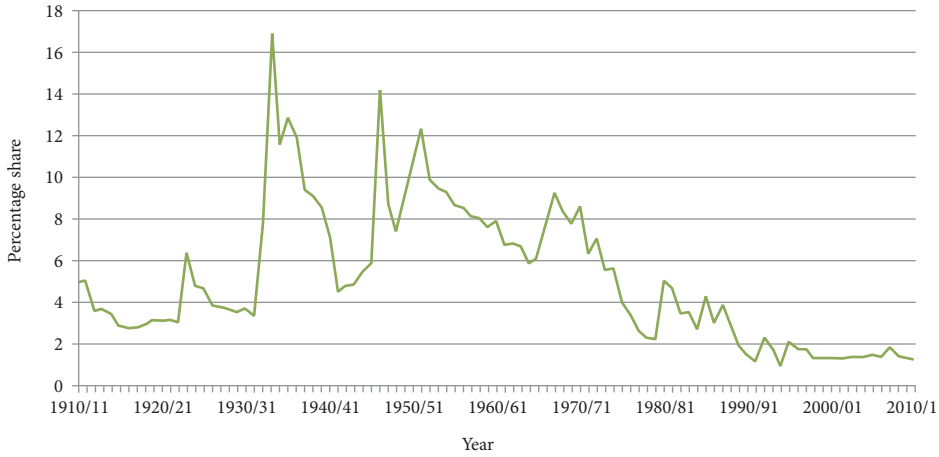
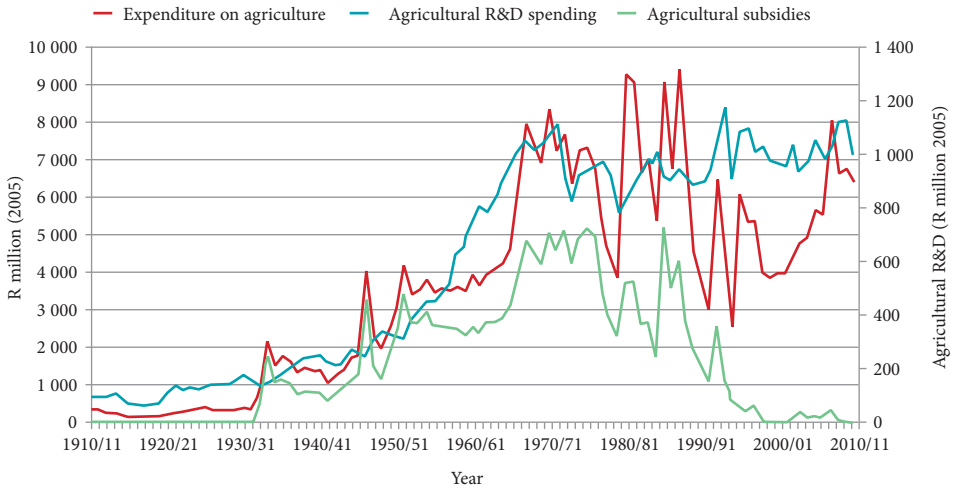
Figure 2.1 Evolution of the share of government spending on agriculture, 1910–2010



Source: Liebenberg (2013)

Figure 2.2 Evolution of public expenditure on agriculture according to category, 1910–2010



Note: R&D = research and development
Source: Liebenberg (2013)

Deracialisation of the agricultural sector and South Africa's spatial configuration

The compromise on economic liberalisation implied that agrarian and land reforms should be realised within the framework of a free market, excluding every form of uncompensated expropriation. As such, land reform is implemented according to the willing-buyer/willing-seller principle (DoA 1995). This principle, officially transcribed in the new Constitution under the property clause, takes into account the rights of present owners. Officially, from 1994 onwards, access to land, to agriculture and to commercial agriculture in particular is possible for all South Africans, but at market price (Anseeuw 2006). Adopting a market-led reform made it possible, according to the then Ministry of Agriculture and Land Affairs, to underscore the necessity of maintaining national productive capacities – in order to ensure economic stability – without neglecting the greater equity imperative. Such an approach is also the least costly, the easiest to implement and, above all, represents a condition required to benefit from the support of international organisations (the World Bank in particular) and to maintain investors' confidence.

Yet, taking into account the history of land appropriation, the level of protection and subsidies from which white farmers benefited, the poverty level of the majority of the black population, and the possibilities for manoeuvring within the present liberal economic framework, state intervention has been provided. Thus, although liberalisation is limiting state intervention so as not to create distortions in the smooth operation of the market, legal mechanisms of redistribution and restoration prevail. They are embedded into three reforms: land, agrarian and spatial reforms.

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South Africa's land reform programmes

Three main programmes form the country's land reform framework: land restitution, land tenure reform, and land redistribution (DLA 1997).

Land restitution

This programme, resulting from the Restitution of Land Rights Act (No. 22 of 1994), enables people or communities dispossessed of their land after 19 June 1913 (the implementation date of the first Natives Land Act) to claim the restitution of their land rights (or the equivalent, i.e., other land or financial compensation). As at 31 December 1998, the initial deadline for claim submission, 68 878 individual or group demands had been submitted. On 25 February 2014, however, the Restitution of Land Rights Amendment Act, which extends the date for lodging claims for restitution until 31 December 2018, was passed by the National Assembly. This new Act also gives an opportunity to claim land to those who were dispossessed of land before 1913, such as the Khoisan communities, including those dispossessed through betterment planning schemes and not allowed to lodge their claims by the Commission on Restitution of Land Rights.

Land tenure reform

This is the most complex programme of the land reform process. Its objective is to define and institutionalise every existing mode of land tenure, making it possible to confer well-defined and equal rights to various landowners and occupants. While this programme concerns communal land primarily, it also focuses on other potential conflict situations, such as those concerning farm workers who have worked for their own account for several years on properties owned by others, mainly white people. Another objective of this programme is to manage state-owned land – 25 509 004 hectares (ha), of which 13 332 577 ha are covered by the former reserves and bantustans, the rest being mainly rented out or informally occupied.

Land redistribution

The aim of this programme is to assist previously disadvantaged populations who do not fall under either of the two previous programmes to purchase available land at market price, through a subsidy. Land redistribution can take on different forms: individual or group resettlement (merging subsidies), and a commonage principle (communal access to land, i.e., an entire community uses available subsidies to purchase land, which will then be added to existing communal lands occupied since 1913 or 1936).

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Two phases of land reform

Two major phases appear, characterised by a divergent application of these three programmes, in particular the redistribution programme (Anseeuw 2006; Hall 2010).

First phase (1994–1999): Land policies focusing on the establishment of subsistence farmers and food security

The first phase of land reform policies, implemented by the minister of Agriculture and Land Affairs, Derek Hanekom, had as an objective the development of subsistence farming. This orientation accentuated the importance of the impact of land reform and of small-scale agricultural production development on the social and economic development in rural areas. In this way, the government gave favour to food security and means of existence in a country where the inequality of resource distribution is extreme and where the links between black populations and commercially oriented farming had been historically eradicated. It is for this reason that this first phase was implemented by the Department of Land Affairs only, and concerned farmland as well as residential or urban land.

Having adopted these ideas, between 1994 and 1999 the Department of Land Affairs allocated Settlement/Land Acquisition Grants (SLAGs) in an amount of R15 000 per household (DLA 1997).[4] These grants were mainly allocated within the framework of the land redistribution programme with the aim of facilitating the purchase of land, but they could also be used for agricultural investments (on communal land or on land acquired through the restitution programme) or even for housing projects (external to the farming sector).

The SLAGs benefited mainly the rural populations for several reasons. First of all, rural environments are more marginalised and are characterised by higher poverty rates than urban ones (Stats SA 2000). Furthermore, as detailed by the Department of Land Affairs (DLA 1997), it is easier to obtain results by focusing on those who show interest in or who are already engaged in agriculture. Nevertheless, focusing on the poorest implies acting with a group of the population that generally has neither the means of investment nor the capacity to revitalise rural livelihoods.

Second phase (1999–2004): Land policy aiming at creating small-scale commercial farmers

In 1999, after the second democratic elections and Thoko Didiza's assumption of head of the Ministry of Agriculture and Land Affairs, the approach aimed at promoting subsistence farming was questioned. The development of an emergent commercial farming sector then became a priority. Land reform no longer aimed at transferring land to black households to promote self-sufficiency, but had the objective of creating a structured small-scale commercial farming sector, improving farm production, revitalising the rural environment and creating employment

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opportunities. This strategy coincided better with the more liberal orientations of the government.

The Land Redistribution for Agricultural Development (LRAD) sub-programme became the main programme of the Ministry of Agriculture and Land Affairs (2000). It did not replace the previous programmes implemented in 1994, which continue to exist. LRAD replaced SLAG only for the projects concerning agricultural development. SLAG has since 1999 been limited to residential projects. The LRAD programme delivered grants to the previously disadvantaged with the aim of facilitating access to private farmland or enhancing (infrastructure) development on lands which had already been acquired privately. Even where commonage projects were concerned, LRAD focused mainly on transferring agricultural land to individuals or to limited groups with the intention of developing commercially oriented farming activities (Ministry of Agriculture and Land Affairs 2000).

To encourage the development of farming activities and to deter those not genuinely interested in farming, the Ministry insisted that the beneficiaries invest funds into the project. For beneficiary contributions ranging from R5 000 to R400 000 per person, the LRAD subsidies varied from R20 000 to R100 000, on a proportionally reducing scale. Furthermore, the approval of the subsidies was not only based on an equity principle, but also on the viability of the project. Therefore, beyond the necessity for viable business plans, better cooperation between the Department of Land Affairs and the Department of Agriculture was predicted, aiming at better accomplishment of agricultural development.

This new orientation implied a predisposition to focus on a category of potential farmers having financial and farming knowledge and means. Certain associations (NLC 2000) assert that this reorientation of objectives benefits only a small elite. Others note, however, that these measures promoting commercialisation of agriculture will be driving forces for agricultural and rural revitalisation (Nieuwoudt & Groenewald 2003; Van Rooyen 1997).

Shifting from land to agrarian reform and the development of emerging black farmers

Together with this new orientation, policies have been focusing on agricultural development and on the establishment of an emerging farmers' subsector in South Africa's agricultural sector. Whereas initially the focus was on land reform, a shift has occurred towards an agrarian change discourse. As Cousins (2013a) notes: 'Since 2009 most policy documents on land reform have stressed the need for "agrarian transformation", defined as "a rapid and fundamental change in the relations (systems and patterns of ownership and control) of land, livestock, cropping and community", and the creation of "vibrant, equitable and sustainable rural communities"'. These policies do not replace, but rather complement, the above-mentioned land reform programmes.

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Only one additional land policy has been adopted to complement the above one, and it has redefined land redistribution in the country. The Pro-Active Land Acquisition Strategy (PLAS) was adopted as policy in 2006 and is currently the only available mechanism for redistribution. Within this framework, the state purchases farms and allocates them to applicants on the basis of three- to five-year leasehold agreements – effectively moving away from the redistribution of ownership to a nationalisation of land and a redistribution of use rights.

As such, since 2000, a set of policies and instruments have aimed at overcoming the lack of capital affecting the newly established land reform beneficiaries: the Comprehensive Agricultural Support Programme, Micro-Agricultural Financial Institutions of South Africa and the Recapitalisation and Development Programme (see Box 2.1). Funds for investment in farm infrastructure and operations have been made available to PLAS beneficiaries for 'recapitalisation and development'. Several initiatives and government plans have also been developed and implemented to better organise planning and coordination of support service delivery: the Land and Agrarian Reform Project, although never implemented, and the Comprehensive Rural Development Programme. Finally, three new policy documents were announced in August 2013: the State Leasehold and Disposal Policy, the Recapitalisation and Development Programme Policy and the Agricultural Landholding Policy Framework (see Box 2.1). The latter have not been implemented yet, but are along the same lines as the previous ones.

Box 2.1 Land and agrarian reform policies since 2000

CASP: the Comprehensive Agricultural Support Programme, established in 2004, makes provision for agricultural support to the targeted beneficiaries of the land and agrarian reform programmes. In practice, it mainly focuses on making funding available for the development of farm infrastructure.

Mafisa: the Micro-Agricultural Financial Institutions of South Africa, established in 2006, provides access to finance for farmers, especially beneficiaries of the land restitution, redistribution and land tenure reform programmes.

SIS: the Settlement and Implementation Support Strategy for Land and Agrarian Reform, developed in 2007, calls for integration, alignment and delegation of planning and implementation to local levels. It acknowledges that land reform is a complex and multifaceted process, needing better planning and collaboration between different state departments.

AgriBEE: a black economic empowerment (BEE) framework for agriculture was released in 2004, and a sector charter was gazetted in 2008, to increase the involvement of black businesses in agriculture throughout the commodity chain. As with other sectors of the economy, the aim is to encourage greater black ownership and control of existing and new agricultural businesses, and to ensure that black people are involved in executive and senior management positions in agricultural businesses (NDA 2006).

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LARP: the Land and Agrarian Reform Project (2008) highlighted the need to accelerate the pace of service delivery by proposing an accelerated LARP, to be managed as a joint and aligned project by the different departments. Without a budget of its own, this initiative is to better integrate government agencies and to promote both commercial agriculture and agribusinesses.

CRDP: the Comprehensive Rural Development Programme (2009) was developed to deepen support to land reform beneficiaries by enabling broader rural development through improved access to basic services, enterprise development and village industrialisation.

RADP, also called RECAP 2010: the Recapitalisation and Development Programme focuses on financial recapitalisation, mainly through infrastructure development and operational funding, of properties in distress and newly acquired ones through the land reform redistribution, restitution and other programmes since 1994. RADP requires that land reform beneficiaries enter into strategic partnerships or mentoring relationships with commercial farmers or agribusiness companies.

New policies (Cousins 2013a):

SLDP: the State Land Leasehold and Disposal Policy applies to farms acquired through PLAS and defines, according to four categories of 'farmer', beneficiaries, rental and purchase options.

RDPP: the Recapitalisation and Development Policy Programme, equivalent to RADP/RECAP for PLAS farms, replaces previous forms of funding for restitution projects. It will also provide financial support to black farm owners who are not land reform beneficiaries, and to producers in communal areas.

ALPF: the Agricultural Landholding Policy Framework proposes that government designates maximum and minimum landholding sizes in every district. The rationale is to attain higher levels of efficiency of land use and optimise 'total factor productivity'.

Note: Additional information regarding these different policies can be found on South Africa's government websites.

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The rationale behind these additional policies and initiatives is that many land reform projects have been unsuccessful because of inadequate and inappropriate post-settlement support, and are in 'distress' and thus in need of further injections of funds (see later in this chapter). Alongside the need for integration of land and agricultural services, it has indeed become evident that a comprehensive approach that addresses the entire spectrum of social and physical needs of farm and rural dwellers is required in the planning and implementation of land reform, agrarian and rural projects. Land alone will not solve the situation and enhance the livelihoods of the rural poor, as it will not allow for an emerging black agricultural sector to mushroom. The approach is to ensure that the farms and enterprises are profitable and sustainable across the value chain.

This approach – emphasising profitability and the emergence of a productive black farming sector rather than broad-based distribution – is also emphasised in the country's AgriBEE policy and inclusive business model. Firstly, as noted, through

AgriBEE, as with other sectors of the economy, the aim is to encourage greater black ownership and control of existing and new agricultural businesses, and to ensure that black people are involved in executive and senior management positions in agricultural businesses (through ownership; management control; employment equity; skills development; preferential procurement; enterprise development; and rural development, poverty alleviation and corporate social investment) (NDA 2006). Secondly, the last couple of years have seen South African agricultural authorities encouraging relationships between commercial entities/agribusinesses and smallholder and emerging (black) farmers. First promoted in the Limpopo province in the framework of its Strategic Partnerships Programme (Lahiff et al. 2012), it is presently being generalised through equity-sharing schemes (Western Cape), community–public–private partnerships, joint ventures and contract farming models. The latter are part and parcel of the latest funding programmes, as the RADP/RECAP, and probably the future RDPP too, require that land reform beneficiaries enter into strategic partnerships or mentoring relationships with commercial farmers or agribusiness companies.

A preliminary attempt towards spatial reform

To support land and agrarian reforms in the country's endeavour for territorial restructuring, complementary spatial planning policies and measures were developed, aiming at shaping a 'new South African territorial order' (Guyot 2006: 165).

These spatial policies are structured, on the one hand, around the administrative and geographic transformation of the territory. The Local Government: Municipal Structures Act (1998) and the Local Government: Municipal Systems Act (2000) support in a decentralised manner the redefinition of the provinces and of the regional and local demarcations in order for them to no longer represent the spatial structuring of the apartheid era (Figure 2.3). This is coupled to a reform of place names, the former ones being permanent reminders of the previous order (from the names of streets to those of the provinces) (Guyot 2006).

On the other hand, these measures and policies also aim at promoting territorial development. They are structured in Integrated Development Plans (IDPs – promoting common development objectives at municipal level) and in other spatial initiatives focusing on local socio-economic development (such as Spatial Development Initiatives, or SDIs). From 2006 onwards, these plans have been integrated in a broader area-based planning strategy: 'The area-based planning (ABP) is a tool for the sustainable delivery and integration of land and agrarian reform programmes within the strategic priorities of municipalities (as expressed in IDPs), national programmes and provincial imperatives' (DRDLR & BTC 2013: 5). Here again, it is strongly linked to land reform as the ABP is designed to speed up the land reform programme while at the same time providing for enhanced economic development. As such, ABP represents a land sector plan that will be the key vehicle

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for enhanced integrated planning and a platform for better intergovernmental relations and public participation. The latter are supposed to be implemented in a decentralised way, between local authorities and stakeholders (Dellier 2009).

These spatially anchored affirmative action instruments aim at a spatial configuration allowing for reconciliation between the economic interests of better-off areas and development within the most marginalised, often black, regions. The objective is also, for all the sectors and regions, to promote equitable and sustainable development in an effective and coordinated way. As for land reform, these measures are not interventionist and are not directly engaged in economic affairs, but have been implemented in order to develop an environment facilitating investment and growth.

South Africa's persisting dualistic agricultural structure

Great expectations reside in the above-described restructurings and reforms, from both a political and a socio-economic point of view. Although South Africa, unlike

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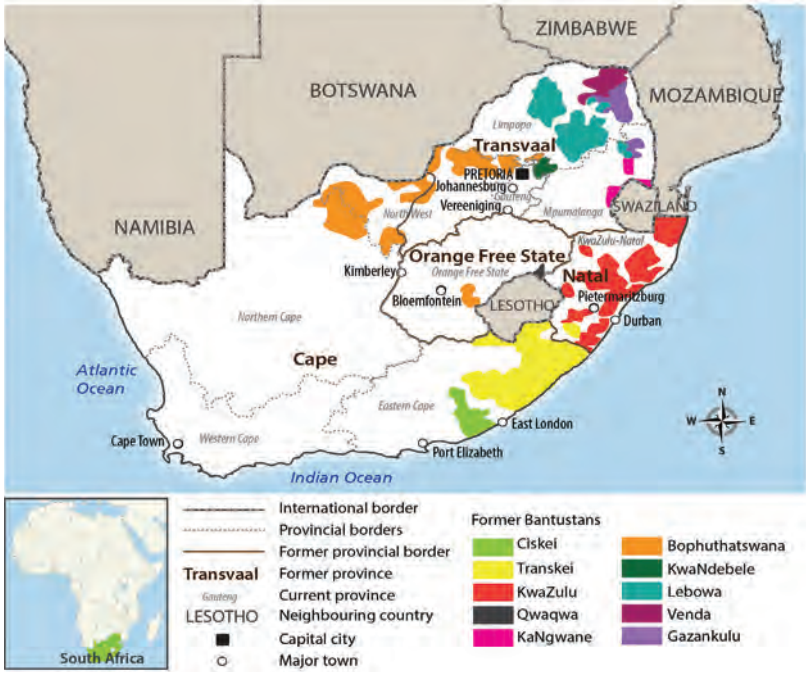
Figure 2.3 Old and new spatial organisation of South Africa



Note: Even though bantustans do not formally exist any more (and is subsequently referred to as 'former bantustans'), certain of their characteristics (communal land tenure, tribal institutions, poverty, etc.) result in the latter remaining specific entities within the country.
Source: Adapted from Gervais-Lambony (2003)

most African countries, is not an agriculturally based country any more, and even considering the country's past depeasantisation policies for the black population, the sector, and particularly its relations to land, remains of utmost importance. As Cousins (2012) notes, 'the legacy of this history is immense bitterness among black South Africans and a powerful desire to have the land restored to its rightful owners'. As such, the successful resolution of land and agrarian questions is critically important for stability, democracy and development. A second motivation for these reforms is the belief that the transfer of farmland, together with agricultural and rural development programmes, can make a significant contribution to poverty reduction and job creation. Indeed, the sector's significance, at least in the government's discourse, is largely attributable to its expected potential to create jobs. This is a key focus of the New Growth Path, a government plan to create 5 million new jobs by 2020, of which 1 million are to be in agriculture.

However, the most recent observations show that transformation is still far away – at least from a macro perspective. Not only have land and agrarian reforms not accomplished their expectations, the 'white commercial' sector seems to be more and more concentrated.

Disappointing results of the country's land and agrarian reforms

Even if different perspectives and objectives have to be taken into account (Cousins & Scoones 2010), a general consensus seems to be growing which emphasises the stagnation of the different land and agrarian reforms.

First of all, delivery has been slow. Data on land reform are hard to come by. In 2011, seventeen years after the first democratic elections, only 5.43 per cent of the 87 million ha of agricultural lands had been transferred to previously disadvantaged populations in the framework of the country's restitution and redistribution programmes (DRDLR 2011). Over 90 per cent of land claims have been resolved, most of them urban claims, but the majority of large rural claims are still unresolved. Between 2009 and 2012, in the framework of PLAS aiming at redistributing 5 million ha, a total of 882 238 ha was redistributed to 10 447 beneficiaries. The target of redistributing/restituting 30 per cent of the land in five years, during the Mandela term of presidency, was postponed to 2015 and has again not been reached. Tenure reform has been ineffective: evictions have continued and more people have lost access to rural land (Nkuzi Development Association 2005; O'Keeffe 2005). In addition, tenure legislation regarding communal land rights remains non-existent; an initial piece, the Communal Land Rights Act, has been declared unconstitutional. The new targets and modalities of such a reform remain undefined. Cousins (2013a) notes:

> Critics have chided government for the slow pace of land reform, and warned of the possibility of the land question becoming politically explosive, as in Zimbabwe. Land activists see the 'willing seller, willing

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buyer' approach as expensive and cumbersome but also unjust, given that land was forcibly appropriated by the racial minority in the past.

Beyond the quantitative criteria (limited number of hectares transferred), numerous restitution and redistribution projects are not productive, some have even collapsed completely, drastically reducing their impact for poverty alleviation and job creation. Several evaluations have emphasised that this concerns up to 85 per cent of the cases (Anseeuw & Mathebula 2008; Kirsten & Machethe 2005), although results seem to improve in the framework of RADP (Machethe & Anseeuw, forthcoming) and even some modest improvements in beneficiaries' livelihoods can be identified (Aliber & Cousins 2013). Five problems are recurrent (Anseeuw & Mathebula 2008; CDE 2008):

- the non-feasibility and non-viability of the land reform projects (too many beneficiaries on projects that are too small, very isolated and devoid of elementary rural and agricultural infrastructure);
- unadapted institutional structures (legal entities – grouping large number of beneficiaries – and non-recognised land tenure rights);
- a lack of collective action and institutional isolation (many beneficiaries find themselves isolated, lacking post-settlement support);
- support measures that are insufficient and not adapted (still referring to a single 'large-scale commercial farming entity');
- heavy, non-effective and non-transparent administration (in certain regions, beneficiaries wait for more than six years to receive the title deeds to their land and thus to actually access and invest on their lands).

Regarding agricultural development, two elements are decisive: the weakness of state support and of support services based on commercial agriculture. A large number of public activities have been abandoned (such as parastatal cooperatives and agricultural development agencies) or have not been developed/maintained (irrigation schemes, public extension services). The lack thereof makes smallholder and emerging farmers dependent on market-based, commercial services. These services are costly; not developed in, and distant from, the still marginalised farming regions; often ineffective; and not adapted to the needs of 'renewed' agricultural activities and structures, which are small, pluri-active structures, often engaging a large number of people. Critics have pointed to the almost complete failure of government to provide adequate post-settlement support, and to badly designed business plans. Also, water reform has not been integrated into land reform (Cousins 2013b). The weakness of these support structures results in the stagnation of small and emerging farming, often constrained by social functions such as food security and savings (Anseeuw 2006).

Overall, as emphasised by the Centre for Development and Enterprise (CDE 2008), a major constraint on land reform and related development is weak coordination and capacity within the relevant government departments. There are insufficient staff members, many are not adequately trained and staff turnover is high. The

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government agricultural extension service is very weak. Many agricultural officials see household-based production systems as inefficient and 'backwards', preferring to favour large-scale farming methods, and are not motivated to support land and agrarian reform for the poor. This goes hand in hand with the small budget for land reform and agricultural/rural development (around 1 per cent of the national budget for land reform only; about 2 per cent for land- and agricultural-related expenditures), which has also been heavily criticised. Government, however, has been reluctant to devote more funds to it because of the failure of many projects and lack of evidence that land reform is making any impact on rural poverty (Cousins 2013a), and because South Africa is mainly an urban economy.

Similar observations concern South Africa's spatial transformation. Despite several spatial policies, the socio-economic transformation of the country's spatial organisation is limited due to the lack of financial and human means and resources, the failure of land and agricultural reform policies, the small room for manoeuvre of the state and weak approaches which do not take into consideration the collective and identitarian spatial complexities (Gervais-Lambony 2003). This reflects seemingly intractable structural challenges associated with practical intergovernmental relations and the absence of a clear framework for joint planning – as shown through the evaluations of the ABP-related programmes (DRDLR & BTC 2013). Even though assuring new legitimacies through superficial reforms (taxonomy, co-management), the former bantustans' characteristics (communal land tenure, tribal institutions, poverty) persist, resulting in their remaining specific, non-integrated entities within the country (see Figure 2.3). As Guyot (2006) emphasises, the new demarcations can also be analysed in terms of electoral strategies (benefiting mainly the ANC) or of the establishment of a new black bourgeoisie within better-off areas and neighbourhoods. But this demarcation certainly leads to reinforcing those territories which 'won' in the past and constricting those areas that remain constrained and characterised by a lack of resources and which are thus dependent on the central state (Guyot 2006). The spatial non-insertion of the former bantustans – as illustrated by the Ciskei (Lhopitallier & Caron 1999) and the Transkei (Dellier 2009) in the Eastern Cape, one of the country's poorest provinces – is illustrative of the latter.

As such, the country's present reforms do not contribute significantly to social, economic and spatial transformation. Some even state that they are creating poverty and upholding past configurations (McIntosh & Vaughan 2000; Sender & Johnston 2004). This has led critics to incriminate government for the slow pace of transformation and the lack of positive results in terms of land reform, agricultural development and spatial restructuring. They have warned of the possibility of the land and agrarian questions 'becoming politically explosive, as in Zimbabwe'. Activists question the liberal principles and see the willing-seller/willing-buyer approach as unjust, given that land was forcibly appropriated and that black agriculture was destroyed by the racial minority in the past.

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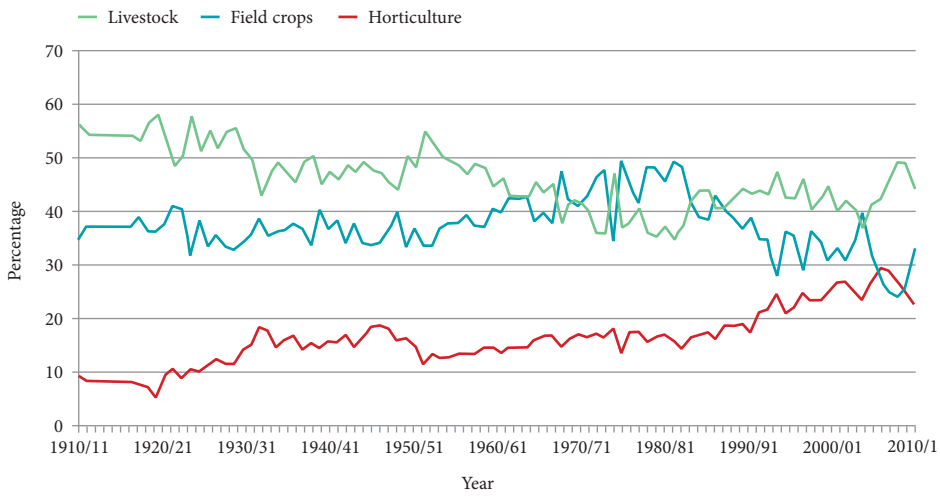
A stagnating sector becoming more and more concentrated

Considering the focus on land and agriculture overall, redistribution, the integration of smallholder farming into the mainstream agricultural economy and the concomitant poverty alleviation and employment creation, one might expect a sector that becomes more prominent, diversified, focusing on more basic foodstuffs, with an increasing number of farmers and decreasing average farm sizes. Paradoxically, and certainly in opposition to the overall discourse, opposing trends can be observed.

Firstly, agriculture has been stagnating and decreasing respectively in absolute and relative terms. Agriculture as a percentage of gross domestic product has decreased over the past four decades, currently contributing around 2.4 per cent. From R10 million in 1910 to R37 billion in 1992, the removal of sanctions against South Africa after 1992 resulted in agricultural output bounding to reach R52 billion in 2002. However, within the broader context of liberalisation and decentralisation (international market pressures, the changing domestic agricultural policies and economy-wide influences), together with adverse weather conditions and the negative impact land reform has had on overall investor confidence, a period of agricultural stagnation has set in. As such, the sector's contribution to the economy is presently R41 billion. There are variations per sector: the decrease is mainly felt in the subsector of the more basic field crops, with a shift observed towards more livestock and niche horticultural products, related to an agricultural sector that is more internationally oriented (Figure 2.4).

Figure 2.4 Evolution of agriculture output structures, 1910–2010



Source: Liebenberg (2013)

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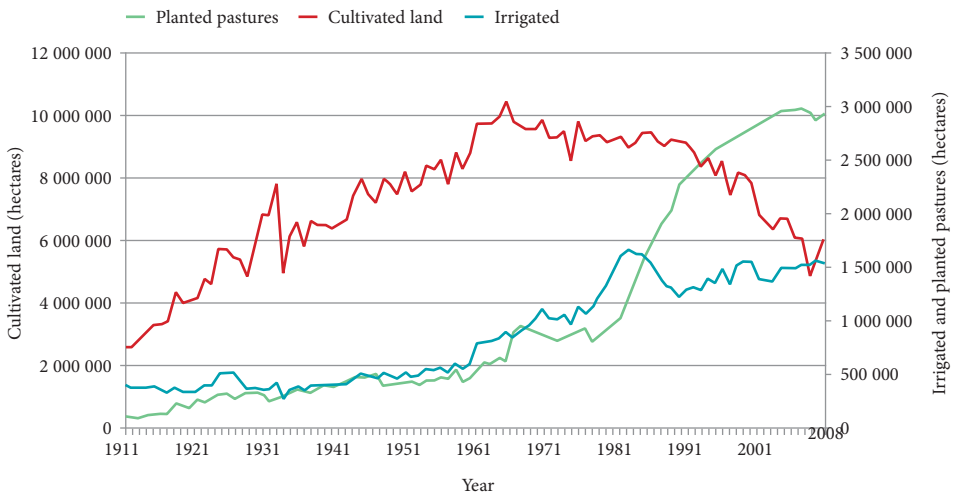
Secondly, the change in agricultural output goes along with a change in overall agricultural land use. Although the overall agricultural land use remains stable at about 80 million hectares, different land-use trends per crop/production type can be noticed. Related to the above-mentioned trends, important decreases in cultivated lands can be observed, irrigated lands remain stable and planted pastures are increasing (Figure 2.5). Most worrying regarding the declining trends is that they are observable as much among the presently still mainly white-owned farms as among those in the former reserve lands (Figure 2.6).

More importantly, however, is the significant decrease in the number of farms – representing a huge paradox regarding what one might expect of a country engaged in a redistribution process (Figure 2.7). In 1994, South Africa had about 60 000 (what were called 'white commercial') farmers. Today, only 40 000 farm units remain, illustrating the significant concentration trends ongoing in the country.

Caution has to be observed, however, as different methodologies have been used over time. Since 1997, only farms with a yearly turnover of over R300 000 have been taken into consideration. This means that farms under this threshold are not considered, resulting in very limited knowledge and representation of the effective structuration of the sector. Nevertheless, within this subsection of farms with a turnover of over R300 000, a significant concentration pattern is observable. Accordingly, average farm sizes in this subsection have increased from 1 450 ha in 1997 to just under 2 500 ha presently.

Figure 2.5 Evolution of areas cultivated, irrigated and pastures in South Africa, 1911–2008



Source: Liebenberg (2013)

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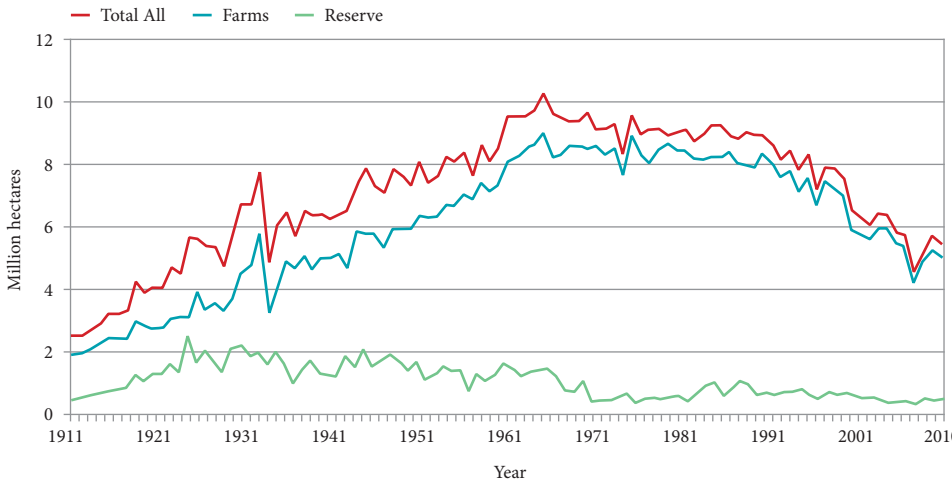
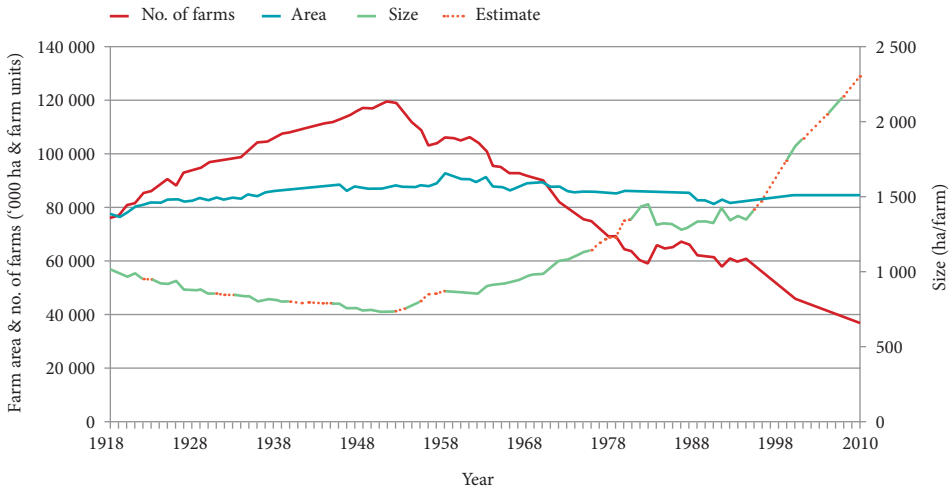
Figure 2.6 Evolution of areas of crop land according to race, 1910–2010



Source: Liebenberg (2013)

Thirdly, the labour issue has also been a contentious one, related to quantity and quality issues. The provision of basic labour conditions and the extension of security of land rights have led to significant changes. Until the 1980s, farm workers in South Africa had little legal protection, weak rights to organise and poor

Figure 2.7 Evolution of farming units and farming area in South Africa, 1918–2010



Source: Liebenberg (2013)

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basic conditions of employment. The Agricultural Labour Act (No. 147 of 1993) addressed this shortcoming to some extent, but it was only after 1994 that farm workers' rights were brought in line with those of workers from other sectors of the economy.[5] In addition, in July 2003 minimum wages were set according to a sectoral determination: depending on location, they ranged from between R872 in rural areas to R950 in peri-urban areas. In March 2013, after several months of violent strikes, mainly in the Western Cape, they were increased to R105/day (representing an increase of more than 50 per cent compared to the previous rate). Lastly, in order to protect labour tenants, the Extension of Security of Tenure Act (No. 62 of 1997), aimed at giving people who lived on someone else's land, with permission from the owner, a secure legal right to continue living on and using that land.

However, this improvement of labour conditions, at least in legal terms, was accompanied by a significant loss of jobs. In order to limit the number of workers, farm owners have mechanised their activities and turned to less labour-intensive projects, such as game farms. From a quantitative labour and employment perspective, farming remains important to the economy with 638 000 people being formally employed (Stats SA 2012). This figure has significantly decreased: from a high of 2.4 million workers in the 1970s, it decreased to 1.139 million in 1993. This represents a decrease of almost 50 per cent of the people employed in agriculture in the last two decades. In addition, from a qualitative labour perspective, besides the loss of overall employment, seasonal and casual labour increased significantly, as did the foreignisation of labour. According to Liebenberg (2013), seasonal and casual labour represented 53.4 per cent in 2010, the first time in history that seasonal labour represented a larger share of the hired agricultural labour force.

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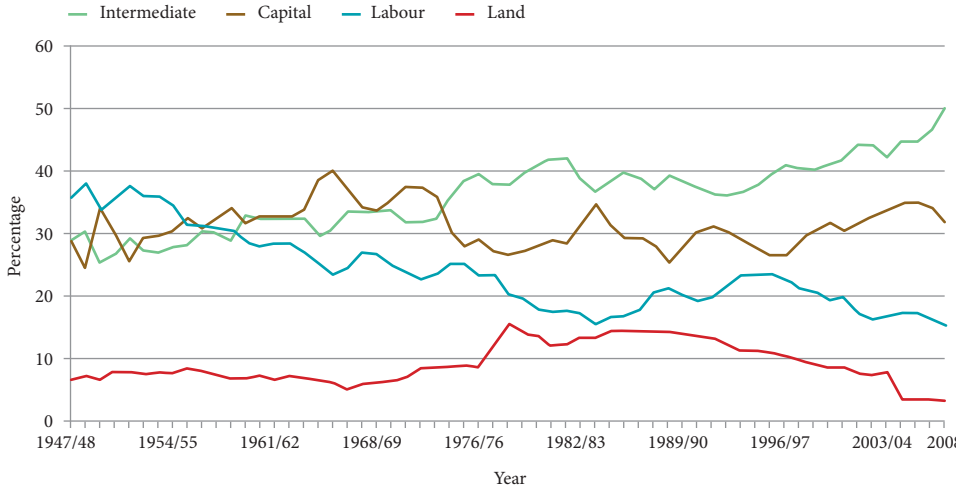
Figure 2.8 Evolution of input costs on South African farms, 1947–2008



Source: Liebenberg (2013)

Again paradoxically, post-apartheid labour conditions decreased in farms' overall input cost structures. As shown in Figure 2.8, labour costs decreased, on average, from 23 per cent in 1994 to 16 per cent in 2008.

Conclusion: Towards effective agrarian reform in South Africa?

Should land and agrarian reform support the emergence of large- and medium-scale black commercial farmers (which will limit the number of people that benefit), or promote small-scale agriculture (thus broadening the spread of benefits)? This has been a highly controversial issue that government has not been able to decide upon, as illustrated by the different orientations of the country's agrarian reform programmes. The Nelson Mandela era focused on smallholders, the Thabo Mbeki administration tended to favour emergent commercial farmers, but the 2009 ANC manifesto emphasises small-scale production within a programme of agrarian reform that will be implemented in communal areas, as well as on land reform farms.

In any case, transformation – at least at a macro level, as presented in this chapter – has been minimal. On the one hand, the expected objectives of the different reforms have not been reached. The reform instruments and policies, mainly focusing on land and to a lesser degree on the country's agrarian and spatial transformation, have marginally contributed to the eradication of apartheid's legacy. Twenty years after the first democratic elections of 1994, few lands have been acquired by the black majority in the traditionally white areas, tenure remains insecure and has not been consolidated in the former bantustans and reserves and the spatial organisation of the country remains biased and unbalanced. On the other hand, the commercial, traditionally white farming sector has consolidated, becoming more and more globally integrated, and characterised by increased concentration and accentuated polarisation of farm models in South Africa. Beyond the perpetuation of segregation, it leads to the reinforcement of agrarian and territorial dualisms.

The limits of these transformations are inherent in the motivations and means of which they are constituted. Beyond the official objectives of the reforms, economic stabilisation and political reconciliation strategies remain determining factors, and are part and parcel of the political stakes of the ANC, its elites and South Africa's protagonists embedded within the global liberal economic context (Vircoulon 2004). This situation is illustrative of the contradiction of the economic policies that the government has implemented since 1994, mixing economic liberalism and a willingness to redistribute. The murder of more than 2 500 white farmers since 1994 and the ANC Youth League's appeal to nationalise South Africa's land surely reflect popular frustration and the limits of the present development model (Alden & Anseeuw 2009).

There is, however, a need to better understand what is going on in the field and to assess effective transformations (or non-transformations) at a disaggregated level. Indeed, owing to the specific character of each programme and project, along with

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the transformation-specific effect that reform policies can have, it is necessary to carry out assessments in situ to ascertain the transformative nature of the country's transition. The remaining chapters of this book endeavour to do this.

Notes

1 Many others have done so with brilliance. See, among others, Bundy (1979); Mbeki (1984); Plaatje (1987); Beinart (1994); Van Onselen (1996).

2 Spurred by the depression, the subsequent drought, and aided by the changing fortunes of the gold-mining sector, agriculture expenditure gained from the Carnegie Report, which provided the stimulus for government to increase its levels of investment in agriculture and rural infrastructure, starting in 1933.

3 Drought relief payment and subsidies paid to assist farmers in marginal crop production areas to switch to livestock farming increased the share of public spending.

4 The SLAG grant of R15 000 (which became R16 000 in 1999) can be accessed only once per household. A household using the grant for the purchase of land will not benefit from it any further for the construction or improvement of its accommodation or for other farm investments.

5 Four major laws – the Labour Relations Act of 1995, the Basic Conditions of Employment Act of 1997, the Skills Development Act of 1998 and the Employment Equity Act of 1998 – now also apply to the agricultural sector.

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3 *Analysing productive processes and performances of agriculture at local scale in South Africa: How to proceed?*

Sandrine Fréguin-Gresh and Hubert Cochet

Studying farming in South Africa, its transformations as well as its performances, can give rise to methodological challenges. Indeed, the vastness of the national territory and the range of bioclimatic conditions have led to the development of a variety of agricultural situations, making it difficult to 'cover' the current diversity by conducting research with reasonable human and financial resources. Furthermore, the combination of a social and political history marked by almost one century of racial discrimination and the planned destruction of black agriculture (Chapter 1), and economic changes at the beginning of the 1990s (state withdrawal, economic liberalisation, restructuring of downstream and upstream segments of value chains [see Chapter 13], and increasing integration into international markets), has shaped the significant contrasts between the different forms of production which characterise the agricultural sector. That is why most research on South African agriculture focuses on only one or several aspects of these changes or on certain forms of agricultural production, without grasping the bigger picture. This raises a number of questions: How should one proceed to remove these methodological constraints? What approaches and conceptual frameworks should be used? How might one analyse productive processes in agriculture, taking into account the social, political, economic and technical dimensions that have influenced, and continue to underlie, the sector in South Africa? How should one assess the technical and economic performance of the different forms of agricultural production in order to draw a comparative analysis? How should one resituate these productive processes in the wider dynamics of the agricultural sector, as well as people's rural livelihood?

This chapter presents a conceptual framework and methodological approach known as agrarian diagnosis in an attempt to answer these questions. The approach was developed at the French School of Comparative Agriculture in the Institut National Agronomique de Paris-Grignon (AgroParisTech), around the key concept of the agrarian system (Cochet 2012). Applied in many regions worldwide for several decades, this approach makes it possible to analyse productive processes in agriculture and assess performances of different forms of agricultural production at the local level (Barral et al. 2012; Cochet & Devienne 2006). Based on the results of the implementation of various agrarian diagnoses between 2009 and 2012 in several regions of South Africa (Cochet 2013), the application of the approach, presented

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in this chapter, details original analyses of agricultural situations in the country (see Chapters 4 to 9).

The chapter starts by introducing concepts that are central to the approach and recalling their origin. It then describes the methodology of agrarian diagnosis, pointing out elements that came up when applying the methodology to the South African context.

Agrarian diagnosis: Origin of the approach and key concepts

For a long time research has endeavoured to analyse agriculture around the world (Sourisseau et al. 2012). Farm diversity, which can be explained through the range of ecological, social, economic, political, historical and institutional situations in each agrarian society, has been conceptualised at several levels (plants, animals, plots, herds, farm, landscape, region and value chain), through different analytical prisms (technical functioning in agronomy or zootechnics, economic performances) and to various ends (response to sanitary or ecological issues, formulation of policy recommendations for agricultural development, modification of intervention methods in rural areas).

In the Anglo-Saxon academic world, research on farming has split into two categories (Cochet 2011, 2012). On the one hand, researchers adhering to the school of Farming Systems Research (FSR) began developing work in the 1970s focused on the study of technical processes in terms of farming systems, particularly on the scale of the farm unit. These works, generally conducted by agronomists or affiliates following various schools of 'technical' agricultural sciences, did not provide much scope for dynamics in the long run or for taking into account issues around access to resources, distribution of wealth among societies and its consequences, social relations, differentiation mechanisms, and conditions for integrating farmers into society as a whole. On the other hand, during the same period, researchers who were less concerned with explaining the systemic nature of production processes focused more on socio-historical approaches to the 'agrarian question', grouped together as 'Peasant Studies' or 'Agrarian Studies' (Bernstein & Bures 2001; Scott & Bhatt 2001). Conducted by researchers in the fields of (agrarian) political economy, sociology or history, these works emphasised aspects which had barely been tackled, if at all, within the framework of the FSR: social and historical dynamics; the economic and political contexts into which farmers' practices fitted; social relations linking farmers to society; the internal differentiation within rural societies; and even the role of market integration, as far as increased inequalities are concerned (Cochet 2012).[1]

In France in the 1970s and 1980s, researchers affiliated to the school of systemic modelisation of the functioning of farms, who were aiming to establish agricultural holdings' typologies (Cochet & Devienne 2006; Sourisseau et al. 2012), proposed analysing agrarian transformations differently. Focused on the specific concept of the agrarian system, agro-geographers and agro-economists adhering to the school

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of comparative agriculture (Cochet 2011; Dufumier 2002; Mazoyer & Roudard 1997) endeavoured to reconcile the two categories of Anglo-Saxon academic approaches and to favour their cross-fertilisation: a systemic approach to document productive processes in agriculture on the one hand and, on the other, to analyse their long-term insertion into the social dimension of rural societies (Cochet 2012). These works relied in particular on the central concept of the agrarian system.

The agrarian system: A complex and multidimensional concept

Although the concept of the agrarian system was already being used by many French geographers at the beginning of the 20th century (Cochet 2012), it was mainly French agronomists and agro-economists who, from the 1970s onwards, progressively took over the concept by reworking its definition. Particularly, Marcel Mazoyer defined the concept as 'a way of exploiting an agro-ecosystem that is historically defined and sustainable, adapted to the bioclimatic conditions of a given area, and responding to the social needs and conditions of the moment' (Mazoyer 1987: 11). It is a holistic concept that takes into account historical developments and the geographic traces of different forms of agriculture, and enables one to characterise major changes affecting production processes. According to Mazoyer (1987), an agrarian system encompasses the agro-ecosystem and its transformations over time; production tools, labour force and resulting artificialisation (i.e., anthropogenic impacts on the land); the social division of labour among farmers, artisans and industrial actors, and the subsequent agricultural surplus and its redistribution; exchange and trade relationships, ownership relationships and power relationships; and, finally, the ensemble of ideas and institutions that ensures social reproduction.

As such, this concept has taken on a complex definition resulting from the need to combine different analytical scales (plot, herd and farm, but also region and value chain) and, at the same time, to express all those relations linking the technical and social spheres, which must also take their dynamics into account. In this light, the agrarian system cannot be only considered as a technical system of practices of uses of natural resources, nor can it be reduced to the sole distribution structures of farmland. Rather, it envisages the technical changes and, at the same time, the modifications intervening in social relationships, not only at the local level but also at the national or even international level.

Cropping, livestock and production systems: Concepts leading to unavoidable embedding of analytical scales

In order to account for the complexity of the agrarian system, it is useful to break it down into subsystems. The first subsystem corresponds to the basic agricultural production unit and refers to the agricultural holding. Indeed, the agricultural holding constitutes the basic stitch of the 'rural network', that is, the

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basic organisation level of the productive processes where social and economic logics are embedded; where value chains become intermingled; where solidarities, contradictions and conflicts are formed (in particular relating to property rights); and where differentiation mechanisms are carried out. Often focused on family farms, as they are the main form of agricultural production found in many regions of the world, agricultural holdings can also take on other forms, such as corporate farms or agricultural enterprises.

The concept of 'production system' makes it possible to analyse production structures, practices and productive processes at the scale of the farm. Many authors look into this concept or its Anglo-Saxon equivalent (farming system) with a view to defining it (Brossier 1987; Pillot 1987). What appears as essential in this concept is that it sets out to study the combination of resources giving rise to a productive process: natural capital (location of farmland in the various areas of the ecosystem, which are exposed to specific bioclimatic conditions), human capital (importance, nature and education level of the workforce), physical capital (buildings, machinery, equipment, plantations and livestock herds, among others), financial capital (credit, investment capacity) and social capital (socio-professional networks).

However, rather than being applied on an individual basis for a given agricultural holding, the concept makes it possible to analyse a set of farms, in particular those which have the same kind of capital endowment, since they evolved into comparable socio-economic conditions and combine similar (crops and/or livestock) productions. As such, the concept of 'production system' describes a group of farms which, without being identical, present common features (Cochet & Devienne 2006), thereby leading to a modelisation into a conceptual representation that facilitates understanding of the origin, technical and economic functioning, and perspectives of evolution within the agrarian system.

The production system can in turn be divided into other subsystems, such as cropping systems and livestock systems, which are interlinked. The notion of a cropping system allows for the defining of a succession and/or an association of crops, as well as all the techniques applied to them according to a specific layout. The agronomic logic of the cropping system, closely linked to bioclimatic and socio-economic conditions (in particular the conditions of accessing resources), can be analysed systematically at the plot level. For example, the combined cultivation of maize, beans and butternut on the same plot at the same time can be considered a full-fledged cropping system if the same combination is repeated every year on the same plot. A succession of maize and then wheat (two production cycles on the same plot per year), which is allowed with pivoting irrigation during the dry season, for instance, will also constitute a cropping system. What happens at the level of the plot, what grows on it, the conditions under which cultivation takes place, the way in which cultivation is carried out, as well as the history of cropping on the plot, all make up a cropping system. At a comparable level of analysis, a livestock system is defined at the level of the herd or a portion thereof, and corresponds to

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'a set of elements in dynamic interaction, organised by man with a view to developing resources through domestic animals, so as to obtain varied products (milk, meat, leather, hides, work, or manure), or with a view to meeting other production objectives' (Landais 1992: 83).

Except for the rather rare farms relying on only one cropping or livestock system, it is indeed the combination of different cropping and livestock systems that, once more, forms a production system at the level of the farm. Moreover, understanding logics of cropping and livestock systems often leads to analysing the production system at different levels, interrelating cropping systems at plot level and livestock systems at herd level (in terms of, for example, tool exchange, complementarity in the calendars of production, transfer of fertility).

The notions of livelihood or activity system: Are they complementary or contradictory to the production system?

In many situations, family strategies go beyond productive processes in agriculture and are only understandable in the light of wider livelihood strategies. The logics underlying production systems cannot be understood without referring to 'a meta-system called activity system, which constitutes the real domain of coherence of farmers' practices and choices' (Paul et al. 1994). Some authors (Rieutort 2004; Sourisseau et al. 2012) highlight the fact that the concept of the agrarian system takes rural diversification into account insufficiently or in a difficult manner, for example, the development of off-farm (and often non-agricultural) activities, which can in some cases exceed (in terms of contribution to income and labour) the agricultural activity (see, for example, the literature review on the subject in developing countries carried out by Losch et al. 2012). Furthermore, given that the agrarian system is 'rooted' in a territory, it is difficult to include structural elements of contemporary rural societies such as the multi-situation of rural families in relation to the spatial mobility of family members engaging in off-farm activities (Ancey & Fréguin-Gresh 2014; Fréguin-Gresh et al., forthcoming). Finally, the concept does not make it possible to analyse conflicts/power plays around accessing and controlling resources by actors who are not engaged in agricultural activities, but who entertain urbanisation or nature conservation objectives, for example, which are also structural characteristics of the new ruralities.

These thoughts are akin to those of Paul et al. (1994) who, on finding that it was difficult for approaches focused on agriculture to account for family logics and strategies which are increasingly affected by the development of non-farm activities, chose to reason in terms of activity systems. The activity system is then part of a portfolio of activities. More recent works have endeavoured to adapt this approach by advocating a more integrated vision, and by taking more account of the non-market dimensions of the activity systems (Gaillard & Sourisseau 2009) in the tradition of thoughts on 'livelihood'-based approaches (Chambers & Conway 1991).

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However, it is necessary to distinguish different kinds of pluri-activity: those that de facto concern the semi-proletarianisation of farmers or their generalised precariousness (survival or coping strategies), from those that lead to an increase in wealth and to the realisation of productive investments (Dufumier 2006), or the constitution/conservation of a heritage with a view to retirement or transmission to younger generations. In the first case, the development of pluri-activity is linked to the inadequacy of farm income, and the idea is to complement it with other sources so as to make ends meet. In the second case, pluri-activity is 'structural' (Losch et al. 2012) and the agricultural production system is only an element. However, even though it is structural, pluri-activity could not challenge the existence of a farm that, despite generating only a limited income, would not be in danger of disappearing.

Everything concerning the activity system or livelihoods which might help to explain the why and the how of the productive processes in agriculture (particularly its maintenance, when the conditions for its intrinsic profitability are no longer satisfied), ought to be examined very carefully. It is necessary to take into account these other activities in the study of the agrarian system, as well as to understand the links that exist between production systems and off-farm activities, whether or not these are situated near the farm (Cochet 2011). Appointing family labour to these different activities (depending on their duration and on the season, and in different places) can indeed be carried out in relation to the schedule of farm activities, and to the cost of opportunity allocated to specific days for working on the farm, in as much as external income opportunities can drive the farmer to modify his or her timetable accordingly (Ancey & Fréguin-Gresh 2014). This is where the concept of the activity system or that of the recently developed multi-sited family system (Fréguin-Gresh et al., forthcoming) takes its meaning from, as a combination of activities generating income, social security, social relationships and heritage.

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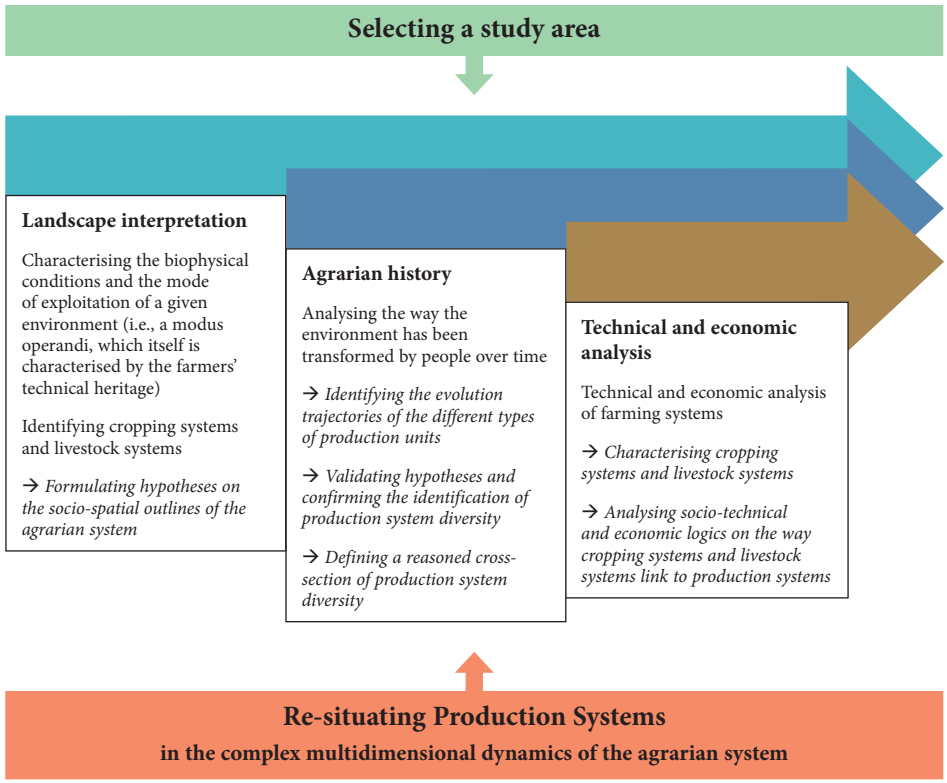
The agrarian diagnosis explained in light of its application in South Africa

The agrarian diagnosis should be viewed as a reiterated procedure that can be broken down into several activities. Such activities do not correspond to separable steps of the work but, rather, are part of a constant back and forth analysis between concepts and fieldwork. The results obtained at the end of each activity sustain one another and make it possible to cover the different dimensions and complexity of the concept of the agrarian system. These activities are outlined in Figure 3.1.

Selecting a study area

This step of the work concerns defining and delimiting a study area of limited size (a 'small-scale agricultural region') which is adapted to the application of the agrarian diagnosis, making it possible to formulate hypotheses on the socio-spatial dimensions of the agrarian system.[2] What must we understand by 'small-scale

Figure 3.1 The agrarian diagnosis sequence



Source: Authors

agricultural region'? First, the study area should cover a minimum spatial dimension that makes it possible to perceive the agrarian system as a whole. In other words, to 'cover the diversity' of production systems (even if it covers a much vaster spatial territory), it should embrace the relations between agricultural practices and the ecosystem, establishing one (or several) modus operandi or modes of exploitation of the environment, differentiation mechanisms within that system, and social relationships and rules relating to access and uses of natural resources, which should be consistent with the mode of exploitation of the environment. Understanding productive processes in agriculture at the small region level leads to in-depth analysis of the mechanisms at work (i.e., a combination of the characterisation of biophysical conditions and the farming practices, cropping systems and livestock systems which can be observed in the landscape, and signs of their past existence, among others).

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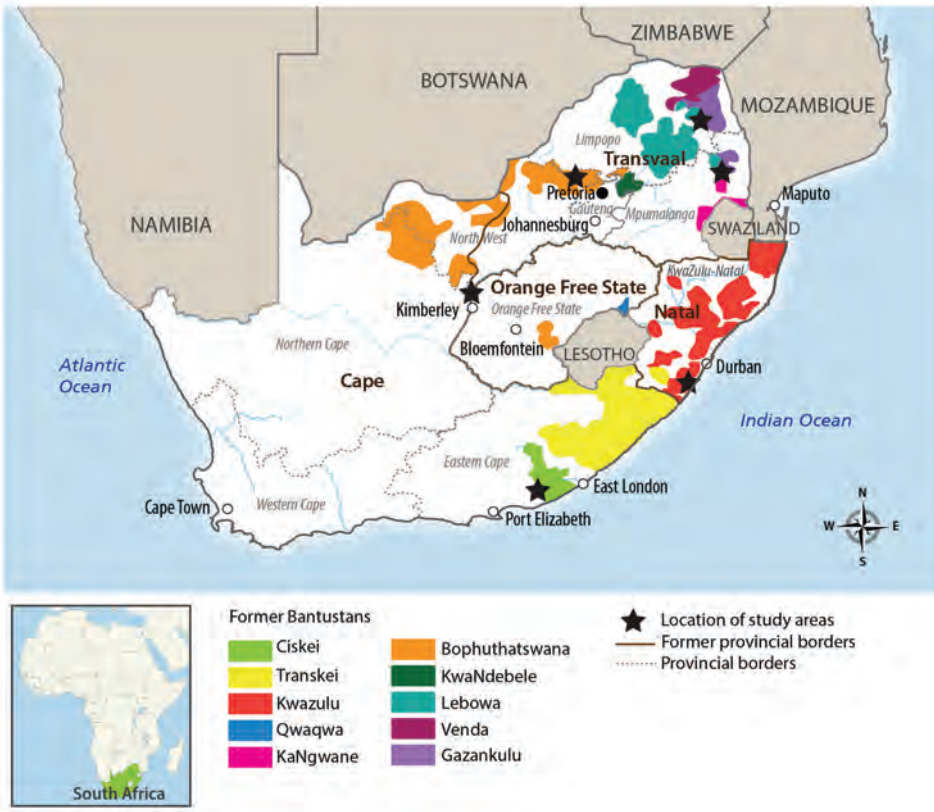
Studying historical dynamics and reconstructing production systems' trajectories

The validation of hypotheses which are formulated when interpreting the landscape and identifying the diversity of production systems – as a result of the agrarian history and characteristics of the biophysical conditions of the study area – makes it possible to establish a sampling of farms covering the diversity of the production systems identified.

Analysing the production systems from a technical and economic perspective

This analysis makes it possible to situate production systems in the multidimensional dynamic of the agrarian system, and its socio-economic and institutional sphere in particular (e.g. organisation and division of labour between the primary, secondary and tertiary sectors; insertion of farms into value chains and access to markets; the

Figure 3.2 Location of areas selected to conduct agrarian diagnoses



Source: South Africa: Overcoming Apartheid, Building Democracy website

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social logics of farm operation and decision-making; exchange relations and balance of power, particularly as regards accessing and recognising property rights).

Selecting study areas

The application of the framework in South Africa can be illustrated with six agrarian diagnoses realised between 2009 and 2012. The selected areas (see Figure 3.2) correspond to interface territories between former white-owned areas and former homelands where past development policies marked, and are still strongly influencing, agricultural dynamics. Selecting these areas can be put into the perspective of a common central problematics that would lead to an understanding of agriculture in South Africa, its evolution, performances and perspectives: the restructuring of agriculture led by post-apartheid transformations, in particular land and water management reforms, in the context of liberalisation and agrofood markets' restructuring. Even if each study area has a specific context (biophysical and socio-historical), as well as crop and livestock production systems adapted to or resulting from this context, local problematics is a good illustration of the general problematics (see Table 3.1).

Table 3.1 Positioning of study areas in relation to the problematics

Study area	Biophysical conditions		Agrarian reform	Water management reform	Agrofood market restructuring
Middle section of the catchment area of the Nwanedzi River (Limpopo) (Chapter 4)	Subtropical at medium altitude (450–1 000 m)	Soils formed on granite and Archean gneiss, from argillaceous to sandy	++	+ (indirect) Great Letaba Water Users Association	Citrus and mango value chain oriented mainly towards exportation, liberalised, affected by the land reform and by the development of vertical integration by agribusiness-associating black producers
Agricultural region of Hazyview (Mpumalanga) (Chapter 5)	Subtropical at medium altitude (500–1 000 m)	Soils formed on dolerite (deep, slightly acidic, well drained and rich in organic matter and minerals), soils formed on colluvium (argillaceous, rich in organic matter) and soils formed on granite (sandy, shallow, acidic)	+++	+++ White Waters Irrigation Board (Da Gama Dam); Sabie River Irrigation Board; area irrigated from Langspruit; irrigated perimeter of New Forest	Tropical fruit and macadamia nut value chains oriented mainly towards exportation, liberalised and affected by the development of vertical integration by agribusiness-associating black producers

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Study area	Biophysical conditions		Agrarian reform	Water management reform	Agrofood market restructuring
Kat River Valley (Eastern Cape) (Chapter 6)	Subtropical at medium altitude (450–650 m)	Soils formed on rock composed of sandstone and marl (not very thick or fertile), soils formed on alluvial deposits (alluvial terraces)	+	Perimeter irrigated on the alluvial terraces, no water user association	Citrus value chain oriented mainly towards exportation, liberalised, little affected by the land reform and by the development of vertical integration by agribusiness-associating black producers
Agricultural region of Sezela (KwaZulu-Natal) (Chapter 7)	Humid subtropical at low altitude (0–650 m)	Soils formed on granite (argilo-sandy, stony), soils formed on tillite (impermeable argillaceous sand to loam-sandy sand or subject to erosion), soils argillaceous-vertic derived from sandstone	+++	No irrigation or water user association	Cane sugar value chain mainly liberalised, affected by the land reform and by the development of vertical integration by agribusiness-associating black producers
Riet River Valley (Northern Cape/Free State) (Chapter 8)	Semi-arid subtropical at altitude (1 100–1 800 m)	Argillaceous-loamy soils developed on alluvium, sandy soils developed on deposits of Kalahari sand, sandy soils, not very deep, on limestone rock	++	+++ Orange Riet Water User Association (Vanderkloof Dam)	Grain and livestock value chains affected by the privatisation of the GWK (Griekwaland-Wes Korporatief), former 'white' development agency and strategic partnerships, including land reform beneficiaries
Crocodile River Valley (North West) (Chapter 9)	Subtropical at altitude (1 000–1 500 m)	Soils formed on gabbro and norite, (melanic vertic clay, black, swelling) and soils formed on granite, sandy and shallow	+++	+++ Hartbeespoort Dam Water Users Association (Hartbeespoort Dam)	Grain, oleaginous, cattle and vegetable value chains affected by the privatisation of the MGK (Magaliesberg Graan Koöperasie), the former 'white' development agency, strategic partnerships and vertical integration by agribusiness with land reform beneficiaries

Note: + symbol refers to the level of implementation of the specific reform.
Source: Authors, according to the regional studies (Chapters 4–9)

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Characteristics of the study areas and their local problematics

The agricultural region of the middle section of the catchment area of the Nwanedzi River in Limpopo province (Chapter 4) is situated close to the town of Tzaneen, near the dam at the beginning of the catchment area of the Groot Letaba River, a tributary of the Olifants River, one of the country's most important rivers. The region straddles the former homeland of Gazankulu and a former white area. It has a subtropical climate at medium altitude and is characterised by variable agronomic-quality soils. Agriculture is characterised by food crops and cattle breeding (in the former homeland), as well as tropical fruit plantations (mangoes and avocado, in particular). A large part of the region is subject to land claims and certain farms have been redistributed; other programmes associated with the national affirmative action policy in agriculture are also at work in the region. Most industries, including the new industries linked to the application of the agrarian reform (industrial chicken), have been strongly reorganised after the liberalisation, and programmes have been linked to the application of the national affirmative action policy in agriculture.

The agricultural region of Hazyview in Mpumalanga (Chapter 5) is situated between the former homeland of KaNgwane and a former white area around the town of Hazyview. The region is wedged between the escarpment of the Drakensberg and the country's largest nature reserve, the Kruger National Park. It has a subtropical climate at medium altitude with a definite dry and cool season. The region is characterised by soils with potentially good agronomic quality and installations in irrigated perimeters (in the former white area). Agriculture is organised around vegetable cropping and cattle breeding (in the former homeland) or the production of tropical fruit and nuts (avocado pears, mangoes, citrus fruit, litchis and macadamia), industries which have been liberalised and reorganised since the 1990s. Since the implementation of the water management reform, rights have been allocated to black people and part of the former homeland has been incorporated into an irrigated perimeter. Most of the lands of the former white area are being claimed by black people and one property has already been returned through an agrarian reform programme.

The downstream section of the Kat River Valley in the Eastern Cape (Chapter 6) is situated between the western extremity of the former homeland of Ciskei and a former white area around the town of Fort Beaufort. The climate is subtropical at medium altitude with a definite dry and cool season. Generally, the soils have a mediocre agronomic quality, except for those on the alluvial terraces of the Kat River. Different agricultural productions are set up according to their location in the valley: vegetable or food crops in the upper section (in the former homeland), and cattle breeding, goat keeping and sheep farming, as well as citrus fruit plantations, on the terraces of the former white area. Although only few lands in the former white area have been claimed in the region, tensions are high as far as resources are concerned, particularly at the level of the alluvial terraces, where certain farms have been redistributed and are under a mentorship programme. The latter involves citrus

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export agribusinesses, which represent their only way to access the industry which has been strongly reorganised since its liberalisation.

The agricultural region of Sezela in KwaZulu-Natal (Chapter 7) is situated 80 km from one of the country's most important cities, Durban. It includes the two former missions of Ifafa and Mtwalume (in the black reserves), and a former white-owned area around the small town of Sezela and its sugar refinery. The climate is humid, subtropical at low altitude, with soils characterised by a variable agronomic potential. Agriculture is organised around the sugar cane and eucalyptus plantations (depending on the altitude) in the former white-owned area, and around small sugar cane plots and staple food crops, as well as cattle rearing and goat keeping, in the former mission areas. Several land reform programmes have been implemented. Former missions have been returned to black trusts, and lands acquired by the state through the LRAD programme and the PLAS have been redistributed to set up new black planters. Land transactions outside the official framework to benefit black people have also been taking place and have been carried out by the local sugar company, which anticipated the claims.

The upper section of the Riet River Valley, a tributary of the Orange River, straddles the Free State and Northern Cape provinces (Chapter 8), and is not far from the city of Kimberley, well known for its diamond-mining and -processing operations, one of the most important in South Africa. Soils in the irrigated perimeter around the township of Jacobsdal are not very developed and cannot be cultivated without irrigation, owing to the semi-arid climate. Agriculture is organised around the production of forage (alfalfa), pecan trees, vines and temperate cereal crops, as well as cattle, buffalo and antelope rearing, and sheep keeping. This region, unlike the others, does not include former homeland areas. However, it is currently affected by the water management reform and the widening of the irrigated perimeter to include new black users within the framework of land reform programmes (SLAG, LRAD and PLAS). The presence of a former 'white' agricultural development agency, reorganised and privatised, has had a strong impact on value chains and conditions for accessing markets.

The upstream section of the Crocodile River Valley, downstream from the Hartbeespoort Dam, in the North West province (Chapter 9) is made up of a formerly white corridor – the irrigated valley – in the middle of the formerly scattered homeland of Bophuthatswana, north of Brits, a town situated about 60 km from the country's political capital, Pretoria. The region has a subtropical mountain climate with a definite dry and cool season. It is characterised by variable to excellent agronomic-quality soils, depending on the location. Residents produce mainly vegetable crops and forage at the level of the irrigated perimeter (in the former white-owned area), as well as sunflowers and cattle rearing (in the former homeland). Almost all the lands of the irrigated perimeter, previously reserved for white people, are claimed by the Bakwena Ba Mogopa community, and some have been returned. The reform of the legislation on water management has been

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implemented and has given some black people access to water. Moreover, various programmes linked to the application of the national affirmative action policy in the domain of agriculture (AgriBEE) are being applied, and have compelled the former agricultural development agency, which was reorganised and privatised, to intervene in the form of strategic partnership programmes for the beneficiaries of these reforms. This has contributed to the transformation of the value chains and conditions for accessing markets.

Defining and delimiting the study area

Defining and delimiting a study area is central to the agrarian diagnosis. As such, the definition and delimitation of the area to be studied has major consequences on the diagnosis: omitting a cultivated land, a grazing area, a forest or an exploited lagoon or, on the contrary, including areas to which the micro-society being studied does not have rights poses a problem when harmonising the different and interdependent components of the system.

In South Africa, defining and delimiting a 'small' farming agricultural area with a view to studying it and applying an agrarian diagnosis can be a difficult task, for several reasons. On the one hand, the first people who exploited the environment were hunter-gatherers and nomadic herders who used vast pastures with poor vegetation. As such, there was no initial clearing per se, nor any separation of one communal territory from another, with the possibility that different population groups could have met and shared territories without usage or property rights being properly defined. In fact, it is this difficulty which is at the centre of certain land conflicts in South Africa; conflicts that require evidence of what would be the limits or outlines of the agricultural territories of certain populations, who claim lands within the framework of land reform programmes.

On the other hand, the distinctive history of apartheid and its indelible traces in the landscapes of South Africa make the selection of a small agricultural area all the more delicate. In many regions of the world, it often happens that a given micro-society first establishes the definition of the area being studied on the basis of cleared and cultivated lands, then grazing areas and, finally, other exploited areas, such as forests, swamps and lagoons. The selected area then shows relative homogeneity from the point of view of its occupation, planning and mode or exploitation of the environment. However, in South Africa, the landscape is most often marked by the juxtaposition of several highly contrasted units, for example irrigated perimeters next to rain-fed grazing lands and cropping areas with no apparent link, with landscape and human units resulting most often from apartheid policies implemented at the time. Yet, these units remained embedded and interwoven by links and flows of labour, people, goods, experience and innovations, among others. This is the case of the populations of Marite and Hazyview, Alice and Fort Beaufort, Bethanie and Brits, and Nwa'Mitwa and Tzaneen. While these townships bring together groups of black

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populations which could be considered different (in terms of ethnicity and modes of exploitation of the environment) from the towns created by the whites, these two worlds have always maintained, including during apartheid, strong interlinks (the black workforce was indispensable to white farming; the agricultural production of white people was indispensable to the survival of black people). Therefore, it is essential to incorporate them into the same agrarian system. This amounts to saying that the equation 'agrarian system = specific homogeneous micro-society' cannot be solved. In this sense, in South Africa it is inconceivable to choose and define a study area by 'artificialisation', that is, the mode of exploitation of the environment, which is the relevant starting point of an analysis in terms of agrarian systems in many regions of the world. In South Africa, hypothesising that two distinct 'agrarian systems' exist on each side of these major landscape discontinuities (between white-owned area and black-owned area) would amount to perpetuating apartheid ideology in the methodological approach. By denying the multiple interrelations between these two spaces, such a hypothesis would not make it possible to understand how the differentiation of each one of these two spaces can only be understood in reference to the other, to the detriment of a systemic and holistic understanding of the system. The methodological choice made within the framework of agrarian diagnosis, which is also one of the originalities of the approach applied in South Africa, is actually the primacy of the complexity of the social sphere through the prism of interrelations, de facto linking micro-societies that were artificially separated by past policies, but that never stopped maintaining relations and flows, as a result making them non-disconnected.

Finally, the meaning taken on by 'small' area is debatable when farms have surface areas of several thousands of hectares, as is the case with the Kat River Valley where farms can reach 13 000 ha, or in regions where surface areas are not as vast but remain just as significant (i.e., with over 1 000 ha in the Brits irrigated scheme). This is also the case in the former homelands where concentrations of populations in the townships are such that, even if the spaces allocated to them are insufficient in relation to the demographics, farming dimensions in *small* areas are large, especially when they include communal grazing areas. As such, it is difficult to delimit a territory that has a reasonable size when conducting detailed surveys and that, in addition, must cover the diversity of existing situations, when farming occupies large surface areas that would require working with very large study areas.

Characterising the mode of exploitation of the environment

Once the study area has been defined and delimited, the idea is to characterise the mode of exploitation of the environment in its historical dynamic at several levels. To this end, it is necessary to examine the landscape with the aim of organising the space of the study area into different parts, according to 'what can be seen as regards uses and practices, at a given time … of the agro-ecosystem [of each one of the exploited spaces of the study area], and as regards the potential relations between

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[them]'. This activity makes it possible 'to gather visual and factual elements on [agricultural] practices, and to formulate a number of interpretative hypotheses as much on the functioning of the landscape and the systems that forged it, as on the most recent modifications to which it was subjected and which are still perceptible' (Cochet & Devienne 2006: 580). However, an *examination* of the landscape could not alone lead to the analysis of the agrarian system. The mode of exploitation of the environment is not set and its dynamic is governed by the rhythm of national and regional history, which finds expression at the level of the study area, in production system trajectories that transform, adapt, change, create themselves or disappear, depending on their structure and specific operations (see Figure 3.3). These trajectories lead to a 'differentiation [of production systems which] is the product of that history' (Cochet & Devienne 2006: 580).

It is important to differentiate elements falling within the competence of the international context, national history and regional history from factors of production system differentiation. Indeed, agrarian history results from the combination of these different scales of analysis. In South Africa, for example, the international context authorised European colonisations after the 17th century, which are the

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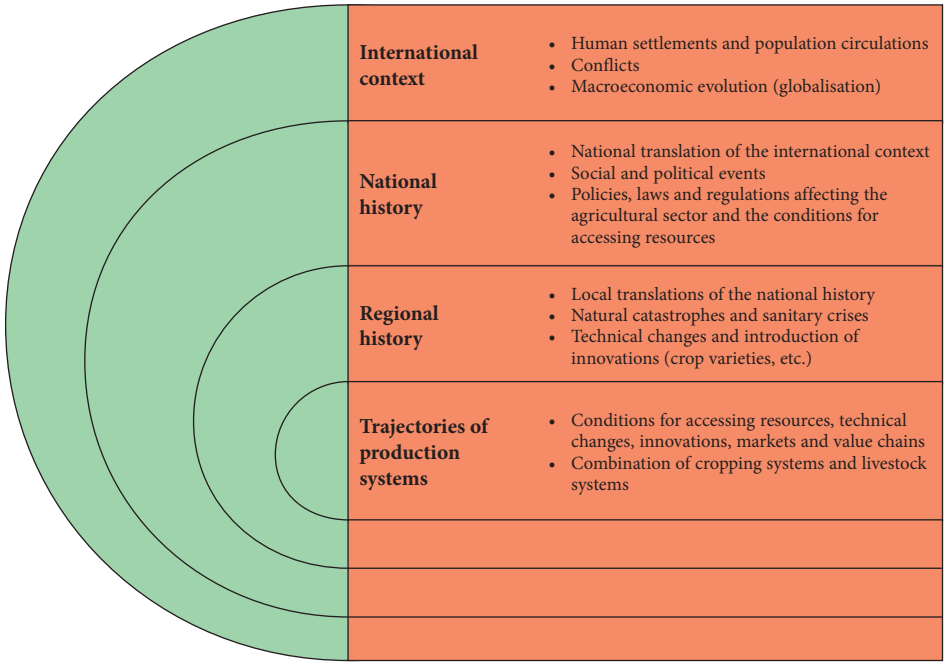
Figure 3.3 Multi-level agrarian history to analyse the origin and evolution of production system trajectories



Source: Authors

cause of serious population conflicts, displacements and reorganisation of peoples and, as a result, property and usage rights in natural resources are being called into question. They are also behind the fact that cultivated plants, non-indigenous domestic animals and agricultural practices were introduced into the country. The national history, and that of the 20th century in particular which is linked to the successive political regimes (including apartheid), has deeply modified property rights and the ways of accessing resources (including land and water), and has created extremely favourable conditions for the development of certain exclusive agricultural structures. Regional histories, which vary greatly according to contexts, in addition to being local reflections of international and national events, are also governed by the rhythms of significant local changes (e.g. sanitation; the introduction of a plant, a technique or a value chain; the development of a town; the creation of a local industry or the establishment of an irrigated scheme). In the end, it is the combination of these scales that, depending on the production system structures and operations that actually satisfy intrinsic and dynamic characteristics, leads to local productive processes being reconstituted.

Selecting production units to be studied in detail and sampling

Once the mode of exploitation of the environment has been characterised and the prior identification of the production systems – the result of multi-level history – established, it then becomes possible to characterise the technical operation of the systems and assess their economic results. To this end, it is of course important to determine a sampling of operations from which to collect the necessary data.

The agrarian diagnosis is a qualitative approach (see Box 3.1). For this reason, it is not meant to spatially cover an administrative entity or a given population – which would be senseless from the point of view of the concept of the agrarian system – or to offer results statistically representative at a specific scale. Nevertheless, by characterising the established and identified diversity of the production systems of a given study area, the agrarian diagnosis makes it possible to illustrate the trends and dynamics of the local agriculture, with enough subtlety and precision to learn reliable lessons on the probable perspectives of agricultural development. It does not prevent one from quantifying the results obtained in the end (estimation of technical and economic performances, including farm incomes) and can be combined with quick surveys, making it possible to 'weigh' each type of production system within the studied area.

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Box 3.1 A question of terminology: Qualitative, quantitative, representative, illustrative and quantified

In the Social Sciences, quantitative or hypothetico-deductive approaches are used to conduct research on populations from statistical samplings, by using a random technique involving a choice to be made by those being interviewed 'randomly' from an exhaustive list of peoples, or involving 'quotas' relying on the constitution of a sample representative of the population, according to sociologically pertinent criteria (e.g. gender, age, geographical location).

Qualitative approaches, on the other hand, are used to conduct research works aiming at detecting or analysing trends, relationships and so on within social processes (descriptive observations and argument analyses). Instead of being guided by hypotheses that require testing (statistically) in order to verify the theory, they are guided by questions: these can be inductive (the primacy of the field results makes it possible to work out a theory) or rely on going back and forth between field and theory (i.e. grounded theory). As such, qualitative approaches do not mobilise closed-ended questionnaires to collect data (which are the central instrument of quantitative approaches). They mobilise other tools adapted to their objectives (e.g. life stories, open-ended and semi-directive interviews, simultaneous and participant observations), which are applied in the field based on a judgement sample, making it possible to apprehend the diversity of situations and favour the comparison of the processes being studied.[3] Of note is the fact that qualitative approaches do benefit from results backed up by figures.[4] Indeed, the strength of these methods relies on the rigour of the research position and the care with which data were collected, data that must be detailed in order to offer a reliable illustration of the reality to be studied.

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A 'snowball' sampling is then carried out so as to search for farms that are illustrative of the different trajectories and production systems previously identified. For each type, a small number of production units is then selected and will give rise to as many detailed case studies. As such, in each area studied within the framework of this book, between forty and sixty production units have been studied in detail from a technical, as well as economic, point of view.

Characterising the technical operation and measuring the economic efficiency of the production systems

It then becomes necessary, for each selected production unit, to collect information that will make it possible to carefully characterise the technical operation of the production system and the potential integration of the productive activity into a diversified activity system, and also to measure the economic efficiency of the agricultural production processes. This characterisation phase must be based on observations and interviews carried out by immersing oneself totally in the study area. This is a *sine qua non* condition of the approach that compels the interviewer to also be the researcher and not to delegate the collection of information required for the analyses. Indeed, observing (the environment, practices, living conditions, etc.), questioning and listening, going constantly back and forth between the collection and analysis of data and the hypotheses built around the key concepts of agrarian

diagnosis, involve long phases of immersion in the study area (at least five months concerning the regional studies presented in this publication). If the researcher must also be the interviewer, it is also because the selection of producers to interview is built systematically, on the basis of an examination of the landscape and a historical approach to the productive processes.

As such, this phase leads to the assessment of the technical performances and the economic efficiency of the production systems, for which three economic orders have been focused on: value added, which is an expression of the creation of wealth resulting from the system operation; productivity, which measures the efficiency of the production factors (in labour and land in particular); and farm income, understood as resulting from the value-added distribution process.

Value added and productivity

The net value-added criterion measures the wealth creation of the agricultural production system. It is equal to the difference between the value produced (the gross profit) and the value of the goods and services consumed in whole or in part during the production process. In order to make an accurate calculation of the production system operation, gross profit and intermediate consumptions can be evaluated directly by the cropping system or livestock system based on yields, product prices and crop management sequence or herd management pattern over time,[5] therefore, from the technical operation of the production system.[6] As to the depreciation of fixed capital assets (or amortisation), this is evaluated on the basis of the actual duration of the utilisation of long-term goods and services, a duration which is considered as a characteristic of the production system (Cochet & Devienne 2006).

The significance of the notion of value added is to allow the comparison, among production units, of the economic results obtained, irrespective of the methods used in distributing this value added among the actors who contributed to its creation. Whether the production unit is family-based (the result of its operation ending up as farm income) or an agribusiness (where profit rate is privileged), whether value added remains largely in the hands of the producer if she or he is the owner of the capital and works with the family workforce, or whether it is distributed among the farmer, the landowner, the banks and the salaried workers, or, on the contrary, concentrated in the hands of the capital contributor, value added remains the universal criterion that makes the comparison of the economic performance of the different forms of agriculture, as found today in South Africa, possible.

Value added can then be brought down to the quantity of production factors involved in the productive process. As such, productivity indicates a relationship between value added (the difference between the value of goods produced and that of goods consumed during the production cycle) and the quantity of production factors used in producing them – the land, capital and labour in particular. One

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speaks of capital efficiency to indicate the ratio of value added to the total quantity of (fixed and working) capital being mobilised, of land productivity to indicate value added produced per hectare, and of labour productivity to indicate the ratio of value added to the quantity of work used (measured in hours or in working days or, still, in number of workers).

In order to measure the economic performance of farms, assess their efficiency and compare this performance from one group of farms to another and from one region to the other, these two ways of spelling out productivity – i.e., labour productivity and land productivity – are essential. While the latter (annual value added brought down to the total surface of the production unit) is an expression of the result of productive process intensification, the former (annual value added brought down to the quantity of work) measures the efficiency of the work incorporated into the productive process.

Distribution of value added and farm income

The definition adopted for farm income corresponds to the portion of the net value added which is kept by the producer, once the distribution operations of value added have been carried out. This distribution reflects the conditions of access to resources mobilised in the production process (land rent paid to the owner, salaries paid to non-family labour, interest on the capital borrowed, land and product taxes). Potential subsidies can complement the portion of value added which is to be paid to the producer, thereby increasing his or her income. An aspect of farm income which is particularly important to families, whose production is partly for their own consumption, is that it is calculated by integrating the whole of the farm consumption representing a part of the value produced by the production unit. This income is therefore distinct from cash income, although both results are frequently confused in the specialised literature.

While value added and productivity measure the economic efficiency of the production system, as a process of value creation, it is farm income which is in a position to express what enables producers to support their families and, if possible, to invest with a view to increasing their capital and, in the end, the productivity of their farms. In family farming, it is this criterion that will best inform the future of the farm, its capacity for development and the conditions of access to resources, as determined by the socio-economic and institutional contexts into which farms are inserted, largely conditioning the way value added is going to be shared out and, therefore, the producer's income. In farm business, profitability is what will be more sought after, in other words, the ability of the business to give a return on invested capital. Profitability can be measured thanks to the internal rate of return. Insofar as the social and economic logics at work in family farms and other social forms of production (businesses in particular) are not the same type, farm income and return on invested capital are not comparable as such. Yet, in South Africa, the juxtaposition

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of very different production units and the questions raised on their future reinforce the importance and necessity of making such comparisons. That is why the criteria of value added and factor productivity, which govern value-added distribution and therefore the remuneration of work and return on capital (criteria that make it possible to measure job creation and income generation), are particularly interesting with a view to comparing social forms of production that are so different.

Placing production systems in the socio-economic and institutional sphere of the agrarian system

Probably one of most difficult activities to be carried out in the agrarian diagnosis, alongside that of defining the study area and its outlines, is placing production systems in their socio-economic and institutional sphere. Indeed, as noted, the concept of the agrarian system proposes placing production systems, which are characterised by a structure as well as a social and economic logic leading to specific practices and performances, in a complex, multidimensional dynamic.

On the one hand, it is necessary to study certain elements of natural resource governance within the micro-society which the agrarian diagnosis proposes to study. Human societies have always organised themselves with a view to acquiring and using resources to satisfy their needs for survival and reproduction, through agriculture, in particular, as well as mining activities. By appropriating and using resources (including land, water and trees) which vary according to region, availability and techniques and practices to exploit them, each society has created institutions to regulate their access, usage and control: property rights, which are often sanctioned by the national legal system, constitute the best example of this. The agrarian diagnosis must of necessity lead to an in-depth understanding of property rights and, more generally, of resource access, usage or extraction; regulation or management; as well as exclusion and alienation methods which are usually the product of history. In this sense, agrarian history, related in particular to land distribution and reorganisation in South Africa, is most illustrative in cases where indigenous people who had property rights, acquired through the ancient appropriation of resources of given territories, were deprived of these rights, which they are currently claiming or which have recently been restored to them.

Moreover, the agrarian diagnosis should also shed light on the interweaving of social logics as well as productive logics linked to agriculture, particularly because they are at the centre of the family farming operation as a special form of production. Farming family logics are not simply the results of a combination of production factors. The work of such families is not just agricultural and located in one place only. Indeed, certain family members are hired in other economic sectors and it is necessary to understand the social organisation and division of family labour between the primary sector (on or outside the farm in the case of mining activities, or the sale of workforce as farm labourers), secondary sector (industry and factories

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set up in rural areas) and tertiary sector. It is, therefore, necessary to study the existing costs of workforce opportunity. However, family logics, to be understood at both the individual and collective levels, often follow several objectives (of production, occupation, heritage, etc.), combining several production ratios which are not wage ratios (unlike the logics of other forms of agricultural production, as in the case of farming businesses). An understanding of the agrarian system would be incomplete without taking into account these structuring elements that go beyond technical or economic issues: organisation and division of labour between the primary, secondary and tertiary sectors; insertion of farms into industries and access to markets; the social logics of farm operation and decision-making; exchange relations and balance of power, particularly as regards accessing and recognising rights on resources.

Finally, understanding the integration and interrelations of production systems in an agrarian system entails exploring issues of access to markets and integration into industries, downstream as much as upstream. These elements, which can be partially understood in the study of agrarian history, determine the existing balance of power within the micro-society, and will have an influence on the future of farms. In South Africa, the facts that a significant number of farms (in the hands of non-white people) were excluded from markets for almost one century, and that white farmers were subsidised, led to important gaps in productivity and income which cannot be compensated for at present, whether through social welfare implemented after the end of apartheid, the transfer of capital from other non-agricultural sources of income, or the recent impulses enabled by the current national policy of affirmative action. To consider the perspectives of development of production systems, it is indispensable to understand these issues beyond internal operational logics.

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Notes

1 Peasant Studies only rarely called upon the concept of 'system', because the technical process as such was seldom the focus of analysis. Moreover, there was a certain distrust vis-à-vis the approach in terms of systems. Indeed, searching for the system's characteristics, its 'balance', its 'internal coherence', the 'retroactions' and 'regulations' inherent to the notion of system, its 'reproducibility' seemed, in the eyes of these researchers, incompatible with the highlighting of internal conflicts, tensions and differentiations. Researchers engaged in Peasant Studies or Agrarian Studies, as well as those adhering to the school of FSR, did not give enough attention to the social relations of production and exchange, to the study of crisis and reconstitution periods and therefore to historical dynamics (Cochet 2012).

2 The delimitation of the outlines of a study area cannot be a priori defined, because it depends closely on the combination of biophysical conditions – i.e., the potentialities and vulnerabilities of the natural environment – and the method used to farm the environment, which offers the first hypotheses for pinpointing and explaining the diversity of encountered agricultural productions.

3 Open-ended interviews are a data collection technique in which the researcher intervenes very little. She or he indicates a general theme which the respondents interviewed choose to explore as they like. Open-ended interviews are used during agrarian diagnosis, particularly to gather information on the study area that adds to the 'examination' of the landscape and the main components of the agrarian history. With the technique of semi-directive interviews, the researcher prepares an interview schedule adapted to the survey and to the theme being tackled (with a view to studying technical practices or assessing sales, for example). However, during the interview, the researcher does not necessarily follow the order in which the questions were planned; questions should fit into the discursive thread of the interviewee, who is free to structure his or her own thoughts. The researcher can, depending on the discourse of the interviewee, end up asking questions that were not planned and/or end up not asking questions that were planned initially.

4 In this sense, these interviews differ from ethnographic surveys.

5 Gross profit: The value of final productions, including sales estimated at the selling price for each type of production system according to their insertion into the food-processing industry, and farm consumption estimated at the market price.

6 Intermediate consumptions: Annual consumption of goods or services.

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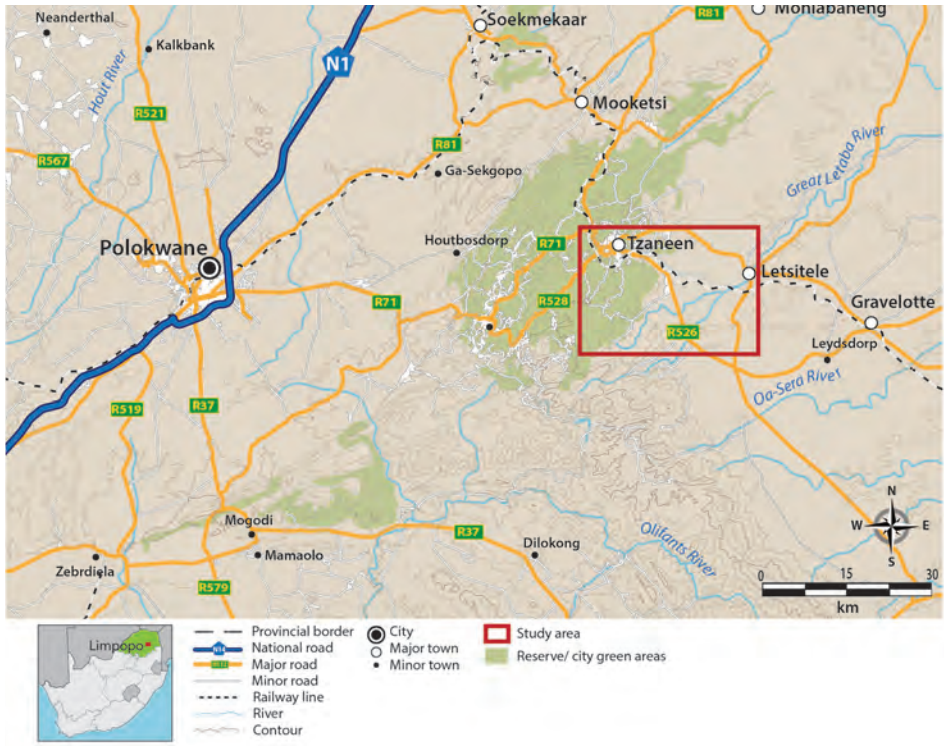
4 *The interlinked but continuously divergent production systems of the catchment area of the Nwanedzi River (Limpopo province)*

Mathieu Boche and Maud Anjuère

The study area consists of the agricultural region of the middle section of the catchment area of the Nwanedzi River, which is located close to the town of Tzaneen. It is situated near the Tzaneen Dam at the beginning of the catchment area of the Groot Letaba River, one of the most important tributaries of the Olifants River. Figure 4.1 shows the location of the study area.

Figure 4.1 Location of the study area in Limpopo province



Source: Google Maps

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The study area is characterised by three criteria which are important in shaping the region's agrarian framework.

Agro-climatic conditions and importance of agriculture

The region has relatively good agro-climatic conditions with a tropical, semi-arid climate (the average temperature is between 10 and 30°C, with annual rainfall of between 500 and 700 mm) and fairly homogeneous soils (alluvial and sandy on the top and flat areas; clay soils in the lower-lying areas). Despite a distinct dry season, crop production is possible throughout the year under irrigation. As a result, agriculture is well developed and the most important economic activity in the Greater Tzaneen Municipality.[1] Thus, the area owes its accolade of 'Tropical Paradise' to its climate and the proven track record of consistent production of high-quality subtropical fruits. Annual production of subtropical fruits and nuts is estimated at more than 223 000 tons. The output of the local municipality alone, according to the estimates of the Limpopo Department of Agriculture (2012), constitutes more than 60 per cent of the national total for crops like mango and avocado, and approximately 20 per cent for crops like citrus.

Historical background, land tenure and socio-economic characteristics

The region straddles the former homeland of Gazankulu and a neighbouring area with private farms. The northern part of the study area includes a section of the Nwa'Mitwa territory, located on tribal lands that were part of Gazankulu. The region is characterised by high poverty rates with high levels of underemployment and unemployment (Aliber 2003; Carter & May 1999). The southern part of the study area consists of commercial farms, mostly owned by white landholders. This sub-region is subject to land claims (certain farms have been restituted/redistributed), as well as other programmes associated with the national affirmative action policy in agriculture.

Market proximity, off-farm jobs and contract farming opportunities

The proximity of commercial farms, located in both the study area and in the Groot Letaba River Valley, one of the leading regions for fruit and vegetable production, has enhanced the development of agricultural wage labour opportunities and the presence of contract farming. The population of the study area is estimated at around 16 000 households (Municipal Demarcation Board 2006), of which, according to fieldwork, about 2 000 are involved in agriculture, including livestock and subsistence cropping activities in gardens. Eighty-two are private landowners.

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The proximity of Tzaneen (380 000 inhabitants) constitutes an opportunity for the commercialisation of fresh produce.

Landscape examination and zoning

The landscape in the study area consists of a succession of medium-altitude hills with convex–concave slopes culminating between 500 m and 1 000 m above sea level. The Nwanedzi River, which crosses the study area, is a perennial stream with seasonal variations over the year. Many seasonal streams supply water into the Nwanedzi River during the rainy season.

Regarding the biophysical characteristics, the study area is located on the north-eastern part of the Kaapvaal Craton, which, along with the Pilbara Craton of Western Australia, is one of the only remaining areas of pristine crust on Earth, dating from 3.6 to 2.5 billion years ago. The Craton is a mixture of early Archean granite greenstone terranes and older tonalitic gneisses, intruded by a variety of granitic plutons. Subsequent evolution of the Kaapvaal Craton is thought to be associated with continent–arc collision that caused an overlaying succession of basins filled with thick sequences of both volcanic and sedimentary rocks (Louzda 2003; Nguuri et al. 2001). As a result, soils in the study area consist of relatively homogeneous clays, with some differentiation between hilltops and bottom parts of hillsides: while soils are quite sandy at hilltops and more easily eroded (source rock on surface), they become more argillaceous and take a dark-red colour when located in the valleys.

The study area can be subdivided into three agro-ecological units:

- The steepest and highest parts (A on Figure 4.2), reaching up to approximately 1 000 m, are sharply sloped and densely wooded from an altitude of 600 m upwards. They can be used as grazing areas for livestock, but most of the time they are not used for farming;
- The hillsides (B), the altitudes of which vary between 400 and 600 m, in which slopes are moderate and used for habitat (D) and farming; in that unit, farmers grow tropical fruit plantations (mango, citrus, litchi and guava, among others), annual crops (usually situated at the feet of hillsides, where soils are richer in clay due to the presence of the nearby water), or pastures (in the less fertile areas);
- The valleys (C) are usually cluttered by dense tree vegetation and are not used for farming. They can host seasonal or perennial streams.

In addition, the study area can be subdivided into two parts that were affected differently by past development policies. The southern part of the study area is characterised by a low population density (10–12 dwellers/km^2) and by a land tenure system that mostly relies on private property. Landholders are mainly white, hillsides are planted in tropical fruit trees (mango and citrus mostly) and, to a lesser degree, annual crops (vegetables), which can be found in the bottom parts of hillsides.

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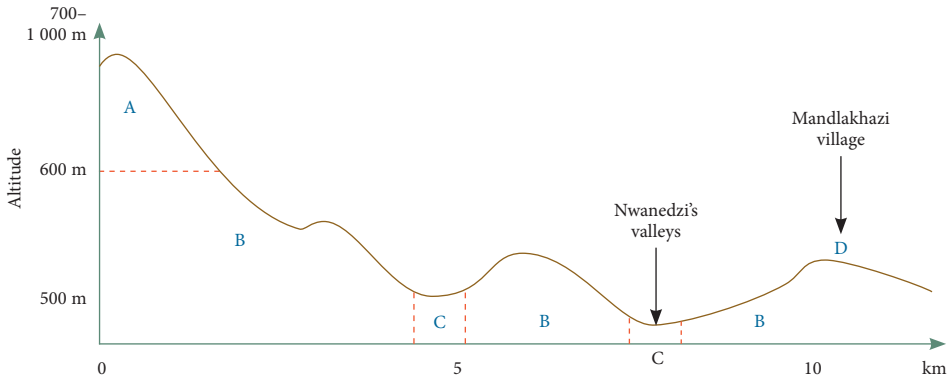
Figure 4.2 North–south transect of the study area showing three agro-ecological units



Source: Authors

Valleys are densely forested and not cultivated. Finally, wooded hilltops in the highest parts are fenced and used as private pastures (see Figure 4.3).

The northern part of the study area is highly populated (500 dwellers/km^2), but only by black populations. Various settlements, such as Mandlakhazi, Mbekwani, Nwa'Mitwa and Nwadjaheni, were villages of the former homeland of Gazankulu. The land tenure system relies on communal property rights. During apartheid, the landscape was subdivided into a residential area, a cropping area and common pastures (see Figure 4.4). Usually, settlements are located at the hilltops and are subdivided into 2 000 m^2 family plots surrounded by communal grazing areas. Hillsides are subdivided into medium-sized farming plots (1 to 10 ha) and planted with tropical fruit trees (mango mostly) and annual crops (staples such as maize,

Figure 4.3 Landscape organisation in the southern part of the study area

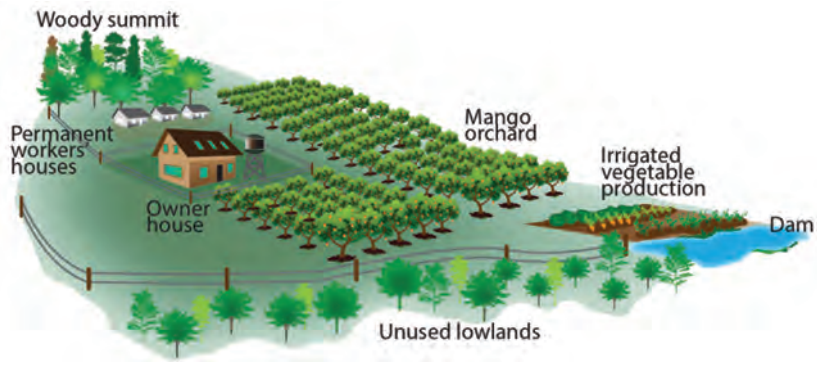


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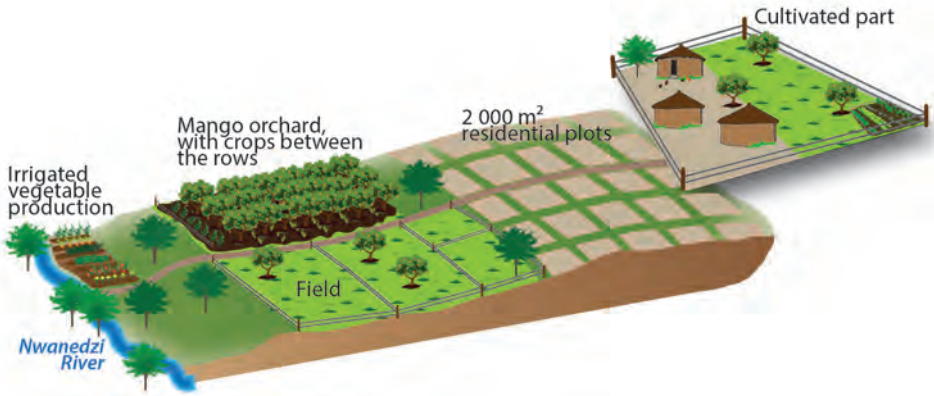
Figure 4.4 Landscape organisation of the northern part of the study area



Source: Authors

beans, pumpkin, peanut and groundnut), which are grown between the trees. Vegetable gardens occupy the bottom of the hillsides down to the valleys, which are mostly deforested.

Historical dynamics

First white settlements in tribal lands and early division of land

According to collective memory and some authors (Great Britain War Office 1905), the study area was populated about 300 years ago by Bantu-speaking ethnic tribes, including Shangaan and Tsonga. They were characterised by a tribal governance system organised according to different chieftaincies. Hay states that fifty-nine chiefs were identified in the Tzaneen areas, which made up the Letaba (present-day Mopani) district. Some of the major chiefs of the area had a 'tribal location', but it would be wrong to assume ethnic homogeneity within these locations (Hay 2011). People who lived on this land owed allegiance to the local chief, paid tribute and were allocated land on which to settle. Land was not 'owned' by anyone, but belonged to the community or 'tribe' as a whole. At that time, the region was mostly used as collective grazing areas for cattle.

This tribal governance system faced opposition with the creation of the South African Republic (informally known as the Transvaal Republic) in 1857. The new independent government claimed sovereignty over the entire area between the Limpopo and Vaal rivers. The Transvaal government adopted a resolution which prohibited anybody who was not a 'burgher' – a descendant of Dutch and other settlers of European origin, also known as Boers (farmers) or Voortrekkers (pioneers) – from owning land. The resolution specifically forbade African-origin

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populations from owning land. However, the Transvaal government's authority and influence over the territory remained rather limited up to the end of the First Anglo-Boer War in 1881, with the study area remaining spared from white settlers' expansion.

From 1881 onwards, however, the Transvaal government facilitated the settlement of white settlers in the entire region. White people could buy holdings from the government of 1 000 up to 2 000 morgen located in the southern part of the study area.[2] This situation led to the creation of the six 'original farms': Jaffray, Welverwacht, Taganashoek, La Dauphine, Duplex and Uitzoek. Nevertheless, few 'burghers' settled there, mostly because of the presence of malaria (making the lowveld areas inhospitable to white settlers), the poor transport links and the lack of economic activities, in particular compared to the neighbouring Groot Letaba Valley.

In the earlier decades of the 20th century, various instruments, such as legislation, resolutions, proclamations and ordinances, played a key role in legitimising systematic land dispossession and segregating the country, and in particular the study area. Among those instruments, it is worth mentioning the Crown Land Disposal Ordinance (1903), the Land Settlement Act (1912), the Native Land Act (1913) and the Native Trust and Land Act (1936). These legal instruments had the consequence of formally splitting the study area into two parts: the northern part (in yellow in Figure 4.5) became part of a 'native reserve' where African-originated populations had to settle, while the southern part was reserved for white settlers.

This being said, at that time the production systems of white settlers and black populations living in the area were very similar. Farming was based on staple cropping (in particular maize, beans or *vigna* and groundnuts), combined with extensive cattle ranching. Farmers used ploughs and draught oxen to prepare land for cultivation. Most farm production was for self-consumption. In addition, farming was often combined with non-farm activities, in particular within black families where the men were forced to work in towns in order to be able to pay the different taxes imposed by the government. Likewise, the most successful white settlers were those for whom farming was a secondary activity (Packard 2001).

From eradication of malaria to the implementation of the first pro-white agriculture policies

In the 1950s, three phenomena had significant implications for the agrarian system in the study area.

First, the government launched field trials and an important public malaria control programme throughout the Transvaal lowveld. Eradicating malaria was not only considered of public health interest, it was also of economic importance, in particular in regions which were considered to contain – according to the Union of

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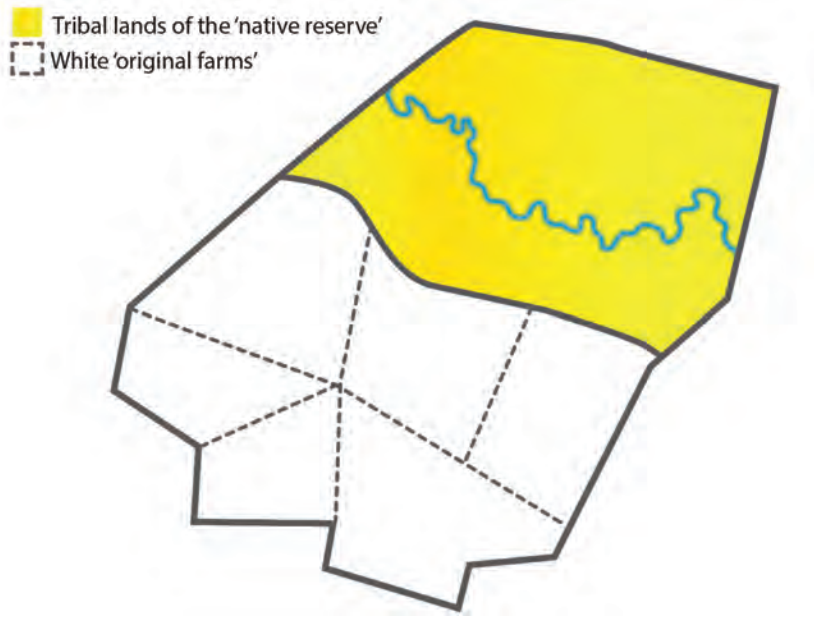
Figure 4.5 The first division of land in the study area



Source: Authors

South Africa (1952) – some of the country's richest farming land in the world for subtropical fruit). A malaria station was established in Tzaneen in 1932, but until the early 1940s, actions consisted of advocacy and training–teaching the communities how to protect themselves through treatment, improved housing construction and insecticidal spraying. Towards the end of World War II, when field trials demonstrated the usefulness of DDT to control malaria, the government managed to eradicate malaria and by the beginning of the 1950s, the municipality of Tzaneen was declared free of malaria.

Second, the rapid development of tropical fruit production (in particular citrus) in the neighbouring Groot Letaba Valley put pressure on land in the Nwanedzi hillsides. The relatively less populated area (owing to the malaria prevalence) led to land prices being lower than in the upper agricultural regions near Tzaneen. In this context, some of the 'original farms' located in the southern part of the study area were subdivided and sold as 100 morgen plots.

Finally, the government of South Africa reinforced its support of white farmers, in order to enable the development of commercial agriculture in the Transvaal Lowveld. Loans were facilitated through the Land Bank, technical assistance was developed by the cooperatives, and the introduction of new crops (tropical fruit trees) and techniques (related to irrigation, in particular) was promoted in the area.

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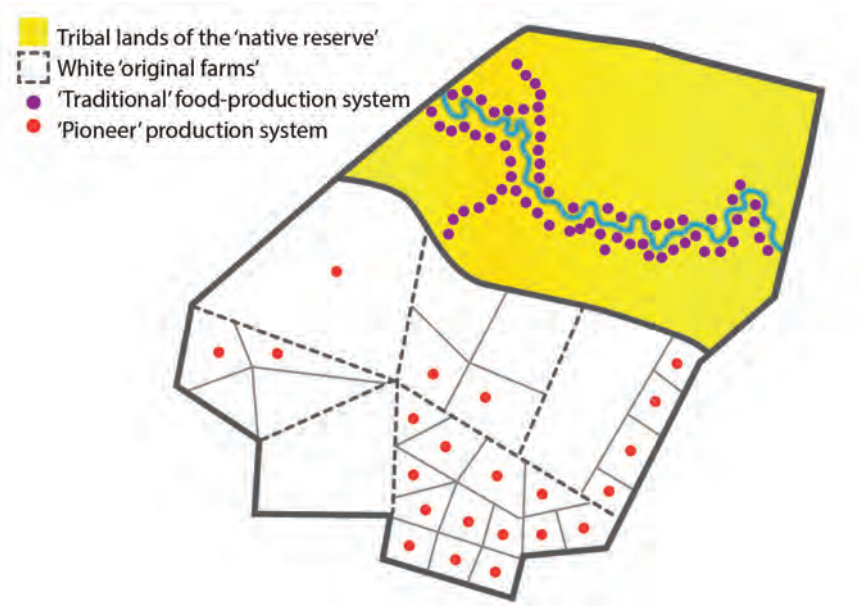
Figure 4.6 Creation of 100 morgen plots on several original farms



Source: Authors

The process of modernisation of white agriculture that had started in the 1920s and 1930s continued after World War II and into the 1950s.

The consequences of these initiatives resulted in a strong differentiation of production systems, correlated to the geographic segregation of the study area.

In the southern part, some white farmers kept on implementing 'traditional' staple-oriented production systems (maize, beans and pumpkins, combined with cattle raising) comparable to the systems employed in the previous period. Others managed to establish a 'pioneer' production system based on fruit tree plantations (mostly mango and papaya) and vegetables (planted on 5 morgen each year between rows of trees) that benefited from furrow irrigation, thanks to public support such as subsidised loans from the Land Bank and technical advice from the cooperative. This development of fruit and vegetable crops implied an increased need for wage labourers, mainly from the black reserves. These farmers invested in the construction of small-scale private dams built on non-permanent streams, which allowed them to irrigate crops (indispensable for vegetable production). The commercialisation of products was made possible thanks to the construction of the railway that linked Tzaneen to South Africa's major towns, such as Johannesburg, Pretoria and Durban. These farmers also combined cropping with extensive cattle raising.

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However, after a decade of continuous expansion of tropical fruit tree plantations, most of the farmers reached the limit of expansion of the system. For example, a farmer who owned 100 morgen and had planted 5 morgen each year ended, after fifteen years, with only 25 morgen of pastures, which did not allow for enough cattle to be raised to provide the manure used to fertilise the vegetable production. Some farmers decided to intensify their production system with an upgrade of the irrigation equipment (pump, pipes and sprinklers) and the development of new crops, such as tobacco and cotton. Moreover, the new agricultural policies of the interventionist government (monopoly buying, single-channel exports, crop loans, subsidies, guaranteed prices and commodity boards) and a new market opportunity (the juice factory in Letaba) ensured a relatively enabling environment for most white farmers.

The other farmers, who could not realise investments in their irrigation equipment, remained less competitive, with most of them selling their farms. This situation explains the massive turnover observed in the southern part of the study area during that period and the reconcentration of land in the hands of the most successful farmers who were able to buy land from the worse off.

In the northern part, the black farmers continued to develop rain-fed production systems, based on the combination of starchy staples (maize, beans and pumpkins), groundnuts and peanuts, mostly for self-consumption, and raise cattle and small ruminants in the unfenced common pastures. The transfers of fertiliser from the cattle pen to the cultivated areas are typical of an 'Ager-Saltus production system' (Mazoyer & Roudart 2006).

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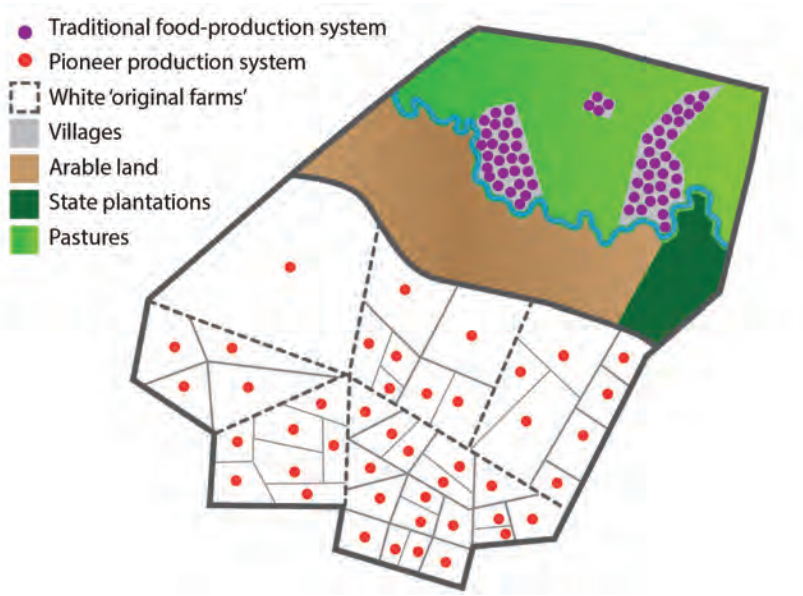
The golden age of white agriculture and the reinforcement of segregation policies

In 1961, the Union of South Africa became the Republic of South Africa and withdrew from the British Commonwealth. At that time, the policy of separate development went into a full implementation phase, with the homeland structure as one of its cornerstones.

In 1969, the northern part of the study region was incorporated into the Gazankulu homeland, which was proclaimed semi-independent for the Shangaan and the Tsonga. Two years later, the new government implemented a policy of 'resettlement' to force people to move to their designated 'group areas'. Within the homeland, landscapes were reorganised in accordance with betterment planning schemes.

These policies had the following consequences: in the northern part of the study area, the landscape was reorganised into three areas – villages, arable lands and pastures (see Figure 4.7). Firstly, people were resettled into villages. Families were obliged to settle on 2 000 m^2 residential plots located in the two newly created settlements, Mandlakhazi and Nwadjaheni, which are to date among the most populated villages

Figure 4.7 Landscape restructuring in the northern part of the study area, after the creation of Gazankulu homeland



Source: Authors

in the study area. Secondly, regarding the arable lands, parts of them fell under the management of the homeland agricultural development agency, which promoted the establishment of mango orchards in a 'state' plantation, where black agricultural labourers worked under the supervision of black public workers of Gazankulu. At the same time, those government workers, who were also part of the local elite of Mandlakhazi and Nwadjaheni, managed to be granted 8 to 13 ha plots of arable land to develop their own mango orchards. In the remaining arable lands, black families continued to develop rain-fed production systems on reduced plots, which over the years were subdivided as a result of demographic expansion in the homeland. Thirdly, the pastures were from now on reserved for grazing only. Most families, which previously had a plot in the area declared for collective pasture, had to stop cultivating, as cattle, which could now graze freely, systematically damaged crops. Most of these families that lost their arable plots could not access a new plot; a large majority had to adapt their agricultural activities and limit them to their residential plot. Their only option was to continue to grow some staples and keep some cattle. These families often had to sell cattle to ensure their subsistence, in particular in a context of generalised overgrazing on the communal pastures. In addition, as a result many economically active men had to look for another job. Those who could stay in the study area were employed as agricultural labourers on the white farms or 'state'

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plantations; those who could not stay in the study area had no other option than to migrate to find jobs in other sectors in the main urban hubs.

In the southern part of the study area, the process of modernisation of white agriculture translated into the introduction of better-performing irrigation equipment (pump, pipes and sprinklers). The possibility of investing in irrigation equipment and on-farm access to water became the two main criteria differentiating production systems, as it was decisive for the development of fruit tree plantations and vegetable production. Consequently, the 1960s and the 1970s were decades of fast agricultural development in this area. White farmers broadly used inputs (fertilisers and phytosanitary products, in particular) and, consequently, increased yields and levels of productivity per hectare. However, contrary to what happened at national level, the development of orchards also implied a proportional increase of the workforce (most of the crops were cultivated manually) and of costs of production, in a context of increasing costs of agricultural inputs.[3] As a result, by the end of the 1970s, production growth slowed down, in particular for the white farmers with smaller-scale holdings that became less profitable.

The agrarian crisis of the 1980/90s: In or out the system

From the early 1980s, related to domestic political forces heightened by pressures emerging from the General Agreement on Tariffs and Trade negotiations for the abolition of quantitative import controls and the introduction of tariffs on agricultural commodities, the agricultural sector faced increasing deregulation and liberalisation pressures (Vink & Kirsten 2000). In addition, the embargo against South Africa and internal national political contestations, with many demonstrations breaking out in the homelands, including in Gazankulu, led to an increasingly unstable situation.

This radical macroeconomic shift affected export markets and led to the depreciation of the national currency, as well as a general increase in wages, which made the non-family agricultural workforce more expensive. All these changes affected the white farmers in the southern part of the study area. Specialising in tropical fruit production for export markets, the decreasing output prices and the increasing input costs caused the bankruptcy of the smaller farms (approximately less than 40 ha). This situation benefited both new residents from Tzaneen and the largest white farmers. On the one hand, the former became part-time farmers working in town and benefiting from the opportunistic mango production of the already planted orchards. On the other hand, the largest white farmers, who were also better off and did not suffer as much as the others from the situation, decided to take advantage of the decreasing competition. They turned to higher-quality fruit plantations, changing varieties (fibreless mango, citrus, kumquats, guavas and litchis) and intensifying the capital in their production systems (motorised machinery, high-efficiency irrigation equipment, etc.). This restructuring contributed to reducing the need for labour on

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these farms, and also controlled costs. This increased the difficulties of many black families in the northern part of the study area who relied on these off-farm activities.

In the northern part, after liberalisation, the Gazankulu development agency was disbanded, leaving the families living from mango orchard production on the 'state' plantations and members of the local elite stranded, both technically and financially.

Post-apartheid reforms and restructuring of markets

From the early 1990s onwards, the end of apartheid and liberalisation offered new hopes for changes in South African agriculture, and in particular in the study area. The production environment had changed (economic deregulation and withdrawal of the state) and markets had been restructured, becoming increasingly consumer-driven and vertically integrated (OECD 2007). In addition, by the end of the 1990s, public programmes in the context of AgriBEE and other affirmative action programmes, in particular linked to land reform, started to be implemented in the region.

On the one hand, the largest-scale white farmers in the southern part of the study area, who had managed to overcome the 1980/90s crisis, succeeded in adapting their production systems to the new context by equipping their farms and becoming highly productive. They were able to meet the required volumes and quality (norms and safety standards) and succeeded in remaining the preferred suppliers of processors and export agents, which have progressively controlled upstream and downstream segments of value chains, in particular linked to tropical fruit production (see Chapter 13).

On the other hand, the reduction of job opportunities, in addition to the closure of the Gazankulu development agency, led to significant challenges for black farmers. Some black families managed to acquire plots of arable land in the northern part, with permits allowing them to occupy 2–5 ha on communal land. Others managed to access land thanks to social networks established before the end of apartheid (e.g. access to land and support as government workers or as decision makers in the former Gazankulu). And a few benefited from public support in the context of land reform (mainly the SLAG and the LRAD programme). Those last two groups of black farmers formed a new class of what is called 'emerging farmers'. Some specialised in vegetable production, others in industrial broiler production. In addition, to assist land reform beneficiaries to establish themselves as emerging entities, a broiler-chicken project has been supported for five emerging farmers, initiated by the Limpopo Department of Agriculture through its Comprehensive Agricultural Support Programme grants and associated loans from the Land Bank. The department requested a local industrial chicken processor to provide production expertise, slaughtering and marketing services for broiler chickens to selected farmers. However, these changes did not reshape the overall situation of the northern part of the study area as they only concerned a small number of producers.

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For the many, the situation remained the same: production systems were limited to starchy staple production on residential plots, with some cattle or small stock being kept on the communal lands. Besides farming in these difficult conditions, families mostly rely on off-farm jobs and government social grants.

Typology of production systems

Thirteen production systems grouped in seven broad categories

Subsistence micro-farmers cultivating residential starchy staples in gardens for self-consumption, depending on off-farm incomes (subgroups 1, 2, 3 and 5)

Micro-farmers have poor access to land (500 to 1 000 m^2 in the residential plots, occasionally accessing up to 4 000 m^2 in the communal land) and consequently rely on the cultivation of gardens around their houses. Micro-farmers mostly combine the cultivation of starchy staples (maize, beans and pumpkins on the same plot; a few manage to complement their production with sweet potatoes, peanuts and groundnuts on separate plots) with growing vegetables (spinach) around the house. However, this is only during the rainy season because of the lack of access to irrigation water (in some cases, they access tap water and grow spinach and tomatoes for family consumption). They also breed a few chickens for family consumption. One or two family workers carry out all the work manually, except for the tillage for which a tractor is rented. Very few inputs are used for crops (some manure and chemical fertilisers in small quantities). As a result, farming activities are limited and contribute only marginally to this group's subsistence (4 to 14 per cent of global income). With insufficient access to assets and insufficient production, micro-farmers are generally excluded from markets and farming provides only a basis for subsistence and food security.

The micro-farmer group is very heterogeneous in terms of livelihoods. They can be differentiated into four subgroups according to their production system characteristics, depending on their assets and cropping system. With the younger, active population often having migrated, these mostly female-headed households implement survival strategies to cope with very low incomes and take any opportunity that allows them to improve their livelihoods, such as small irregular jobs in the service sector in the community, casual agricultural labour, social grants and remittances. Despite engaging in diverse off-farm activities, these households hardly succeed in generating an income above the local survival threshold.[4]

Micro-farmers depending on off-farm income, combining staples for self-consumption and vegetables for local markets (subgroup 4)

The second group consists of couples composed of a retired person and an active person engaged in a permanent activity (small business). Social grants or off-farm

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incomes were invested in an irrigation system (borehole) which provides water for domestic use, for the sale of drinking water to the community and for irrigation purposes (manual only). This private borehole allows them to irrigate their residential plot and to produce different kinds of vegetables, with 80 per cent of the production being sold in the community. Unlike the subsistence micro-farmer group, these farmers have access to water, allowing them to cultivate vegetables and in some cases to keep an orchard (mango). They also fatten chickens and have a small herd of cattle that graze freely on communal land. The produce is sold on spot markets within the community or to local merchants. For this group, farming is a productive activity and the basis of their livelihoods. They would like to develop their farming activity if their constraints could be overcome, such as limited access to resources, lack of credit and difficulties in collecting and transporting their products to markets.

Small-scale producers of staple crops depending on off-farm activities and social grants (subgroup 6)

The third group combines small-scale farming, off-farm activities (taxis and small businesses) and social grants, which represent a significant part of their income (about a third). These households have access to a plot outside the residential areas (average size 1.8 ha, up to 10 ha), which they cultivate in addition to a residential garden. Starchy staple products (maize, beans and pumpkins on the same plot) are sold on spot markets or to local merchants. As they have access to more land, they need to hire daily workers in addition to the two family workers for weeding the crops. They have been able to plant mango trees and they sell a part of the green mangoes for atchar. The farming activity allows them to have food and a financial basis, but for most of them farming is not considered to be their core productive activity.

Medium-scale commercial farmers specialised in vegetable production for the local and domestic markets (subgroups 7, 8, 9 and 10)

These households are better endowed (largest plots of 2 to 15 ha for subgroups 7 and 8 and a small farm in the south of the study area for farmers in subgroups 9 and 10) and because of the more developed infrastructure (private boreholes, irrigation systems, tractors and private vehicles), they are able to develop a marketable vegetable production, such as spinach, tomatoes, cabbage, carrots, beetroot, onions, chillies and butternut (up to three cycles per year for subgroup 8, for instance). They sell this to local merchants, to fresh produce markets or under formal contracts to supermarkets (in particular organic production-management contracts), and to processors or restaurants (marketing contracts). As a result of successful but expensive practices, farming has become the pillar of their livelihood, the rest being from non-farm sources including social grants. Farming is a profitable means of

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existence for farmers in subgroups 7, 8 and 9, but without the support from which they benefited on the basis of their personal social networks just after 1994, they would not have been able to develop this activity. Even if they develop the same production system and have a few hectares of mangoes, farmers of subgroup 10 are less dependent on their revenues from farming (35 per cent of the total income).

Extensive commercial farmers, producers of fruits mainly for the domestic market (subgroup 11)

Extensive commercial farmers combine an independent or a qualified permanent off-farm activity with a family business or managerial farm requiring numerous permanent and temporary workers. They are well equipped with an operational irrigation system and a tractor. They have specialised in extensive mango production (low use of inputs and workforce) and cattle breeding. Mangoes are usually harvested green to be delivered to local processors or sold ripe to merchants, fresh produce markets or exporting agents. Some of them have contracts (marketing) which are usually verbally concluded. These farmers are dependent on their mango production, so they have developed a risk reduction strategy based on the diminution of levels (and costs) of inputs used for the mango production.

Intensive large-scale commercial producers of fruits and vegetables for the domestic and export markets (subgroup 12)

The farmers in this last group are specialised in large-scale commercial farming. They have developed an intensive (in terms of labour, capital and inputs) production of fruits under irrigation. They own tractors, greenhouses, warehouses and a packing unit each to satisfy the requirements and the standards of their buyers (local merchants, processors, fresh produce markets and exporting agents), with whom half of them have various types of contracts (mostly marketing but also production-management contracts). Their activities are concentrated on large areas of private land. They combine their production activities with extensive cattle breeding on private pastures. The main difference with the farmers in subgroup 11 is the choice for 'high-density' mango orchards (700 trees/ha instead of 280 trees/ha for farmers in subgroup 11). This intensification of the production allows them to reduce the number of daily workers for harvest.

Emerging industrial broiler producers (subgroup 13)

These households, who are mostly black land reform beneficiaries, are specialised in industrial broiler production under resource-providing contracts with a local agribusiness (Bushvalley). Agriculture is their only economic activity. The viability and sustainability of this specialised and intensive but expensive production system is questionable, both in agro-ecological and economic terms. It is not clear if the farmers engaged in this production system would have had the means to invest and

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renew their equipment and to develop an economically sustainable activity without massive external (mostly governmental) support.

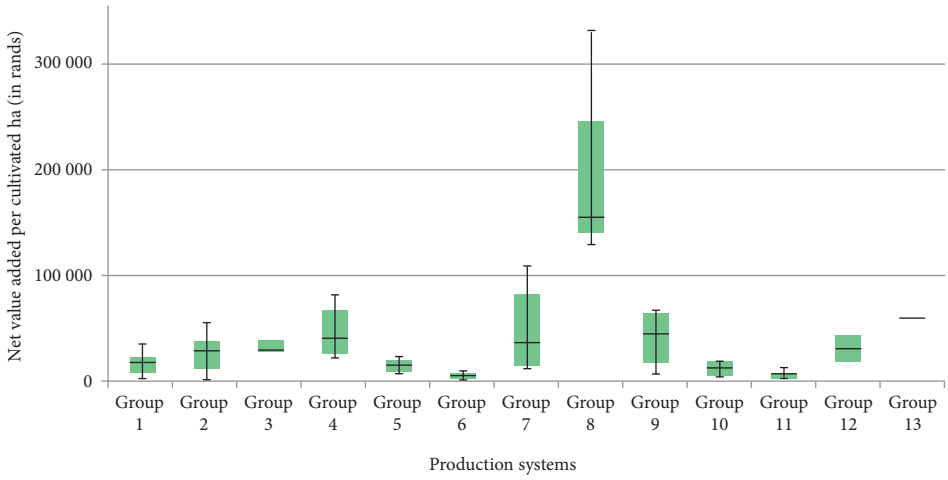
Economic results

The agrarian diagnosis conducted in the study area allowed the researchers to estimate some of the key economic features of production systems and to better understand the productivity and income gaps within local agriculture.

Land productivity

Figure 4.8 shows a comparison of land productivity or net value added per cultivated hectare in the study area. This figure firstly shows the wide range of economic results obtained between the different production systems. Most production systems generate levels of land productivity comprising between R5 000–R40 000/ha on average. The lowest levels of land productivity are found in the operations of large-scale farmers, whether the agricultural input-extensive ones (subgroups 10 and 11) or the agricultural input-intensive ones (subgroup 12) that generate comparable performances to the performances of the micro-farmers (subgroups 1, 2, 3, 5, 6 and 7). The micro-farmers engaged in vegetable production (subgroup 4), the specialised medium-scale vegetable producers (subgroup 8) and the industrial chicken producers (subgroup 13) distinguish themselves with the highest (and highly variable) level of land productivity. The subgroup of medium-scale specialised vegetable producers

Figure 4.8 Land productivity of production systems in the study area



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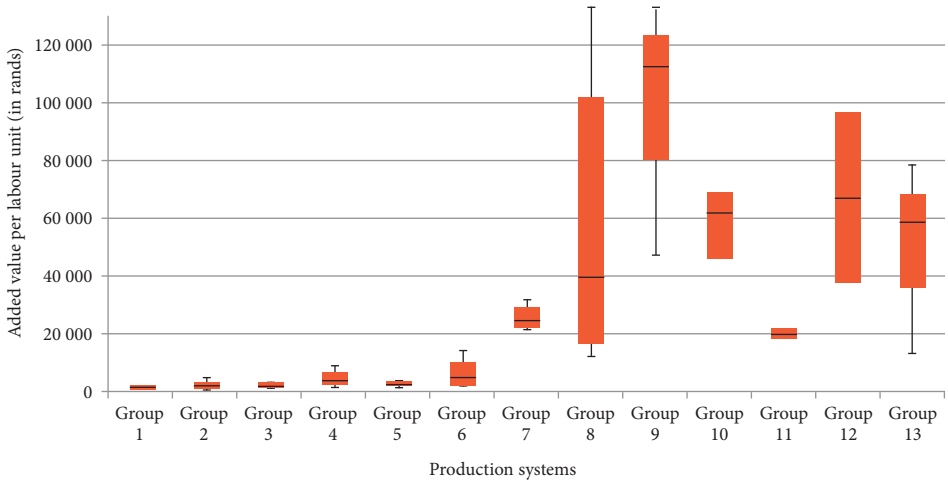
(subgroups 4 and 8) that are able to produce the whole year round (two or three cycles/year) are by far the most productive farmers per hectare (the problem is that they are limited in accessing farmland). On very small plots, industrial chicken producers obviously generated high land productivity. One should note that there is no real difference in land productivity between micro-farmers and the large-scale commercial mango and cattle producers (subgroups 11 and 12), despite notable differences of equipment and agricultural input use.

Labour productivity

Figure 4.9 shows levels of labour productivity among production systems in the study area. The medium-scale producers specialising in vegetable production for the local and domestic markets (subgroups 8, 9 and 10) and the industrial chicken producers (subgroup 13) generate the highest labour productivity levels, followed by the large-scale commercial farmers (subgroups 11 and 12) and the small-scale producers of staples and fruits and vegetables for local markets (subgroup 7). Farmers in subgroup 7 face cash-flow problems and are only able to grow one cycle of vegetables during winter, which severely affects their labour productivity in comparison with other vegetable producers (subgroups 8 and 9) who have been able to grow vegetables three times per year and maximise family labour in the small plots they could access. Large-scale commercial farmers (subgroup 12) generate relatively low levels of labour productivity, if we put the results in the perspective of the investments realised and of their insertion into high value chains. These

Figure 4.9 Labour productivity of production systems in the study area



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production systems suffer from high costs (inputs and equipment) and require many workers, which affects labour productivity. The other large-scale commercial farmers (subgroup 11) did not invest as much as farmers in subgroup 12 did and chose a more extensive system which is also less profitable. Producers in subgroup 10 present a lower level of labour productivity, as they have chosen to diversify their activities out of the farm rather than increasing the value added per worker. Micro-farmers (subgroups 1, 2 and 3) are not able to increase the value added of their production systems per worker on their very limited residential plots, mostly because the use of family labour (the only type they use) cannot itself increase the number of working days dedicated to agriculture because of limited access to the other production factors (land and capital). The limited number of days of labour per family worker necessary to develop these production systems explains their low levels of labour productivity. However, farmers in subgroups 4, 5 and 6 have better access to resources. As a result, farmers in subgroups 4 and 6 manage to slightly improve their labour productivity levels. This is not the case for farmers in subgroup 5 because they continue to establish the same kind of production system based on staple crops (maize, pumpkins and beans) and do not manage to improve labour productivity. The situation is different for farmers in subgroup 4 as access to water allows them to increase the value added per hectare and per worker, in particular because of vegetable production during winter.

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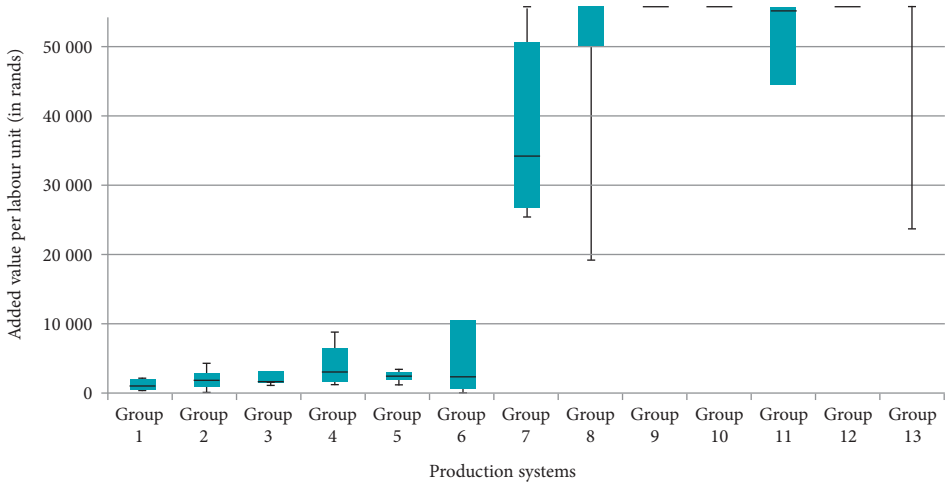
Household income

Figures 4.10 and 4.11 show the levels of agricultural income generated in the study area. They show, in particular, that micro-farmers do not reach the local survival threshold and only manage to generate very low levels of agricultural incomes: from merely hundreds of rands annually per family labour unit in subgroups 1, 2, 3 and 5 (which makes it absolutely necessary for them to find off-farm jobs or to receive social grants), to about R5 000 annually per family worker, on average, for micro-farmers combining staples for self-consumption with vegetables for local markets (subgroup 4).[5]

Small-scale producers of staples and fruits and vegetables for local markets (subgroup 6) are much better endowed in land and assets and they manage to generate an agricultural income of about R13 000 annually per family worker. For all of these producers, agriculture is not the primary activity and income source (it represents only 6 to 15 per cent of the total income), and families engaged in these production systems are all dependent on social grants and off-farm jobs. For micro-farmers, farming is important for food security and is a crucial safety net, but it does not allow poverty alleviation.

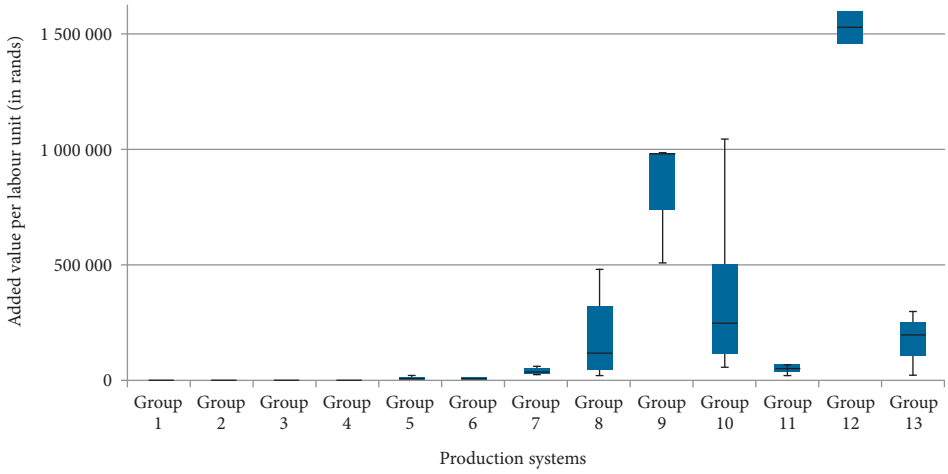
Medium-scale producers specialised in vegetable production who are better endowed in land (subgroup 7) and medium-scale producers specialised in vegetable production for the local and domestic markets (subgroups 8 and 9) are capable of

Figure 4.10 Agricultural income per family worker for production systems 1 to 7



Source: Authors

Figure 4.11 Agricultural income per family worker of all production systems found in the study area



Source: Authors

generating agricultural incomes over the renewal threshold.[6] This means that they manage to live from agriculture and to capitalise from and into agriculture and that, for them, agriculture is more profitable than other job opportunities in the study area.

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Figure 4.11 shows the distribution of agricultural incomes per family worker for production systems 7 to 13 in the study area. As expected, two types of production systems emerge and generate high agricultural income levels: the large-scale commercial producers engaged in high-quality and high value-added tropical fruit production (subgroup 12), and medium-scale producers engaged in specialised vegetable production systems (subgroups 9 and 10), who manage to obtain high levels of land and labour productivity and to generate relatively high (or at least comparable) levels of agricultural income per family worker. Then, production systems which are highly intensive in land (such as the industrial broiler production system of subgroup 13 and specialised vegetable producers of subgroup 8) manage, with different strategies, to obtain comparable agricultural income levels per family worker.

The social relations within these production systems can explain why some farmers manage to obtain high agricultural income per family worker, even if they have not reached high value added per hectare and per agricultural worker. The permanent and temporary workers create more value added than the amount of their salary. Through the low remuneration of the labour force, commercial farmers increase their agricultural income significantly.

Conclusion and perspectives

The results of this agrarian diagnostic conducted in the catchment area of the Nwanedzi River show that the current agricultural situation has a historical legacy of strong discrimination. The evolution of the northern and the southern parts of the study area is interlinked, but while the gap between production systems was extensively widened during previous decades with benefit given to white agriculture, things have not dramatically changed with the implementation of affirmative action programmes, in particular land reform. This is contrary to what one would have expected after the end of apartheid. Owing to limited access to land and water, a large majority of households are still developing production systems for food security on their residential plots in the northern part of the region.

However, it is worth underlining the point that these micro-production systems are mainly implemented by elders, sometimes elderly single women, who are highly dependent on social grants and are often raising their grandchildren, as the parents are employed or seeking jobs in other sectors of the economy as a result of a century of 'de-agriculturalisation' of the region's rural economy. Production systems within the study area still vary significantly, from 1 to 500 (in terms of labour- and land-productivity levels), with the better endowed still being the white large-scale commercial farmers of the southern part of the region, who have benefited from decades of public support. Production systems developed on these farms are still mainly characterised by relatively extensive use of agricultural land (cattle breeders and mango producers).

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This being said, one should emphasise the trajectory of the small number of medium-scale farmers who have managed to obtain high levels of productivity, even though they are still affected by limited access to land and other resource endowments. Some of them are land reform beneficiaries, but it is mostly their insertion into high value chains, sometimes under contractual agreements with processors and supermarkets, that makes the difference. However, these are limited in number and still represent a very small share (1.3 per cent) of the farmers of the study area.

Notes

1 In the district, citrus and subtropical fruits are produced for both domestic and export markets. The district is also known for tomato production (constituting approximately 60 per cent of total tomato production in South Africa).

2 1 morgen = 0.86 hectares

3 From 1977, an embargo on oil was imposed on South Africa with direct implications on the price of agricultural inputs.

4 The survival threshold has been calculated for the area according to data collected during surveys of family consumption. This is minimal expenditure for the basic needs of a five-person family (R8 500/year; €700/year) (see Chapter 10).

5 See endnote 4.

6 The value of the renewal threshold is the opportunity cost of work in the area. We have made the hypothesis that this value is the minimum annual salary someone without qualification can expect in the study area (which is approximately R21 500/year; €1 600/year).

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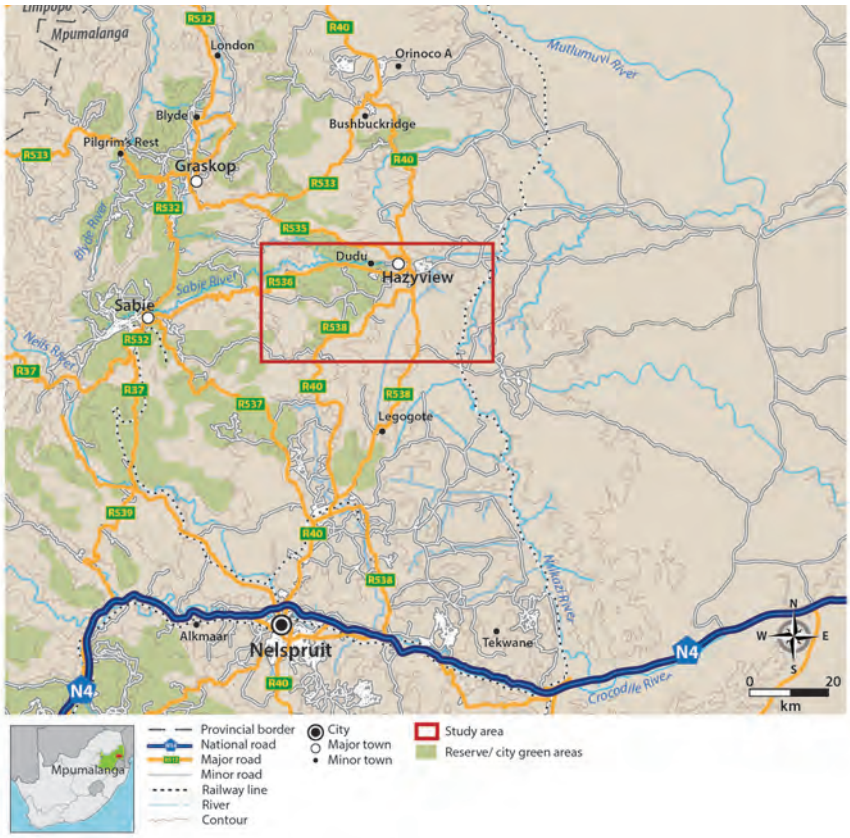
5 *Constrained potential: Intensive agriculture in the Hazyview region (Mpumalanga)*

Hélène Regourd

Study area

The study was conducted in Hazyview's surrounding agricultural area in the lowveld, a region located between the foothills of the Drakensberg and the Kruger National Park (Figure 5.1). The study area was identified taking into account agro-ecological considerations and socio-economic factors (Chapter 3).

Figure 5.1 Location of the study area in Mpumalanga



Source: Google Maps

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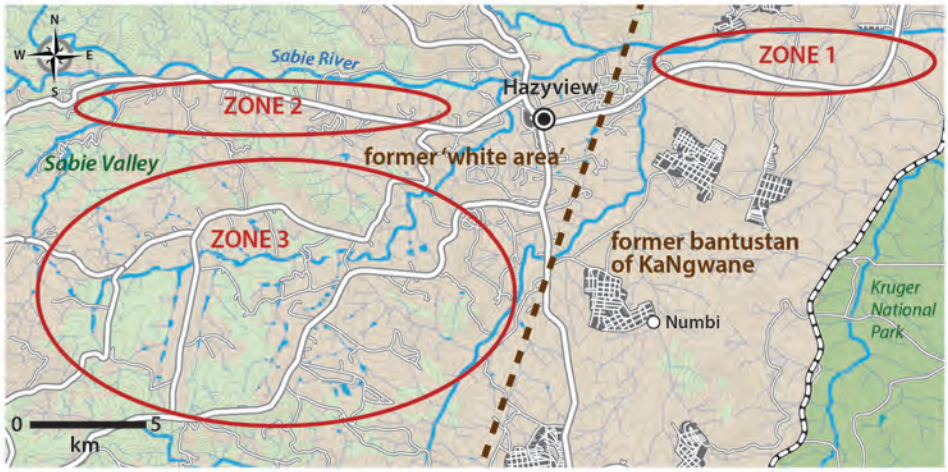
We can distinguish four areas within the study zone (Figure 5.2):

- Zone 1 is located in the former bantustan of KaNgwane, near the Kruger Park. It includes food and vegetable crops, some under irrigation, along the Sabie River and cattle on communal drylands.
- Zone 2 is located in the former 'white area' in the valley of the Sabie River. It is an irrigated area with macadamias, citrus, litchis, mangoes and many touristic attractions.
- Zone 3 is located in the former 'white area' on the Kiepersol plateau. It is an irrigated area where bananas, avocados and macadamias are grown.
- The irrigated area of New Forest is located in the former bantustan of Gazankulu and was established in the early 1960s. It includes food crops and vegetables, some irrigated, comparable to those in zone 1. Moreover, both are in similar climatic and geo-soil zones and are at the same altitude. The study of this area will serve as comparison and will allow a better understanding of the current situation of zone 1.

Regarding the status of the land, three different types of land tenure can be identified:

- white private farms located within irrigation schemes that are subject to land claims but have not been returned yet;
- plots in the former bantustan owned by the Numbi community in zone 1 and by the amaShangaan community in New Forest. They are managed by the tribal authorities, who grant occupation rights to individuals who request it;
- communal land in undivided areas of tribal communities.

Figure 5.2 Map of the study area



Source: Author, adapted from Google Earth

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Agro-ecological characterisation

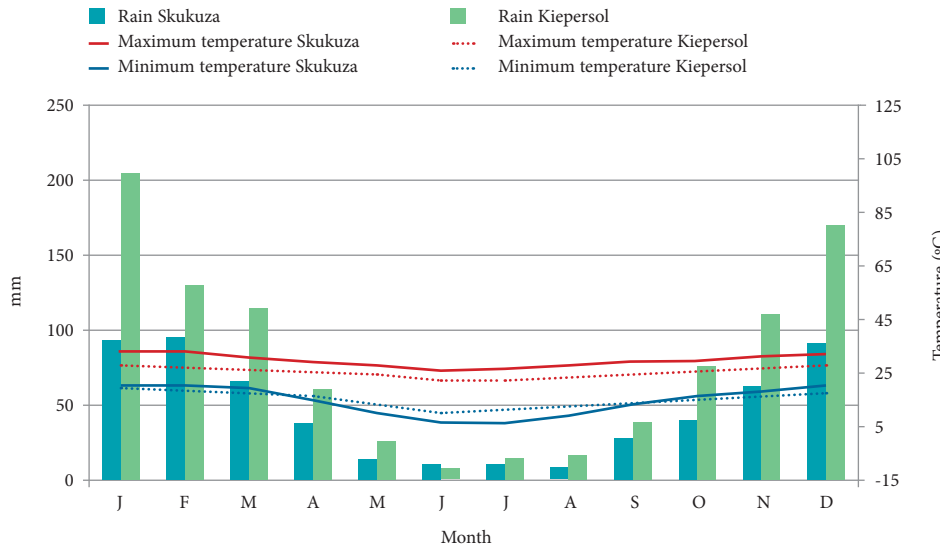
Subtropical climate

The climate is subtropical with different levels of rainfall according to a decreasing west–east gradient (Drakensberg–Kruger). The annual rainfall is between 600 and 1 000 mm (depending on the area), concentrated during the summer. Eighty per cent of the average rainfall occurs during the rainy season, between October and February. As such, the climate is characterised by relatively cold, dry winters and hot, humid summers. In winter, the coldest temperatures do not drop below 0°C, which allows the production of tropical fruits. During the warmest months, temperatures regularly exceed 35°C, resulting in the development of many diseases in both plants and animals. Throughout the year, there are high thermal amplitudes (average 10°C) between day and night, especially marked during the winter (Figure 5.3).

Tropical and subtropical crops

The significant differences in rainfall and temperatures within the study area lead to diverse production patterns. In Kiepersol, temperatures are more temperate, allowing for the production of tropical and subtropical fruits. In contrast, low levels of precipitation in zone 1 and New Forest (water shortages last seven months, from April to October, compared to the five months of May to September in Kiepersol),

Figure 5.3 Ombrothermic diagram of Skukuza and Kiepersol



Source: Agricultural Research Council

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and significant temperature variations between day and night, make the cultivation more difficult and risky. Zone 2 (the Sabie River valley) is intermediate between Kiepersol and zone 1, with rainfall of 800 mm per year and temperatures 2°C warmer during summer, and 2°C cooler during winter, than in Kiepersol. This difference in temperatures does not allow for the production of some tropical fruits, such as banana and avocado.

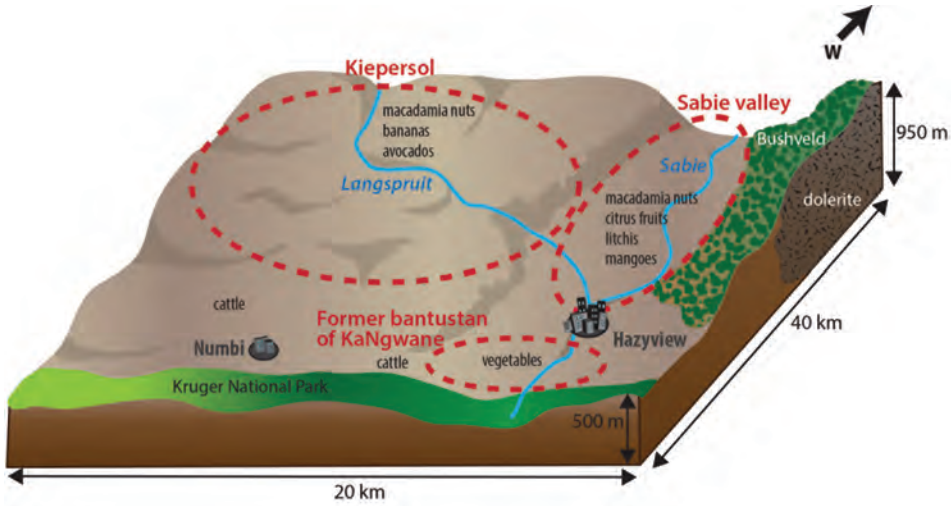
Landscape and river system

The study area is confined in the west by the Drakensberg and in the east by the Kruger National Park. The terrain is undulating and consists of a series of hills with slopes that soften as you move eastwards.

Regarding the hydrographic system, there is a main river, the Sabie, which has its source in the Drakensberg Mountains and flows in a west–east axis across the study area. Two rivers join the Sabie at Hazyview: the Mac Mac further north (not shown in Figure 5.4) and the Langspruit crossing zone 3 (Kiepersol) to the south-west. The Sabie and the Langspruit are essential as they provide irrigation water for most farmers in the area.

The New Forest irrigation scheme is located between the Tlulandziteka and Mutlumuvi rivers, which also have their sources in the Drakensberg. They meet downstream of the scheme, at the small town of Thulamahashe, to form the Sand River. The latter joins the Sabie River in the Kruger Park (Merle & Oudot 2000). The watershed of the Sand River thus belongs to the watershed of the Sabie River.

Figure 5.4 Block diagram of the study area



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Geology and soils

The basement of the study area is composed of granitic rocks with intrusions of dolerite that shape the landscape, ending up in prominent positions. On the granite rock formation, upper soils are shallow and sandy and poor in minerals. The clay particles are driven towards the lower slopes where deeper soils, richer in nutrients, are found. These soils are acidic (pH 4 to 5.6) and have a low water reserve (75–150 mm) (Merle & Oudot 2000). Dolerite intrusions are responsible for deeper soils that are less acidic, well drained and rich in organic matter and minerals. They host a different ecosystem compared to the sandy soils on granitic sand. Between the two, there are intermediate colluvial soils which are rich in clay and organic matter.

River system and hydraulic systems: The different irrigation schemes of the former 'white areas'

Despite the National Water Act (No. 36 of 1998) stating that all irrigation boards had to be transformed into Water User Associations (WUAs) by the end of 2000, transformations did not take place. Unlike irrigation boards, the WUAs should take into account all stakeholders and users, not just the owners of the infrastructure, such as farmers, as is the case in this study area.

White Waters Irrigation Board (Da Gama Dam) – Zone 3

The Da Gama Dam is located in the south-west area on the White Waters River. A canal, 20 km long, irrigates 1 354 ha with a quota of 4 500 m^3/ha/year. As the quota is often insufficient for crops (bananas), most of them have an alternative source of water supply. Farmers own the infrastructure and pay R600/ha/year to the Irrigation Board to ensure the maintenance of the canal (Figure 5.5).

Sabie River Irrigation Board – Zones 1 and 2

The 25-km-long Sabie River canal provides water to all the (white) farmers of the valley and the town of Hazyview. There are 1 250 ha of water rights: 66 for Hazyview town and 260 for the tourism industry, with 42 farmers sharing the remaining 924 ha. The canal is owned by white farmers in the valley, meaning that the town and the tourism industry buy water rights and pay higher fees to the Irrigation Board. The quota is 17 860 m^3/ha/year. Farmers pay R350/ha/year to the Board. As the water quotas have been commodified since 1998, farmers who do not use their entire quota sell the remainder to the municipality or private companies (Figure 5.5).

Farmers in Kiepersol

These farmers irrigate their plots from private dams on the Langspruit. They do not belong to a WUA or to the Irrigation Board. They do not pay for the water used. The

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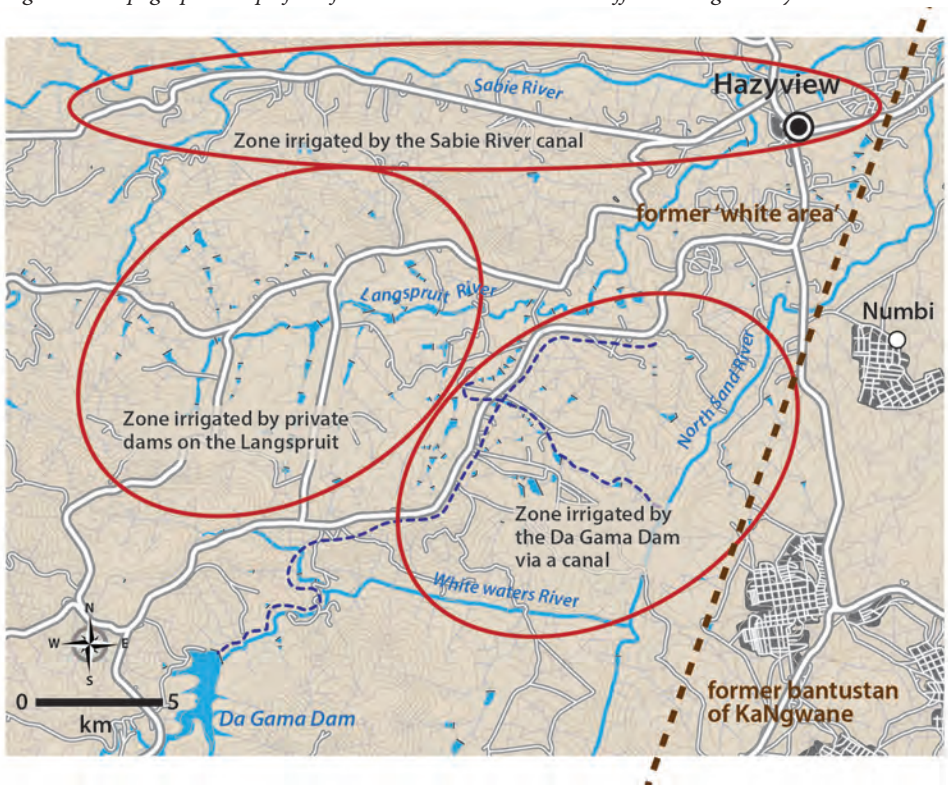
Figure 5.5 Topographic map of the former 'white area' with the different irrigation systems



Source: Author, adapted from Google Earth

only costs of irrigation are the pumps and the energy required to pump water from the dam to the plots.

Box 5.1 New Forest irrigation scheme

New Forest, Dingleydale and Champagne irrigation schemes are part of the infrastructure built by the apartheid government between the 1950s and 1970s (before the creation of the bantustans of Lebowa and Gazankulu) to ensure the food security of black populations. New Forest irrigation scheme was created in 1963 and covers 720 ha and 535 farmers (families). It is located 60 km north of Hazyview.

The scheme works using gravity irrigation. This system had the advantage for the apartheid regime of being cheap (in both implementation and operation – zero energy). However, this system requires a significant labour force for the maintenance of canals. New Forest, which belonged to the Gazankulu bantustan (Shangaan ethnic group) during apartheid, is under the supervision of the amaShangaan tribal authority.

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History

The first populations arrived in the 'lowveld' about 2 500 years ago after the great migrations. These Bantu-speaking populations, originating from the Great Lakes region, brought with them their livestock, farming techniques and iron-working abilities. Farmers were engaged in food crops associated with pastoralist cattle activities. Black people now living in the study area descend from two main ethnic groups: the Swazi and the Shangaan who fled Zululand during the Difaqane in the 19th century (Delius 2007).

From the 19th century until the end of World War II

The study area was known as an important crossing area, although it was infested by tsetse flies during the day and mosquitoes and lions at night. Hence, the lowveld was also a region that had only been relatively recently colonised by Europeans. The Voortrekkers first arrived in the late 1830s and established the Transvaal Republic (ZAR/Zuid-Afrikaansche Republiek). A few years later, with the discovery of gold on the Witwatersrand, a 'gold rush' was initiated, establishing a road system between the Lebombo Mountains and the mines.

In 1855, Transvaal Volksraad Resolution 159 prohibited all non-Afrikaners from holding title to land. The government of the ZAR encouraged land use by allocating concessions of 3 000 morgen to prospectors in charge of infrastructure development and securing the land for the Afrikaners.[1] As such, the Kiepersol area (zone 3) became the property of a handful of landowners in the late 19th century. However, as few were physically present, black populations continued to exploit these lands. Until the early 20th century, the lowveld attracted few white farmers, as they preferred to stay at higher altitudes where cattle suffered less from the scourge of tropical diseases. After the Anglo-Boer War (1899–1902), these major concessions were then subdivided into smaller plots and sold to Afrikaner war veterans (Bornman 2004).

At that time, hunting thrived in the area, with the wildlife declining rapidly. Under the leadership of President Paul Kruger, a reserve for wildlife was created near the Sabie River in 1898. Many others followed and subsequently the Kruger National Park was formed in 1926. The government expelled the (mainly black) people from the protected areas and prohibited hunting. In 1912, a railway line was developed to bring the first tourists to the Sabie Reserve and to the Kruger National Park.

Later on, the Land Act of 1913 divided the country into black and white areas and the Trust Land Act of 1936 further reduced the rights of black people. However, these laws had no impact in the area at that time; the effective dispossession only took place after the World War II.

In 1943, the Transvaal Consolidated Land and Exploration Company purchased all the land of the area and resold it (after ensuring that there were no valuable minerals) to those wishing to exploit these lands. According to the Labour Tenancy Act, black

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people who wanted to stay on the land had to work for a white owner. In exchange, they could keep some livestock and grow a small garden on the white owners' lands. However, besides some eucalyptus plantations that provided timber for the mines, most of the Kiepersol area and the entire valley of the Sabie River (zones 1 and 2), which belonged to the government, remained fallow at that time.

1950–1970: 'White farming' boom, forced removals and creation of irrigation schemes

Boom of white 'commercial' farming after World War II

With the eradication of malaria and the allocation of land to former soldiers (55 ha plots, on average) after the World War II, white occupation increased. Within the framework of government's support to (white) agricultural development, farmers built a canal and water storage reservoirs (reservoirs and dams on the Langspruit) and started to plant tobacco, citrus, litchis, mangoes and tomatoes. In addition, a railway line allowed goods to be transported to the Johannesburg fresh produce market and a labour system was established within a 100 km radius.

Although tobacco remained the dominant form of agriculture in the valley until the 1970s, bananas were planted and grew in importance from the early 1950s. Kiepersol even became the most important banana-producing region of the country between the 1960s and 1980s. Farmers generally started with one cycle of vegetables before integrating banana production in order to generate cash. In the 1960s, however, the Panama disease appeared and farmers began, from the end of the decade, to replace disease-affected plots with avocado.[2]

Black farmers confined into homelands without irrigation

Resulting from the implementation of the different racial laws, black farmers were forcibly displaced into reserves. The population density remained relatively low, however. Few people lived in the area when the white settlers arrived, mainly because of persisting malaria and wild animals. Most of the land was used by cattle farmers from Lydenburg during the winter, and a few houses with small gardens dotted the area.

By then, the development of reserves was based on the 'betterment plan' and the 1955 report of the Tomlinson Commission (see Chapter 1). The betterment plan aimed at organising reserves into three distinct geographic areas: residential, grazing and cultivation areas. People were forced to gather into villages; the communal grazing lands were exclusively reserved for raising and breeding livestock and collecting building materials and firewood; and the drylands were closed off, with only small gardens often less than 200 m^2 being tolerated. In addition, cattle grazed the slopes and roadsides during the day and were gathered overnight in kraals. Droppings were

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collected and spread on cultivated areas. Residential locations were too small to keep large herds and the quasi cultivation ban made the livelihoods of families difficult.

Black farmers confined into homelands with irrigation

The Tomlinson Commission report recommended that the government build surface irrigation systems and allocate plots ranging in size from 1 to 1.5 ha. The government's goal was to sustain families while fixing them on a territory knowingly and strategically defined, close to industrial and mining centres (see Chapter 1). As such, the New Forest irrigation scheme was built in 1965 (720 ha and 535 families). Families had to have less than five head of cattle to qualify for an irrigated plot. Production was managed, organised and supervised by the state and by the Agriculture and Rural Development Corporation.

The arrival of irrigation put an end to mixed farming (agriculture/breeding). A new system of polyculture (food and vegetables) developed that utilised tractors, chemicals and two growing seasons per year with limited breeding, all under state control. The seeds of the current crisis are rooted in this period.

From 1970 to the end of apartheid

Creation of bantustans and explosion of the population density

The 1970s were characterised by fast population growth for several reasons. Firstly, when the KaNgwane bantustan was created in the early 1970s, the borders of the Kruger Park were modified following the enlargement of the bantustan and forced displacements were accelerated. Secondly, each bantustan was assumed to be ethnically based and populations were forcibly displaced from white areas to bantustans, as well as from one bantustan to another. Thirdly, from 1970, the country experienced a severe economic crisis, partly due to international boycotts. Many industrial and mining centres closed and the workers had no choice but to go back to the countryside. At the same time, Mozambican refugees found refuge in the area. These changes resulted in a significant increase in the population density, and subsequently in the size of villages and the pressure on pastures, which often led to an overgrazing crisis.

Many farmers lost their livestock and were forced to abandon raising and breeding activities. This crisis associated with massive unemployment threatened the survival of numerous families in the region. In order, among other things, to maintain calm and order in the community, the then tribal chief gave each family a permission to occupy (PTO). Plots ranged in size from 2 to 10 ha. Some of the land remained available to all members for livestock grazing and collecting firewood. However, because of the lack of technical and financial resources, most only managed to plant 0.5 to 1 ha of food crops (maize, squash, peanuts and beans), which were mainly self-

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consumed or sold in the community (it was forbidden to sell outside the homeland at that time).

Modification of the production systems

Owing to phytosanitary issues and related to price collapses, tobacco was no longer profitable at that time. Farmers turned extensively to other crops (ginger, vegetables, citrus, litchi and mango) and to the tourism industry. At the same time, Coca Cola – looking to secure its juice provision – gave out contracts for citrus, resulting in many people turning to citrus production. In the early 1970s, with the onset of cultivation of the Fuerte avocado variety (with superior fruit preservation), avocado exports to Europe increased despite international boycotts. In fact, prices rose significantly and plantations, which require less labour, became very competitive without causing real changes in equipment (Figure 5.6). In Kiepersol, the cultivated area increased significantly (an average 100 ha per farmer in the 1980s).

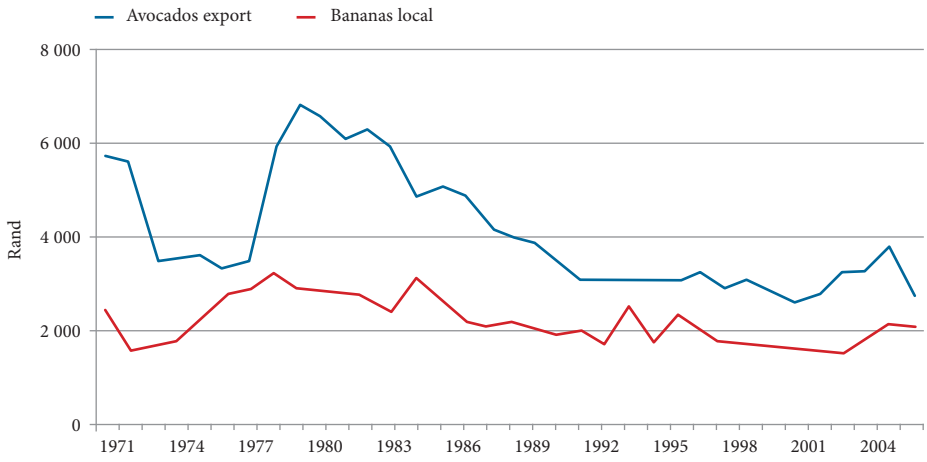
Since the early 1990s, greening disease has infected most of the citrus in the valley and Panama disease has infected the bananas in Kiepersol. Farmers then turned to macadamia nuts, both in the valley and in Kiepersol.

The situation since 1994

Tourism boom and explosion of macadamias

With the end of apartheid and the explosion of international tourism, the tourism industry has grown significantly in the valley mainly because of its proximity to the

Figure 5.6 Evolution in constant rand of avocado and banana prices



Source: Author, based on 2014 data from FAOSTAT

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Kruger National Park (12 km from Hazyview), but also because of its low soil fertility (very sandy), very high pest pressure and an unfavourable climate (less favourable than Kiepersol) for tropical and subtropical crops (bananas and avocados). Some local farmers switched to serving the tourism industry, but – related to the exploding property prices and the numerous land claims that have covered the entire valley since 1996 – it has mainly resulted in many farms being sold to foreigners (Europeans and Zimbabweans). The number of agriculturally productive farms decreased and the number of multi-active farmers grew exponentially from 1990 to 2000.

This being said, farmers kept investing in agriculture, despite the land claims. Macadamia became the dominant form of agriculture in the valley. All farmers (with the exception of some multi-active ones) extended their macadamia nut plantations at the expense of citrus, mangoes and litchis, the prices for which had become highly volatile and had been declining since South Africa's liberalisation and price deregulation. In Kiepersol, all disease-affected plots were replanted with avocados and macadamia; the banana plantations stabilised.

The major impact of these transitions is related to the loss of employment opportunities. Indeed, the development of the tourism industry and the continuous growth of macadamia production led to the number of permanent jobs decreasing significantly.

Access to irrigation in the former bantustan ...

In the former bantustans, vegetable production on a small scale is ongoing in the irrigated areas. Nelson Mandela's government, in order to reduce social inequalities, provided farmers with equipment (tractors and ploughs), technical advice and training. However, these government services are mostly technically on hold, leading to field preparations being done by private service providers and to the use of chemical fertilisers and phytosanitary products at high doses.

Even if farmers do not have marketing contracts, market access is relatively easy because of the proximity to Hazyview and the tourism in the area. Almost all of the production of these farmers is sold; only maize is self-consumed by families. Vegetables have changed with cabbage, tomatoes, peppers and beetroots presently being produced.

Since 2005, farmers have benefited from surplus water from the canal in the valley. Although the quantities available are far from adequate, this allows black farmers to achieve two cycles of vegetables per year.

… but the distribution of water resources remains very unfair in the study area

White farmers in the valley use only 5 to 50 per cent of their average quota (17 860 m^3/ha). The surplus is redirected to the river, leaving Kiepersol and zone 1 downstream with insufficient water (even though the macadamias and citrus

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generally require less water). However, as the Irrigation Board only pays for 5 300 m^3/ha/year, the amount theoretically necessary to irrigate crops in the valley, none of the additional water is redirected.

In 2005, at the request of the Department of Agriculture and Water Affairs and after long negotiations (through non-governmental organisations) with the Irrigation Board, a reservoir was built by the government to store the excess water from the canal and allow farmers downstream (zone 1) to have access to irrigation. But the amount of water available is not sufficient for the ninety-five downstream farmers who each have 15 ha, on average. As a result, presently, farmers only grow 3 ha, on average. According to the contract, this represents only a surplus and not a right as it is not a WUA but still an irrigation board, according to which downstream users still have no rights.

Failure of land reform projects, lack of agrarian transformation and maintenance of a post-apartheid agricultural segregation

In the study area, although almost all white farms are under land claims, only one farm of 450 ha of bananas has been restituted (in 2000) in the southern area of Kiepersol (Burgher's Hall). The restitution of this farm failed, however. When the 450 ha were returned to an entire community – several hundred people with their own interests – production collapsed and equipment was stolen. In addition, the new farmers lacked financial resources and necessary skills to develop and run such a farm. Also, the R95 million that the government promised the community to continue the operation and maintenance of the plantation was never seen. Subsequently, less and less people continued to work on the farm and the land is no longer used. The land will soon be leased to a private investor.

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Description of the different production systems

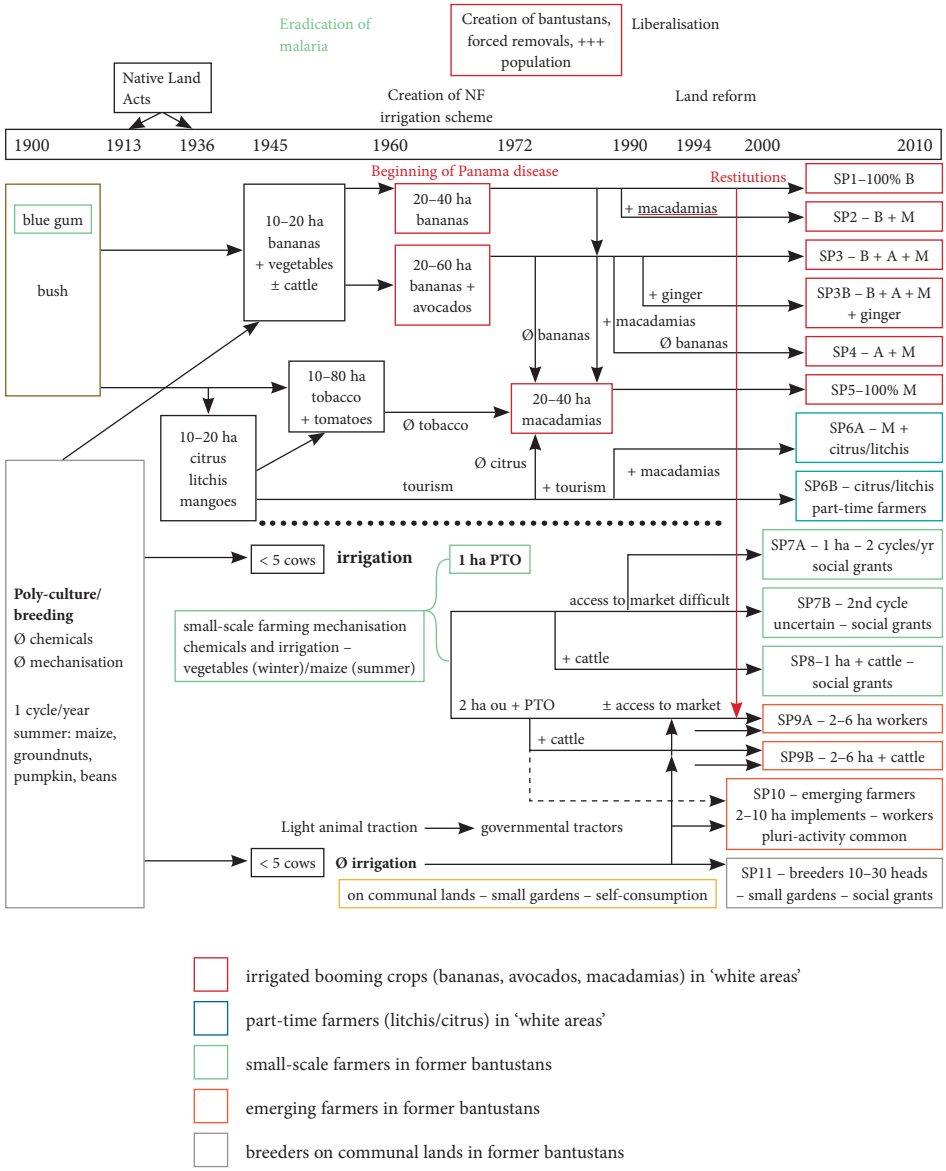
The above-presented evolutions and trajectories led to the identification of fifteen production systems presently existing in the region (Figure 5.7). For the purpose of this chapter, only eight of them will be discussed here. The others are variants of the latter.

White irrigated farming

Farms producing bananas (PS1, as well as variant PS2)

Bananas are cultivated on the top of Kiepersol, generally on slopes facing north due to the better soil quality as well as the warmer temperature. Banana trees are grown for ten to twelve years on the farm. All plants are irrigated with individual micro-sprinklers.

Figure 5.7 Historical trajectories of the different production systems



Note: NF = New Forest
Source: Author

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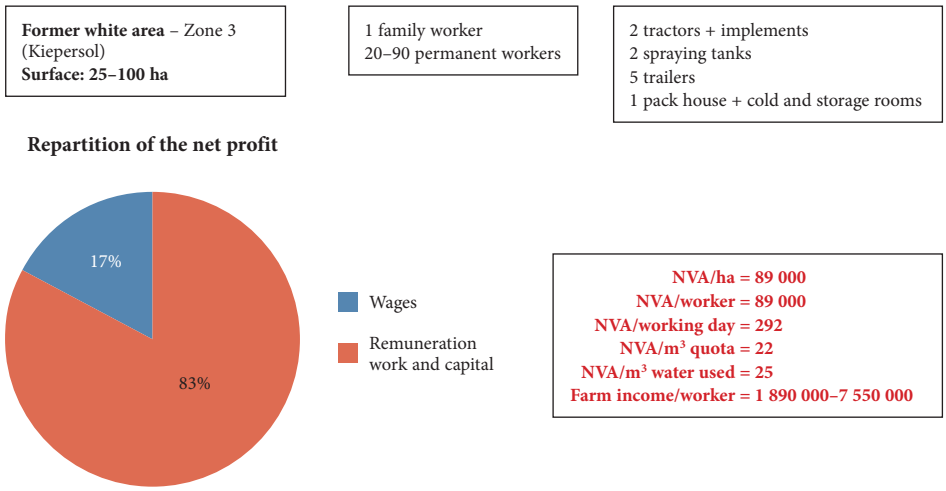
All labour is permanent (1 employee/ha) and the harvest is all year long, even though 70 per cent of fruits are harvested during the summer. In order not to use temporary labour, fieldwork (excluding harvest) is realised as much as possible during winter. The areas in this category range from 25–100 ha/family worker. Although banana production is very labour intensive, employee wages represent only 17 per cent, on average, of the net value added.

Bananas have been grown since the 1960s, and no other crop had been established there before. All farmers package their production and store it in cold rooms; only two do the ripening and the transportation of their production.

The characteristics of the production system are summarised in Figure 5.8.

This production is declining, partly because of Panama disease, but also because it is very labour intensive and difficult to manage (compared, for example, to the cultivation of macadamia nuts, which is as profitable). However, bananas produce all year long and farmers have continuous cash inflows, unlike with other produce. In Kiepersol, Panama disease was suspected in the late 1960s and confirmed in 1974. Many farmers have replaced their diseased blocks with other produce (initially with avocados, later with macadamias – PS2).

Figure 5.8 Farmers producing bananas under irrigation (PS1) (in rands)



Note: NVA = net value added
Source: Authors

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Farms producing avocados, macadamias and bananas (PS3A and variants PS3B, PS4, PS5)

This type (PS3A) evolved from farms that were affected by Panama disease in the 1970/80s. The farmers then planted avocado trees to replace disease-affected banana trees. From the 1990s, they replaced the diseased plots with macadamias.

Although avocados were introduced into South Africa by Indians during the 17th century, their development and export really started in the 1920s with the Fuerte variety, which allows for longer fruit preservation. The number of ha under avocado greatly increased in the 1970s when a marketing agency was created, replacing disease-affected bananas. In the early 1990/2000s, Kiepersol was producing 20 per cent of South Africa's avocados. Once harvested, fruits are immediately taken to the pack house (no farmer has his own pack house) where they are sorted according to size and quality.

Since the 1990s, however, avocado production has stagnated and bananas are now mostly replaced with macadamias. The first macadamia trees were planted in the area about forty years ago but the real boom began in the late 1990s. Today, 90 per cent of farmers in the Sabie River Valley and 75 per cent of farmers in Kiepersol cultivate macadamias. Since 2004, the South African macadamia market has grown, especially with exports to China. Macadamias are produced according to different production systems and are becoming increasingly important. Prices are high (R3.5/kg, on average, paid to the producer) and it is a much less labour-intensive crop than bananas or avocados (1 worker/3 ha). However, like any perennial crop, it requires a large initial investment (plants and equipment) and liquidity, only entering into production from the fourth year (0.5–1 ton/ha) and into full production from the seventh year (4–6 tons/ha). The harvest requires temporary workers (1 worker/2 ha for two months). Because it is a very undemanding tree, macadamias are usually located on the less fertile, sandy soils of the lower slopes. The characteristics of this production system are summarised in Figure 5.9.

Part-time farmers (PS6A and variant PS6B)

These farmers are located in the Sabie River Valley and have smaller farms (5 to 40 ha). Most of them settled recently in the valley (in the 1990s) and bought small farms producing citrus and litchis. They cultivate fruit trees and have developed tourism activities on their properties (e.g. lodges, sport facilities). In a context of significant macadamia growth and having the money to invest in new plantations, they replaced parts of their orchards with macadamias and have invested in the necessary processing infrastructure. The characteristics of this production system are summarised in Figure 5.10.

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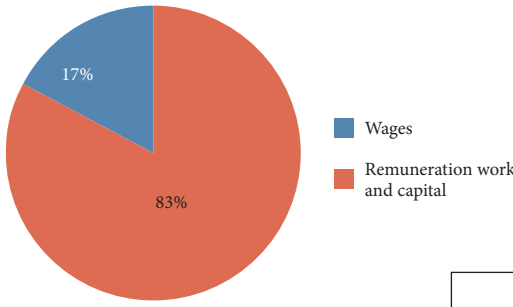
Figure 5.9 Farmers producing bananas, macadamia nuts and avocados under irrigation (PS3A) (in rands)

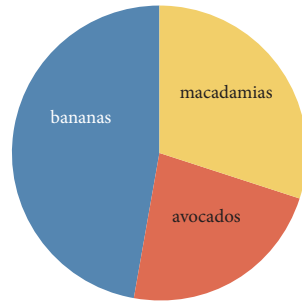
Former white area – Zone 3 (Kiepersol)
Surface: 80–120 ha
Panama disease

1 family worker
25–60 permanent workers
10–30 temporary workers to harvest nuts and avocados

2 tractors + implements
2 spraying tanks
5 trailers
1 pack house + cold and storage rooms
1 dehusker + 1 dryer

Repartition of the net profit





NVA/ha = 82 100
NVA/worker = 69 500
NVA/working day = 334
Farm income/family worker = 3 820 000–7 645 000

Note: NVA = net value added
Source: Authors

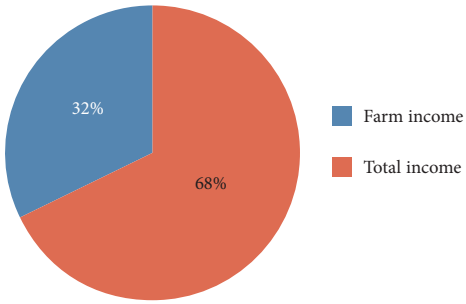
Figure 5.10 Part-time farmers producing macadamia nuts and citrus/litchis under irrigation (PS6A) (in rands)

Former white area – Zone 2 (Sabie River Valley)
Surface: 10–40 ha

1 part-time family worker
5–15 permanent workers
20–80 temporary workers for the harvest

1 tractor + implements
1 spraying tank
1 dehusker + 1 dryer
1 pack house

Repartition of the net profit



NVA/ha = 84 000
NVA/worker = 35 000
NVA/working day = 307
NVA/m³ quota = 5
NVA/m³ water used = 17
Farm income = 730 000–2 900 000

Note: NVA = net value added
Source: Authors

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Small-scale farming with access to irrigation in New Forest (PS7B and PS8)

These farmers have access to irrigation water, although only in theory and in a differentiated manner. Indeed, following the relaxation of the control and management of the infrastructure by the state after the 1980s, the irrigation scheme has become damaged. In addition, some people breach canals to irrigate their plots on the drylands, making the entire system rather unpredictable. As such, farmers upstream usually do not lack water and can do two cycles per year (if enough cash is available to pay for inputs), while those located downstream lack water most of the time and cannot always engage in a second cycle.

Government tractors and other equipment necessary for tillage are available, again in theory, for farmers in former bantustans. The problem is that they are often not operational – broken down, no fuel, no driver – and, when they are, there are significant waiting lists. Because oxen disappeared from the area when the scheme was created, farmers work their land by hiring service providers, who are usually other farmers. Their relatively high prices slow down the development of these farmers. The permanent workforce is based on family labour and temporary workers help to weed and harvest a few days per month.

One-hectare plots are divided into twelve blocks, which are farmed separately in monoculture with massive use of chemical fertilisers and pesticides. Maize, grown in summer, is mainly reserved for the household. Winter crops (vegetables) are almost entirely sold on the local market through resellers as these farmers do not have access to marketing contracts.

There is little prospect of employment for New Forest inhabitants who are distant from any source of activity. Families live primarily on social grants and migrant labour income. Indeed, their incomes from agriculture do not allow them to make a living, mainly related to their high production costs (rental tractor, inputs).

Production System (PS) 7B is summarised in Figure 5.11. These farmers received one hectare initially under PTOs; however, they do not use it all. They are located further downstream and have uncertain access to water during the dry season, so they often cannot carry out a second cycle of cropping. Their income levels are very low so they cannot take the risk of losing their production. They often do not have sufficient cash to pay for services to work their entire plot. They are all very dependent on social grants.

Farmers in category 8 (the main characteristics are summarised in Figure 5.12) set up the same cropping systems, which they complement with a herd of five to thirty head of cattle acquired after the 1980s. Livestock is mainly used as capital and to pay lobola. One male is sold every two years, on average, representing little farm income. The livestock graze the communal lands during the day and are kept in a kraal at night. The manure is collected and spread on fields. Chemical fertilisers are used, as with type 7B.

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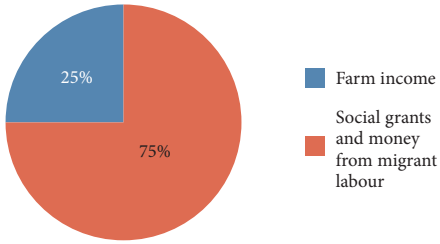
Figure 5.11 Farms with less than 1 ha under irrigation and depending on social grants – 2nd cycle uncertain (PS7B) (in rands)

Former bantustan (New Forest)
Surface: 0.5–1 ha
Corn and some vegetables (summer)/±vegetables (winter)
5–15 chickens

1–2 family workers

Hoe
Back sprayer
Hire tractors
Chemical fertilisers and pesticides
Commercialisation on the local market (by the road)

Farm income in the household



NVA/ha = 18 500
NVA/worker = 9 250
NVA/working day = 49
Farm income/family worker = 6 500–19 250
Total income/household = 25 000–40 000

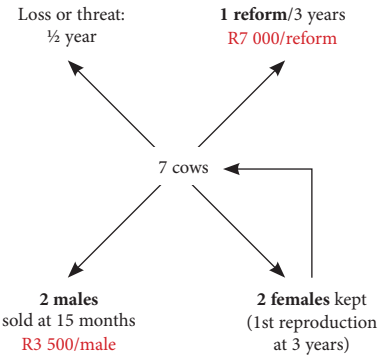
Note: NVA = net value added
Source: Author

Figure 5.12 Farms with less than 1 ha under irrigation and depending on social grants, with a herd of cattle on communal lands (PS8) (in rands)

Former bantustan (New Forest)
Surface: 0.5–1 ha
Corn (summer)/vegetables (winter)
3–10 cows on communal land
chickens

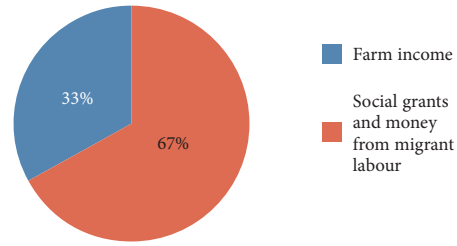
1 family worker
1 cowherd
1–2 temporary workers for weeding and harvesting

Hoe
Back sprayer
Hire tractor
Chemicals, fertilisers
Commercialisation on the local market (by the roads)



GP breeding = 3 500–10 000

Farm income in the household



NVA/ha = 44 000
NVA/worker = 14 650
NVA/working day = 55
Farm income/family worker = 15 500–30 000
Total income/household = 35 000–55 000

Note: GP = gross product, in rands
NVA = net value added
Source: Authors

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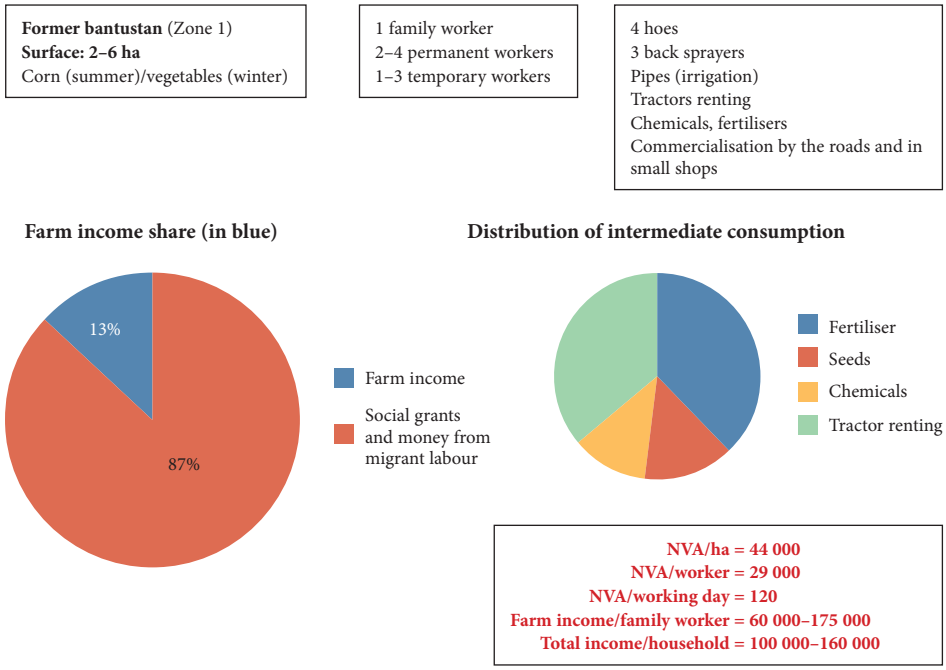
'Emerging' and 'entrepreneurial' farmers (PS9A, PS9B, PS10)

Unlike the previous types, these farmers have no land constraints. They received between 10 and 25 ha under PTOs, but only farm between 2 and 6 ha. They can potentially expand their cultivated acreage. They typically set themselves up as farmers after the 1970s when the boundaries of the Kruger Park were changed, but they mostly developed after 2005, when they received access to additional water. They set up the same cropping systems as the previous types, but have easier access to the market owing to the proximity of Hazyview. They do not have contracts with supermarkets, but are able to sell their produce in small shops in town and by the roadside. They have employees and use service providers when they do not have the equipment for tillage work. This is the case for type 9A, summarised in Figure 5.13.

Type 10, summarised in Figure 5.14, are farmers who had, or still have, another form of activity that allowed or still allows them to accumulate capital. They invest this capital into agriculture and possess a higher level of mechanisation (motorised equipment) and a more sophisticated irrigation system (sprinkler and drip irrigation, unlike other farmers who have flood irrigation systems). There are different types of farmer-entrepreneurs in this type: some have planted bananas and macadamias,

Figure 5.13 Two- to six-hectare farms, irrigation with two cycles of crop/year (PS9A) (in rands)



Note: NVA = net value added
Source: Author

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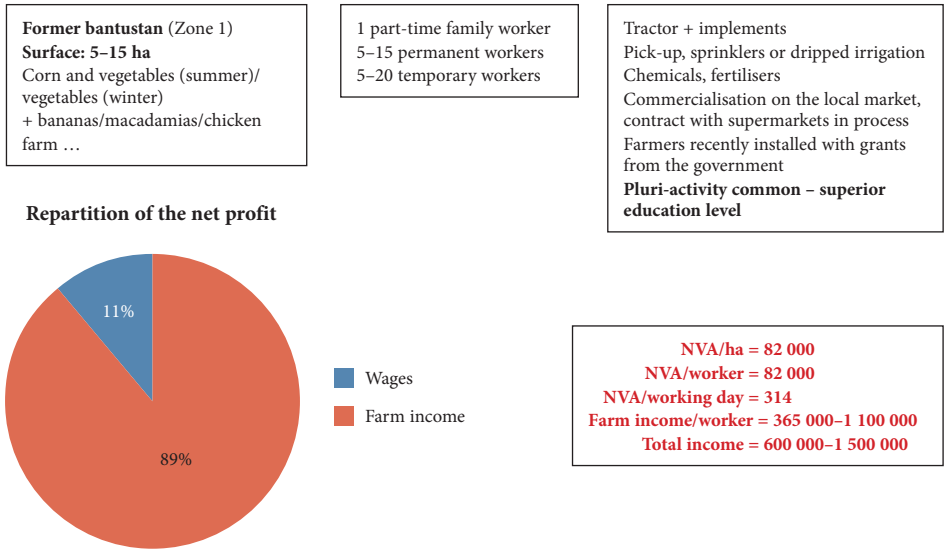
Figure 5.14 Farmer 'entrepreneurs' (PS10) (in rands)



Note: NVA = net value added
Source: Author

while others operate an intensive chicken farm. It is thus difficult to model PS10 as they all have different systems of production. Their common feature, however, is that they all received funds from the government for the construction of poultry houses, the purchase of trees, the development of irrigation systems and so on. They all retain permanent and temporary workers and are service providers (they rent their equipment to farmers of the above types).

Breeders/raisers on communal land (PS11)

There are numerous breeders/raisers (PS11) in the surrounding villages. Cattle and/or goats graze on common land during the day and are kept overnight in kraals. The manure is used to fertilise home gardens and some is sold. Home gardens are exclusively hand-cultivated on 50 to 150 m^2 plots. Owing to the severe water deficit and the lack of irrigation, plants (corn, beans, butternuts, peanuts) are grown during the rainy season only. They also cultivate fruit trees (mangoes, avocados and bananas). All crops are intended for family consumption. They also have a few chickens (10 to 20) which are for their own consumption. The animals are sold in cases of hardship. They are used as capital and to pay lobola. This type is very dependent on social grants and income from migrant labour (Figure 5.15).

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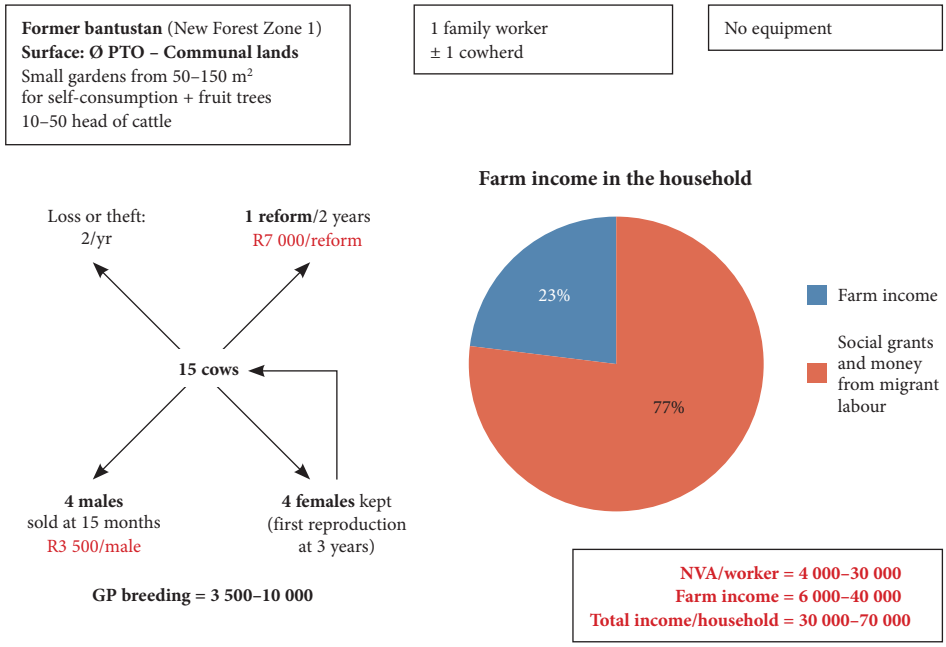
Figure 5.15 Breeders on communal land (PS11) (in rands)



Note: GP = gross profit (in rands)
NVA = net value added
Source: Author

Comparison of production systems

Comparison of net value added (NVA)

As agriculture is not very mechanised in the area, even among white farmers, the land per active worker is almost constant for a given production system, as shown by the NVA/ha and NVA/worker for each system (Figure 5.16).

Figure 5.16 shows that the diversity of value created varies significantly (a factor of 1 to 5) from one production system to another. The system that provides the most value added per hectare is PS3A (production of bananas, avocados and macadamia nuts). Systems that generate the least value added are found in the former homelands and particularly in New Forest. Indeed, while PS7B farmers have little production owing to the chronic lack of irrigation water, their inputs (such as rental of tractor and purchase of inputs) are proportionately very important, which greatly reduces the value created. Smaller farmers who have a greater capital endowment (PS10) reach value additions per hectare and per active worker that are comparable to 'white' production systems.

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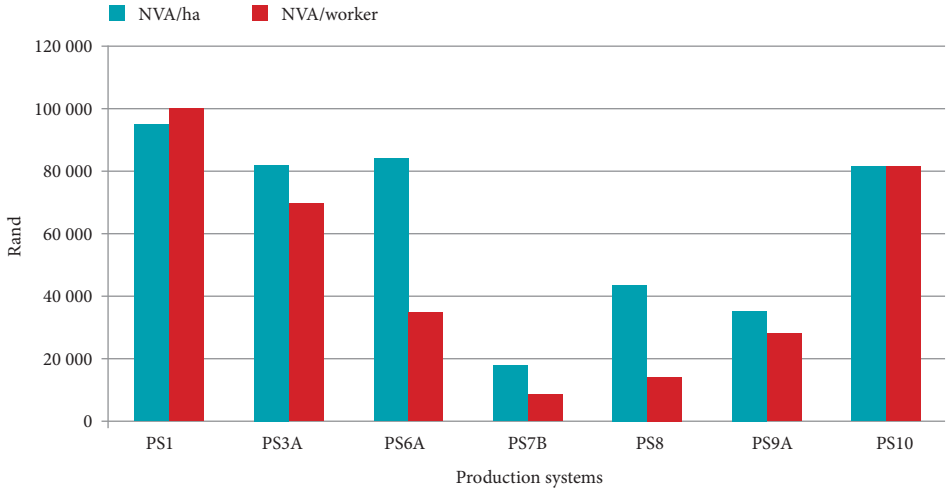
Figure 5.16 Comparison of NVA/ha and NVA/worker for the different production systems



Source: Author

In systems that employ a large seasonal workforce, it is more interesting to study the value added per working day than per active worker. Figure 5.17 shows that differences in productivity of systems vary from R49 per working day for the PS7B

Figure 5.17 NVA per day of work generated by the different production systems

Note: NVA = net value added
Source: Author

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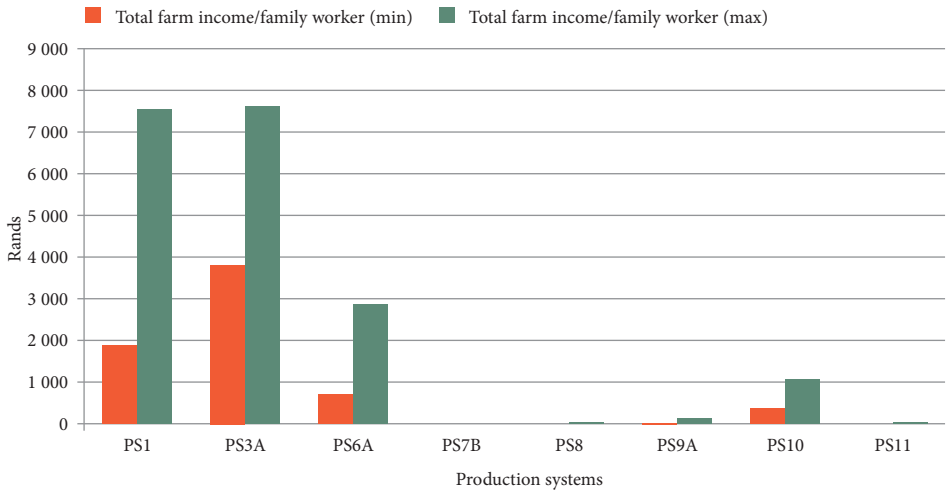
(1 ha of gardening/horticultural production during the rainy season, one crop cycle/year) to R334 per working day for PS3A (i.e., a factor of 1 to 7). Indeed, macadamia production is less intensive in labour and inputs (one permanent worker for 3 ha and one seasonal worker per 2 to 3 ha during two months to harvest nuts and fell trees). However, some systems found in New Forest have a very low value added per working day. Types PS7B and PS8 do not generate enough value to be able to use employees as the NVA/worker is below the minimum wage (R50/day – as the unemployment rate exceeds 70 per cent in the area, labourers are almost always paid below the minimum wage).

Comparison of the net farm income (NFI)/family worker

What is most striking when the net farm income (NFI) is considered (Figure 5.18) is the farm income differences between production systems and particularly between white and black farmers. Farm income varies from R6 000 to R7.65 million per family worker (factor of nearly 1 to 1 275). All previously established farmers have very high farm incomes (except for multi-active farmers in PS6A, who have other sources of income) that allow them to enjoy a very high standard of living (villas, aeroplanes, etc.).

Black farmers with significant capital endowments (PS10) have much higher farm incomes than the other black farmers. Farmers from New Forest (PS7B, 8), who have the lowest farm incomes, live around the survival threshold estimated at R17 500 per household per annum (estimation based on two parents with three children).

Figure 5.18 Comparison of NFI/family (all production systems)



Note: NFI = net farm income
Source: Author

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Conclusions and prospects

Despite the end of apartheid and the government's efforts to reduce inequality, the gap between black people and white people does not seem to be reducing and the effects of past segregation are still very visible in the landscape of the Hazyview region.

On the one hand, white farmers thrive thanks to the exceptional benefits received in the past, good soils and climatic conditions, and a shockingly cheap labour force. They continue to invest, although almost the entire region is under land claims. The number of ha of bananas has decreased in favour of the cultivation of macadamias, which are less labour intensive, more manageable and equally lucrative. Citrus and litchi production is also decreasing for the same reasons and prices are very unstable. Many invest abroad, especially in Mozambique, in large plantations or buy farms in other parts of the country to spread risks.

On the other hand, black farmers who are in drier areas, on more sandy soils and who do not always have access to water despite the existence of irrigated schemes, are unable to organise themselves and are dependent on social grants and incomes from migrant labour. They grow vegetables and sometimes have some livestock grazing on communal lands, mainly for their own consumption purposes. Irrigated plantations require an exceedingly important initial investment.

Indeed, although farmers downstream of the Sabie River Valley have seen their situation improve since the extension of the irrigated area in 2005, the water quantities available are far from sufficient and the lack of well-defined water rights limits the areas under cultivation and slows down the agricultural development of this area. The white farmers upstream benefit from better soils, better climatic conditions and from abundant irrigation water. The greater part of their water quota is even 'wasted' as it goes directly back to the river. Although the river ecosystem is fragile and the downstream farmers could theoretically pump water, security issues such as pump theft and the current high cost of energy deprives them of it. The revision of water quotas, the creation of a WUA covering all users, and the construction of a new canal or a secondary channel collecting excess water all seem necessary for improving the living conditions of downstream farmers.

Furthermore, because the quantities produced individually are not significant enough and are irregular, and since producer organisations are non-existent, farmers from former homelands are unable to access marketing contracts. Collective action between farmers is combined with the inability to organise themselves – a direct result of decades of racial and spatial division and segregation. Notwithstanding the fact that the country has chosen the path of liberalisation, farmer support has largely disappeared, infrastructure is decaying and agricultural extension and technical support (government tractors and the like) are almost non-existent.

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While the mode of land tenure in the former white area is secure, the nature of the existing land rights in the former homelands is a serious hindrance to the development of agriculture in these areas. The problems of corruption within the government in general, and in tribal authorities in particular, are an additional obstacle to the development of the country and especially of the 'black areas' (the beneficiaries of grants, advice and government services are not always those who are the neediest).

It is worth noting, however, that a class of farmer-entrepreneurs has emerged over the last decade. They are often multi-active, educated persons who possessed initial capital that they invested in agriculture. They received assistance from the government and today generate sufficient income from farming.

Notes

1 1 morgen = 0.86 ha

2 Panama disease is caused by *Fusarium oxysporum* f. sp. Cubense, a fungus that blocks the conducting vessels of the plant. No variety is resistant to the type 4 mutation in this area.

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6 *Unequal access to means of production and agrarian trajectories: An agrarian diagnosis of the Kat Valley (Eastern Cape)*

Patrick Quinquet de Monjour and Jérôme Busnel

This chapter focuses on the agricultural activities in the Kat River Valley, stretching on both sides of the former border between white South Africa and the Ciskei bantustan, around 250 km north-east of Port Elizabeth (Figure 6.1). Overall, the landscape of the area comprises open grasslands dotted with shrubs, dedicated mainly to extensive stock raising.

Different ecosystems form the Kat River Valley

The boundary between the inland plateau and the coastal plain is the Great Escarpment, a range of mountains that crosses South Africa. The escarpment's slopes are traversed by many tributaries, whose confluence gives rise to the Kat River in the south. The rocks found in the Kat River Valley are originally from the Karoo Supergroup shale and sandstone, which were deposited 250 million years ago. Erosion has created an undulated coastal plain, separated from the inland plateau by the Great Escarpment. Dolerite, a strong non-eroded rock, can be found at the top of some hills (Lewis 2008).

Figure 6.1 The Kat River Valley

Source: Authors, based on Riverside (2012)

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The Kat River Valley can be described in three sections – upper, median and lower – that show significant diversity. The upper Kat is made of many tributaries that collect the frequent summer rainfalls. The Great Escarpment erosion process is strong in this section. The median Kat is linear and steep-sided, whereas the lower section of the Kat River is characterised by large meanders as soon as it reaches the coastal plain. The landscape resulting from the geological configuration is heterogeneous. The upper section is made up of narrow valleys, sided with steep slopes. Areas where tributaries join the Kat are more open and flatter. When the Kat reaches the coastal plain, the landscape is much more open and the temporary tributaries have dug small valleys whose slopes are gentle.

Rainfall distribution is also heterogeneous, from a spatial and temporal perspective: summer storms are the main rainfall source, with the Great Escarpment creating a strong south-north-oriented gradient (400–900 mm). The monthly average temperature is around 12°C in winter, with a usual day–night amplitude of 20°C. Frosted mornings are frequent, especially in July and August (Figure 6.2).

With regard to vegetation, the coastal plain is a continuous grazing land, dotted with shrubs, mainly Acacia karroo, and some trees. Grazers (cattle, sheep and small antelope) and browsers (goats, big antelope such as kudus) use these different resources. Alluvial terraces are dedicated to crops and large citrus orchards. In the median and upper sections of the valley, the vegetation is similar. Shrubs are more numerous on the slopes, making them less interesting for cattle and sheep rearing, whereas the higher hills and the inland plateau are again open grazing land, comprising the same species as the coastal plain. However, the higher rainfalls and

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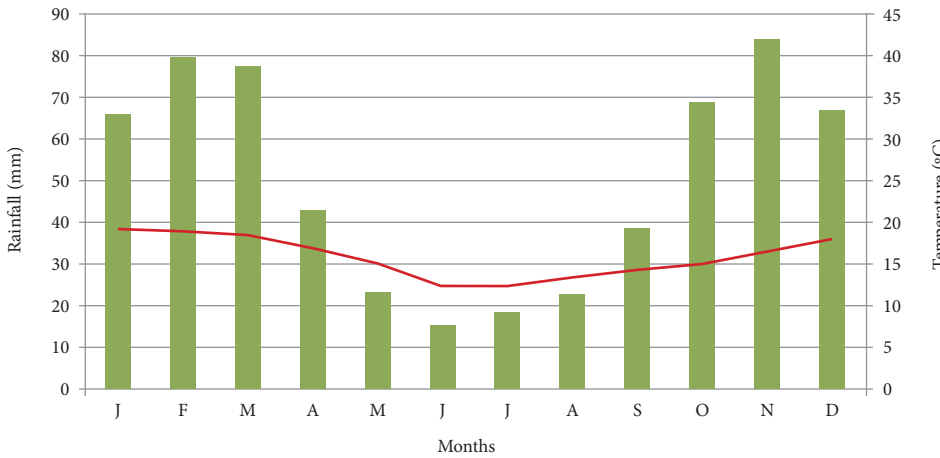
Figure 6.2 Average rainfall during the last 40 years at the median part of the Kat River



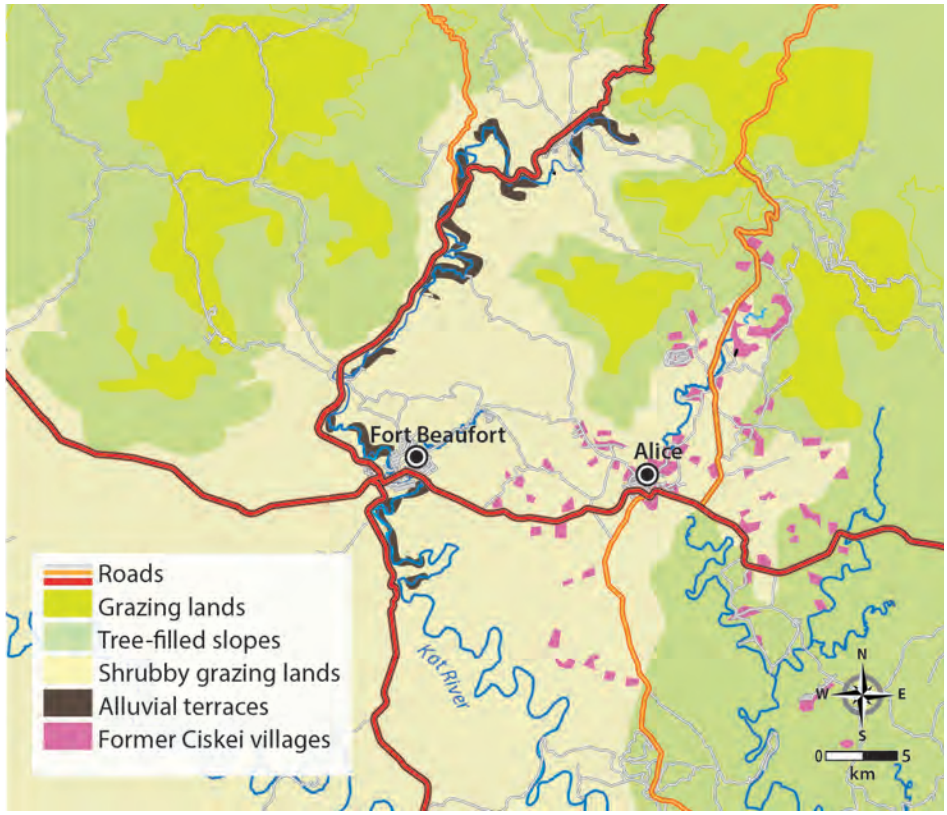
Source: Authors, based on data from Riverside (2012)

the lower winter temperatures make their fodder resources different (large resource in spring, but with extremely poor nutritional quality in winter) (Figure 6.3).

Unequal access to land set up since the 19th century within the South African political context

From 1820 onwards, after several successive frontier wars, British settlers were given land on the western side of the Kat. Authorities set up a buffer zone between the Kat and the Keiskamma rivers, forbidding anyone to live there in order to limit the attacks of the amaXhosa. It was also decided to dedicate the upper section of the Kat River Valley to coloured people, organised in a settlement, as the colonial authorities thought that such a settlement could help to 'civilise' them (Nel & Hill 2000) (see Figures 6.4 and 6.5).

Figure 6.3 Different ecosystems in the Kat River area



Source: Authors, based on data from Riverside (2012)

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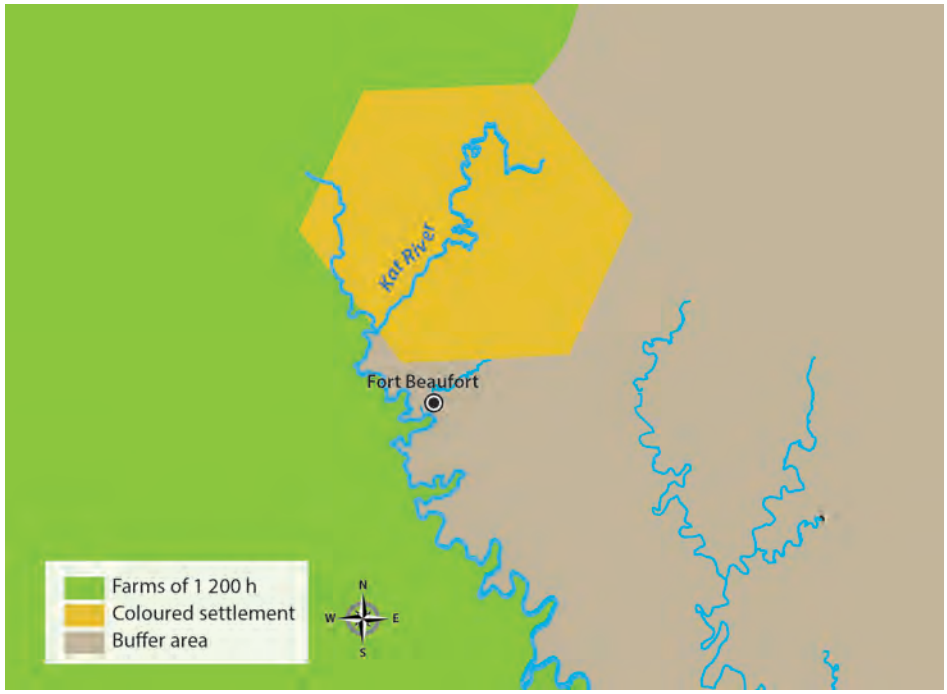
Figure 6.4 Historical situation in 1820



Source: Authors

The British settlers were given units of around 1 200 ha. They raised cattle (milk and meat), sheep (wool and meat) and ostriches (feathers), as well as irrigated crops on the alluvial terraces. To accommodate the amaXhosa, who lost their access to land, a black settlement was identified east of the buffer zone, where the inhabitants were given access to individual plots with water access. They dug canals and cultivated cereals (maize, sorghum and wheat) and also raised cattle and sheep on common grazing land (Nel & Hill 2000).

1850–1900: A black peasantry development limited by white supremacy

The amaXhosa people sought access to the buffer zone grazing lands. This led to tensions and another frontier war in 1850. Although won by the colony, it resulted in an agreement to end the buffer zone and to allow white settlers, as well as the amaXhosa, to occupy the former black settlement, including the commonage.

In addition, around 1853, the land located north of Fort Beaufort was given by the colonial authorities to the amaMfengu, who had been driven out of present-day KwaZulu-Natal and who had helped the colonial soldiers during the frontier wars against the amaXhosa. The area in question, called the Healdtown location, is located

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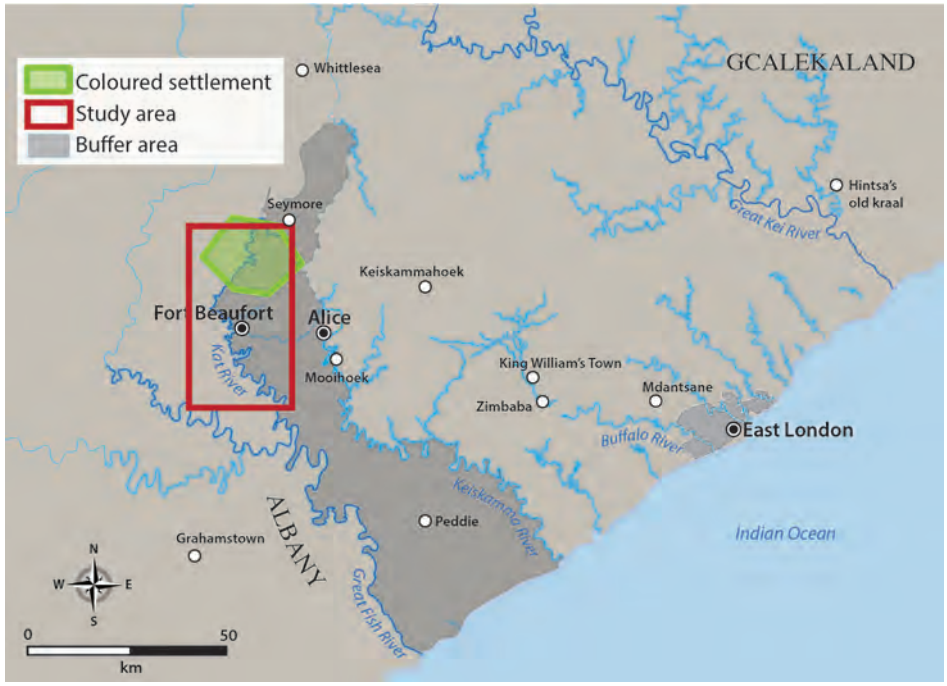
Figure 6.5 Buffer area and coloured settlement in Eastern Cape in 1820



Source: Authors

on flat hills covered with shrubby savannah. The amaMfengu, mixed together with the amaXhosa and the inhabitants of Healdtown location, form the present Xhosa populations of the region (Nel & Hill 2000).

The peasantry of the amaMfengu and amaXhosa developed quickly from 1860 onwards. They utilised animal traction (donkeys and oxen) and ploughs, and traded in grains and wool, thanks to commercial exchange mainly with white farmers and traders. The selling of surplus produce allowed returns to be capitalised in equipment and breeding animals. However, access to land was limited and this hindered further development: some people had been given title deeds by the British Crown, while others leased land, generally on large white-owned farms (rent paid through exchange of crops) (Bundy 1979). By around 1880, all the arable lands in the black areas of the Kat River Valley had been cultivated. Land pressures were exacerbated when a few white settlers developed irrigated tobacco crops on alluvial terraces in the northern part of the valley (Bundy 1979; Nel & Hill 2000).

Not all families could survive on their agricultural activities; many young men had to work for white farmers and manufacturers. This proletarianisation process was accelerated at the end of the 1800s when severe droughts contributed to the impoverishment of the poorest black families.

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Beginning of the 20th century: The initiation of segregation policies

Through the 1913 and 1936 Native Land Acts, the initial reserves that were to become the Ciskei and Transkei were delimited in the region. The Native Land Act of 1913 demarcated the reserves in the Union. Subsequently, the Native Trust and Land Act of 1936 effectively abolished the right of the Cape 'Bantu' to buy land outside of the existing reserves (Cameron & Spies 1980). The Healdtown location was included in the Ciskei homeland at that time. These transformations strongly affected agriculture.

Grains (corn, wheat, sorghum and oats), tobacco and alfalfa were the main crops cultivated on the alluvial terraces, which all belonged to white farmers. Irrigated orange tree orchards were planted from 1915 onwards on alluvial terraces next to the river. To irrigate these, farmers dug canals up to several kilometres long, leading from weirs built on the Kat River. A railway and a cooperative were established around 1924 to pack, transport and export the fruit to Europe, especially the United Kingdom.

The black areas were characterised by high population densities which further limited the arable land area each family could cultivate, making it more and more difficult to be self-sufficient. From interviews with elderly people, it was ascertained that the Ciskei families who had access to land (title deeds or leasehold) used to plough one- to two-hectare fields with oxen or donkeys. They mainly cultivated corn, sorghum, squashes and peas, without irrigation. Animal excrement was used to fertilise the fields. Families who had limited access to land were often not self-sufficient and the men used to work outside the area for several months a year, especially in the white-owned manufacturing and mining sectors.

The former black settlement was characterised by a process of privatisation of the commons, which started in 1927 (Peires 1987).

1950–1980: Unequal access to irrigation water and consequences of 'betterment planning' policy

During the 1960s, 'betterment planning' was implemented, together with the bantustan policies (see Chapters 1 and 2), in order to improve agricultural production by controlling soil erosion and improving environmental management. To reach that goal, each reserve was separated into three areas, one for residential purposes, one for animal grazing and a last one for crop production. It led to large-scale population displacements, mainly towards villages where access to water and hygiene facilities was easier (De Wet 1995; De Wet & Leibbrandt 1994).

Betterment planning was not fully applied in Healdtown. It is also said that many families possessed title deeds and were not easy to displace. To limit overgrazing, the number of donkeys in the area was limited. Although a minor intervention, it had a negative impact on agricultural activities as they were used for ploughing and

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transport. Only a few families had oxen to replace the donkeys. Interviewees say that many families stopped ploughing their land at that time.

During the same period, white farmers acquired secured access to irrigation water thanks to a dam built on the upper section of the Kat River. On the one hand, this resulted in new citrus cultivars and more efficient irrigation systems (microjets have been used since 1976). The citrus orchards replaced grain crops and alfalfa, leading to a progressive specialisation, particularly of the farms with large alluvial terraces. On the other hand, because the quality criteria of the tobacco production were never fully met in the valley, this crop was abandoned in the late 1970s. Both of these farm types still kept their cattle herds. However, milk production was progressively stopped on many of the farms in order to specialise more on meat production. Stock theft rose, along with the intensification of social tension (the struggle against apartheid). This might explain why some farmers decided to stop raising small stock.

1980–1994: Consolidation of the Ciskei and diversification of citrus cultivars in the white areas

In the early 1980s, aiming at making the Ciskei 'independent', the South African government decided to consolidate the Ciskei by including some of the white areas (Figure 6.6). The upper section of the Kat River Valley (the former black settlement) was integrated into the Ciskei (Figure 6.7) through the expropriation of some land of the white farmers. In addition, a parastatal organisation, Ulimicor, was established and took over the citrus farms of that area, producing one-third of the total citrus production of the valley.

In the late 1980s, Ulimicor divided the citrus farms into smaller entities of 30–40 ha. These units were leased to black farmers, most of them employees of Ulimicor, for five years. Ulimicor still provided the equipment, technical and financial support. The farmers were supposed to receive title deeds by the end of the fifth year of the lease, on condition that the farm was well managed. But in 1994, with the dismantling and integration process of the bantustans in post-apartheid South Africa, this process was stopped. Ulimicor, strongly linked to the Ciskei, was also dismantled in 1997. Without title deeds and without technical and financial support, the production of the black-owned citrus farms quickly dropped.

This was a general trend in these areas. The dismantling of support at the end of the 1980s led to an overall steady decrease of agricultural production. This was aggravated by the 1982/83 drought, and the intensification of stock theft diminished cattle and small stock herds. Many of the individual plots were abandoned and cattle and small stock herds were kept only as a saving. In addition, during the 1970s, social grants such as old age pensions were set up by the government. These quickly became the main source of income for many families, with agriculture being of less importance.

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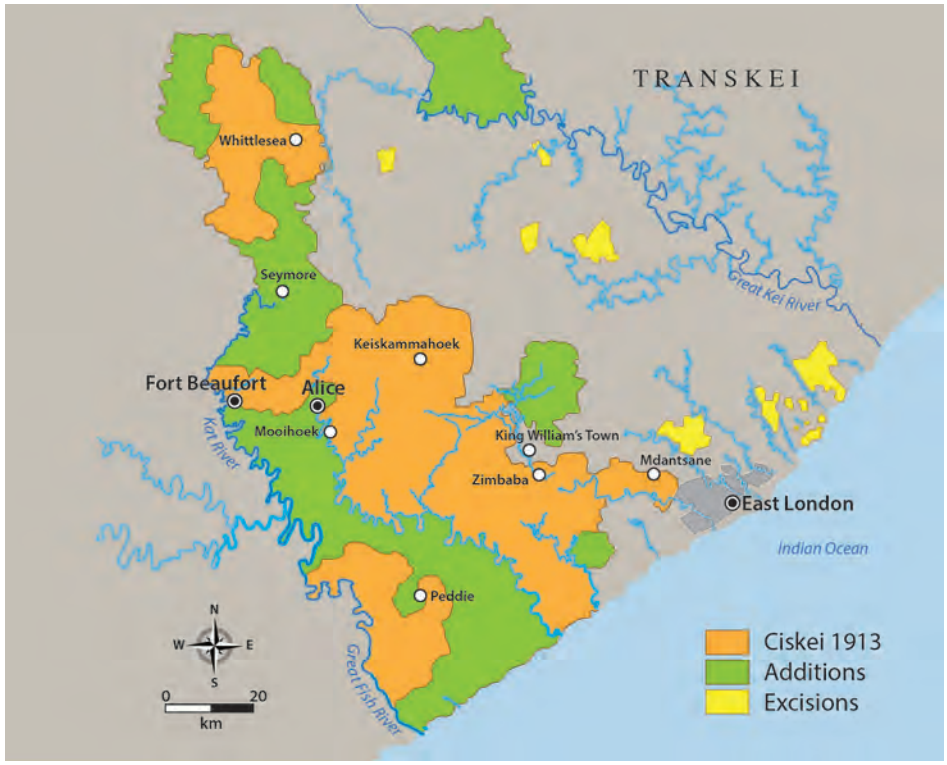
Figure 6.6 Consolidation of Ciskei in the 1980s



Source: Authors

The white-owned citrus farms, on the contrary, experienced totally different trajectories. Their expansion, initiated in the 1970s, continued. In the late 1980s, irrigated alfalfa and grain crops totally disappeared, with alluvial terraces being planted only with citrus orchards. In 1998, with the liberalisation of the citrus market and export, the sector was restructured. Riverside, a large farm in the medium section of the valley, set up its own packing house so as to be able to export its production directly to international markets. Some soft citrus cultivars, mainly satsumas and mandarins, were also introduced to better respond to (international) market evolutions.

Since 2000: Growth of production in the upper valley citrus farm

Through the post-apartheid reform programmes, several previously disadvantaged farmers gained access to land and benefited from other government agricultural development programmes to establish farming activities. In 2006, Riverside initiated assistance to smallholder farmers in the upper valley by offering technical,

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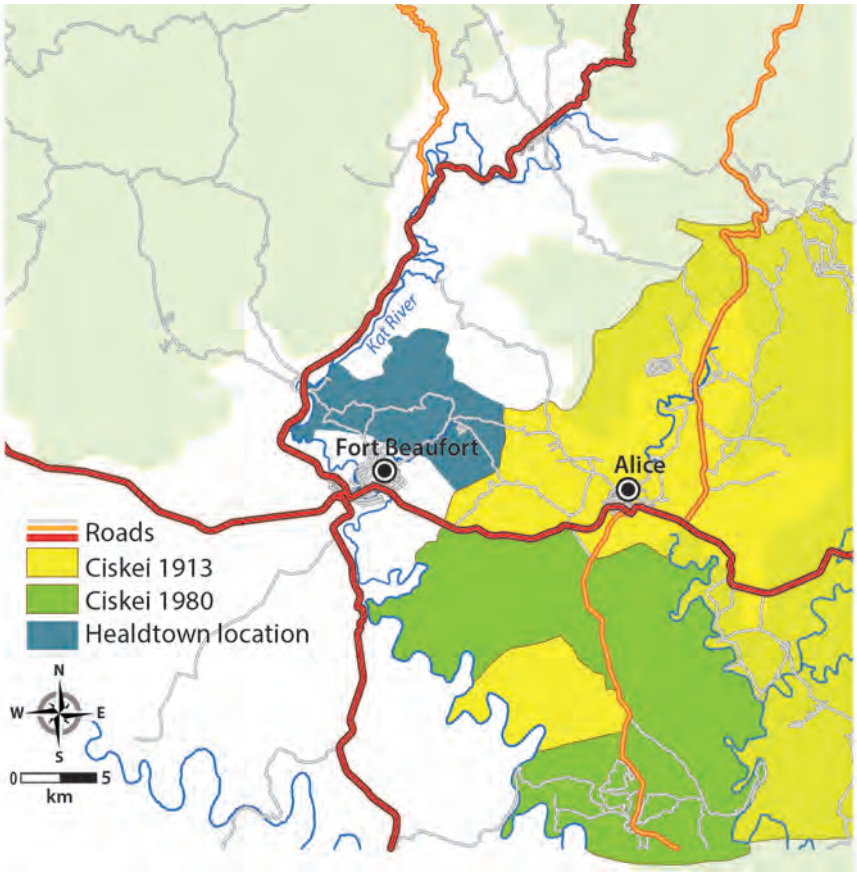
Figure 6.7 Consolidation of Ciskei in the Kat River area



Source: Authors

administrative and financial support. It was joined by another pack house in the valley, which has offered the same kind of services since 2009. This support is part of the trend generated by the black economic empowerment programme, a government policy aiming to improve the lives, business opportunities and market access for previously disadvantaged people.

As such, farmers who had stopped their production could start it again. Part of the irrigated lands was redeveloped and utilised. The farmers who had not totally stopped their production were able to increase it by renewing their trees and acquiring new equipment.

The white farmers are presently continuing with the large-scale citrus operations. Most of the cattle-oriented farms have developed game-hunting activities, sometimes by introducing exotic or rare species.

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The production systems reflect the unequal access to agricultural means of production

Extensive breeding systems on shrubby savannah

Stockbreeding is the main agricultural activity developed on the shrubby savannah surrounding the valley. The nutritional quality of the grass is very good all year round in the lower section of the valley. However, grass quantity is low during the dry season (from June to early September), with a carrying capacity that reaches only 10 ha/animal.

Most of the cattle and sheep are sold as weaners to feedlots located in the Free State province where there is a large maize production. Goats are sold mainly to community markets for Nguni or Muslim traditional ceremonies (there is a large market in KwaZulu-Natal).

Farms are organised into camps of ten to several hundreds of hectares, each having at least one water point (collecting surface water, filled by an electric pump or a windmill). The main rearing tasks are monitoring lambing for sheep and goats, controlling internal and external parasites (ticks, in particular) and maintaining close-mesh fences, especially to reduce the jackal predation on lambs.

Extensive cattle raising (PS1)

This type of cattle-raising farm is most often run by a man in his fifties, who is the only family member working on the farm. The size varies between 800 and 4 000 ha, without any alluvial terrace of the Kat Valley. A worker takes care of around forty cows. The farm is equipped with two pick-up trucks and a watering network. Farmers often have a bull for thirty to thirty-five cows, depending on the age of the bull.

The carrying capacity used by farmers is around 0.1 LSU/ha.[1] Some farmers let the bulls stay with the cows all year round, or only between December and February. When the calves are around seven months old, they are weaned and sold to an agent. The selling price is between R15–20/kg, depending on the demand, for calves weighing from 200 to 240 kg. The added value for one cow is around R3 200 (Figure 6.8).

Cattle, sheep and goat rearing on large white farms and trophy hunting (PS2)

These farms, located on savannah, are managed by two members of the same family (generally father and son) on large plots (4 000–13 000 ha). They are well equipped, although with simple instruments (four to six pick-up trucks and a watering network), and fences often need regular maintenance. Cattle herds, sheep and goat flocks graze the savannah. The three different species do not have the same feeding

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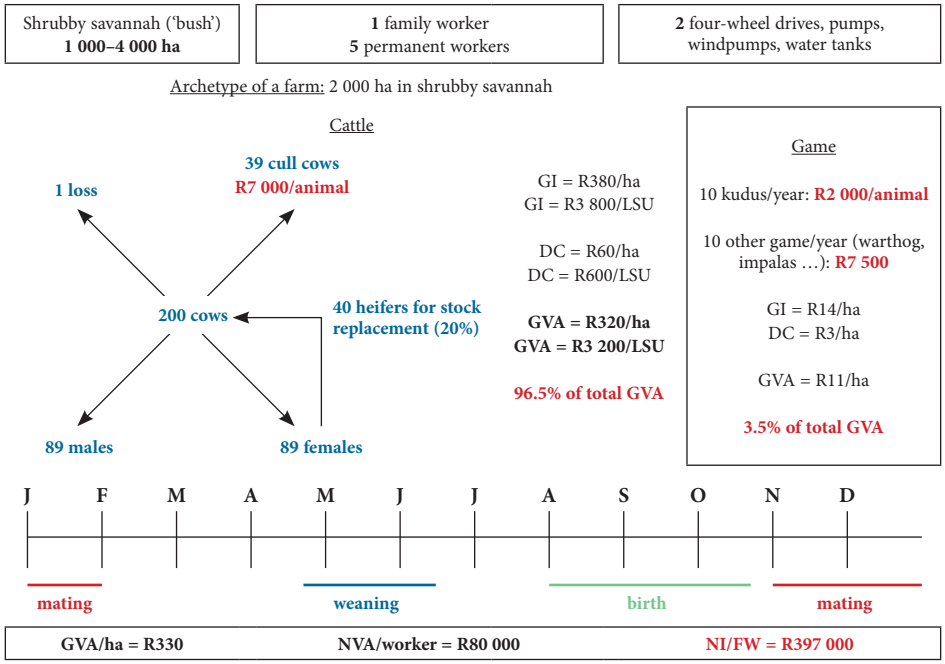
Figure 6.8 Extensive cattle rearing



Note: GI = gross income, DC = direct costs, LSU = large stock unit, GVA = gross value added, NVA = net value added, NI/FW = net income/family worker
Source: Authors

needs though, leading to a carrying capacity for this system that is higher than for PS1.

One worker manages 300 ha as small flocks are very labour intensive. Merino sheep and angora goats are bred for their meat, wool and mohair. Shearing occurs once a year for each flock, at different times in order to spread the labour. The average selling price may vary, particularly linked to fashion trends. The costs are low (shearing and tick control) and gross value added (GVA) per goat is R640 (R3 840/LSU); GVA per ewe is about R1 000 (R6 600/LSU). Cows are bred in the same way as in PS1, aiming at weaner sales. The GVA per cow is about R3 150.

Sheep are divided into two groups. The first is composed of the best merinos, which are mated with a merino ram. They are bred mainly for their wool and only cull ewes are sold. The second comprises lower-quality ewes, which are mated by a bigger ram to produce lambs to be fattened. The other flocks are also divided into two groups in order to lower the number of males (during mating season) and spread the work.

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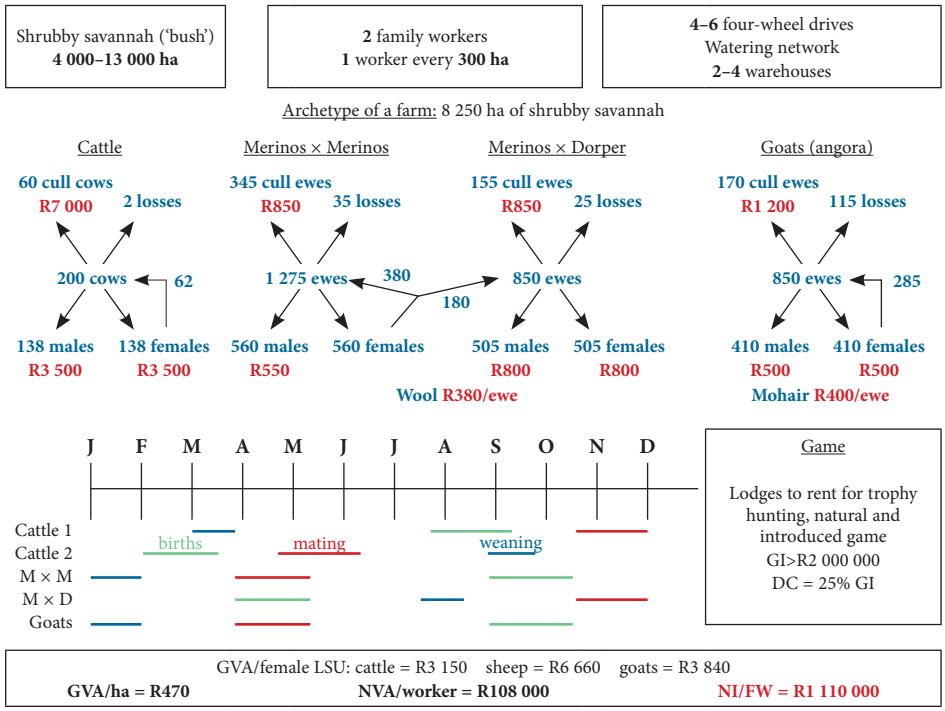
Game activities have also been developed, attracting hunters from around the world. The GVA is generally high, considering that this activity does not require much maintenance (Figure 6.9).

Cattle, sheep and goat rearing on small (black-owned) farms with irrigated vegetable crops (PS3)

These farms of 250 to 1 000 ha of shrubby savannah are located next to the Mankazana River. Formerly owned by white farmers who were engaged in extensive stock raising, irrigated crops and tobacco, they were part of the consolidation of the Ciskei in the early 1980s. They have been managed by Ulimicor for some years, and were privatised in the early 1990s. Those who took over these units were mainly non-farmers with jobs in another location. Only a few benefited from financial and technical support from Ulimicor, which was dismantled in 1997, and their equipment is consequently old, often dating from the 1970/80s. Because of cash flow problems, farmers may have to sell several cattle to repair parts of the equipment. Fences are

Figure 6.9 Stock rearing on large white farms



Note: GI = gross income, DC = direct costs, NI/FW = net income/family worker, LSU = large stock unit, GVA = gross value added, NVA = net value added
Source: Authors

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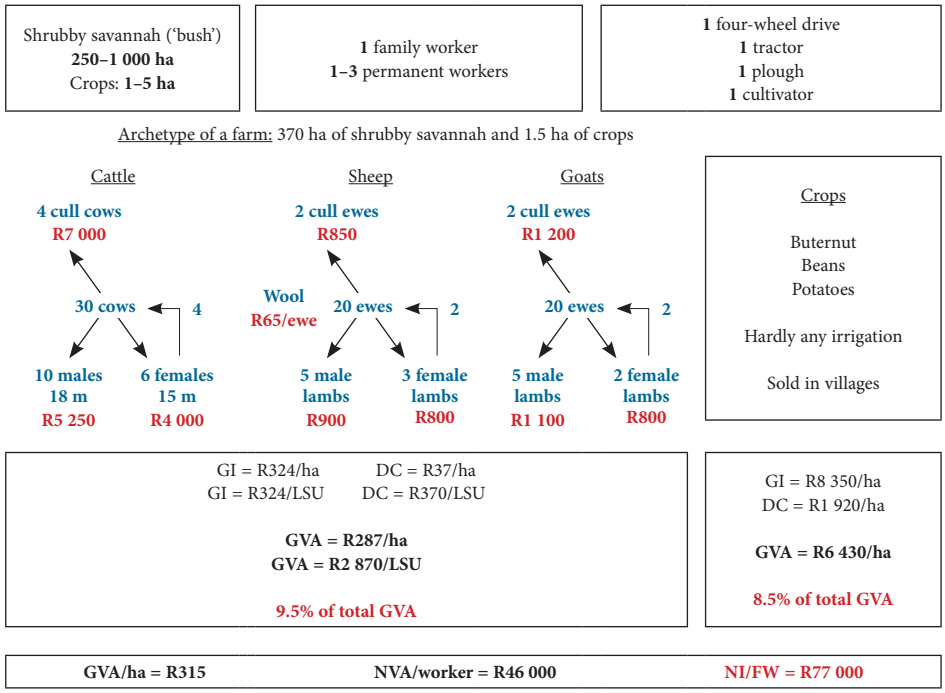
also very old and most of the time in a bad state, making grass management difficult. Moreover, cows are generally not fed with additional grain or fodder before mating, and the reproduction and weaning rates are low (70 per cent of weaning for cattle, 55 per cent for small stock). Except for some cattle which are sold to an agent, animals are sold in the neighbourhood (often for traditional purposes). The GVA of these stock-raising systems is around R2 900/LSU.

These farmers sometimes cultivate irrigated vegetable crops (potatoes, squashes) on small areas (1–5 ha), with the produce being sold locally. The GVA for these activities is around R6 400/ha (Figure 6.10).

Citrus production systems

Most of the farms which have access to alluvial terraces have been planted with citrus orchards. The main varieties are navel oranges, lemons and soft citrus (satsumas and mandarins). Planting a new orchard is a significant investment: around R60 000/ha to plant on new land, which includes removing shrubs, planting trees and setting up

Figure 6.10 Stock raising and vegetable crops on small black farms



Note: LSU = large stock unit, GVA = gross value added, NVA = net value added, GI = gross income, DC = direct costs, NI/FW = net income/family worker
Source: Authors

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the irrigation system. An orchard may produce for twenty-five to forty-five years, depending on soils and maintenance.

Soils are deep and the low-altitude difference with the river allows for cheap irrigation, which is important since each tree receives around 6 500*l*/year. Many weirs create reservoirs on the Kat River, from which water is pumped into an underground network which brings it to the orchards. Pressurised water is distributed through microjets to each tree.

One family member works with several permanent workers. Some daily workers are also employed on a seasonal basis; they are in charge of pruning, useful to control the growth of the trees, and fertilising. Chemical pesticides are used to control insects and fungus in the orchards. These treatments are compulsory to comply with the strict international market criteria. The picking is done by seasonal workers.

All the citrus is delivered to the three private pack houses where it is cleaned, sorted and packed. This is done mainly using industrial machinery, which is relatively expensive and requires a large seasonal workforce. From 60 to 70 per cent of the fruit produced in the valley is good enough to be exported to Europe, the Middle East and the Far East. The rest is sold on the South African market. The inter-annual variations in prices per 15 kg box are important, as well as the differences between varieties: R20–R25 for navel oranges, R40–R50 for lemons and clementines and up to R150 for mandarins (Citrus Growers' Association of South Africa 2012; interviews with pack house managers).

White-owned farms with large-scale orchards and cattle raising (PS4)

These farms have been owned by white families for nearly two centuries and produce most of the citrus in the valley. Their areas range from 700–1 200 ha of shrubby savannah, complemented by 40–100 ha of alluvial terraces, mainly located in the medium and lower sections of the valley. One family member works with eight to fifteen permanent workers, together with many daily workers. The use of equipment is high, with tractors (between seven and ten) and spraying machines being the key tools to run the farm.

Navel oranges represent most of the orchards, but they are progressively being replaced with soft citrus varieties as growers look for higher profitability. Most of these farms are part of a cooperative (Kat River Citrus) located in Fort Beaufort. Yields are generally high for these farms, between 35 and 50 tons/ha, depending on varieties.

Cattle herds are bred on the savannah sections of these farms. This production is not very labour intensive (5–10 per cent of family member labour) and does not require high investments. The GVA of stock is small compared to the orchards (Figure 6.11).

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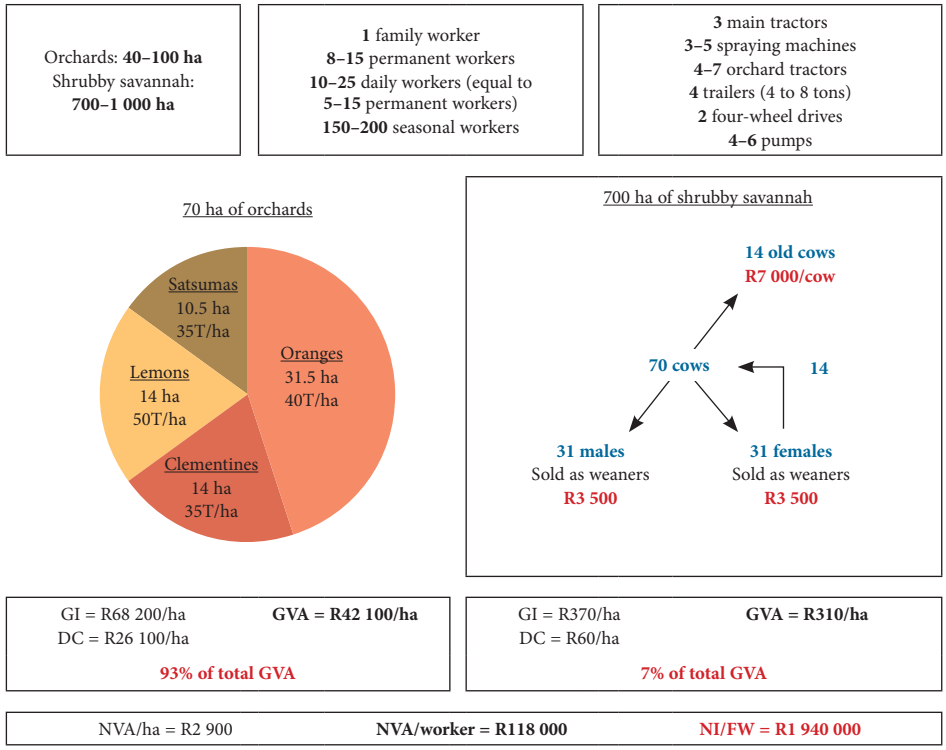
Figure 6.11 Large-scale citrus production



Note: GVA = gross value added, NVA = net value added, GI = gross income, DC = direct costs, NI/FW = net income/family worker
Source: Authors

Black-owned citrus farms

As noted, during the consolidation of the Ciskei in the early 1980s, white farms of the upper Kat were bought out by the South African government and transferred to the Ciskei authorities. The parastatal Ulimicor was responsible for the citrus orchards until the end of the 1980s. Around 1989, the citrus farms were divided into units of 30–40 ha each, and were leased out, often to Ulimicor employees.

The five-year lease contracts included a purchasing clause on condition that the orchards were well managed. Ulimicor brought strong administrative, technical and financial support to the farmers. This support ended when Ulimicor was dismantled in 1997, during South Africa's agricultural liberalisation period.

Some farms produced well until 1997, but without any support, production dropped and the farmers were no longer able to renew their orchards and equipment. Other farms, particularly those leased to personnel of the Ciskei authorities for whom

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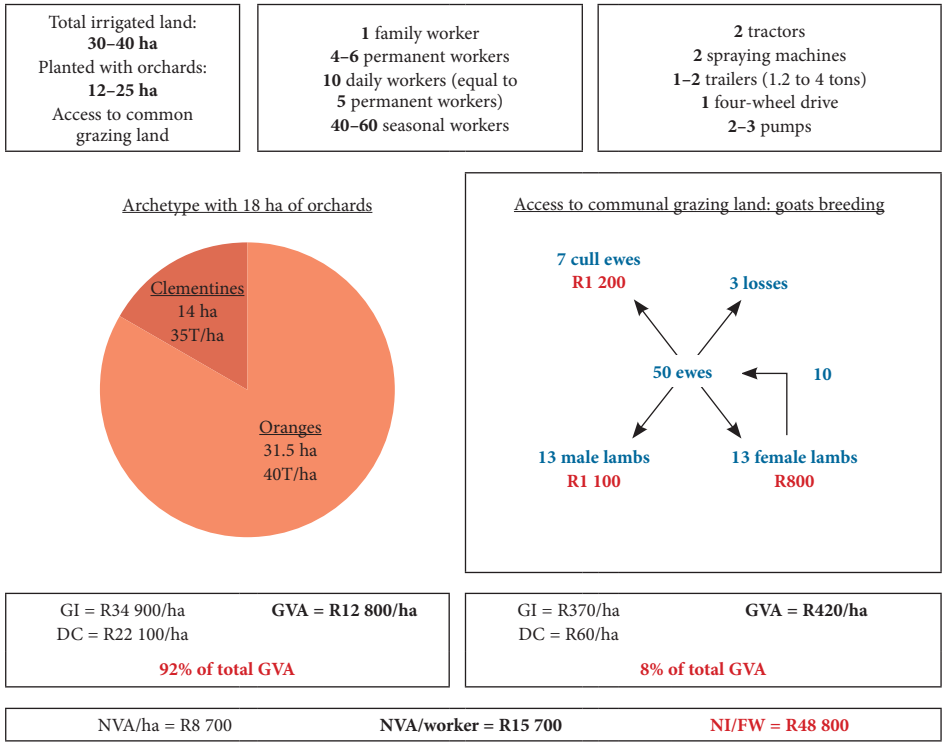
agriculture was not a priority, saw their production cease after 1997. The owners being absent most of the time, the orchards were abandoned and the equipment sold.

Since 2006, most of these farmers have been supported by pack houses providing technical support and assisting them with administrative tasks. Production loans to buy fertilisers or chemicals, complementing long-term soft loans offered by a government agency, are also made available.

Black-owned farms in production since the 1980s (PS5)

These farmers own 30–40 ha of irrigated land, of which only 15–25 ha are productive orchards (Figure 6.12). Most of the trees are navel orange trees planted by Ulimicor in the 1980s. The orchards are old and less productive than in the medium and lower sections of the valley and their yields are consequently lower (around 20 tons/ha). The equipment on these farms is poor, with most having a couple of tractors and one spraying machine, generally bought in the late 1980s.

Figure 6.12 Smaller-scale citrus production



Note: GVA = gross value added, NVA = net value added, GI = gross income, DC = direct costs, NI/FW = net income/family worker
Source: Authors

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The main limiting factor of this system is of an economic nature: low cash flow limits the ability to buy fertilisers and chemicals to ensure high production levels, and the lack of capital limits the ability to renew the orchards.

Farming activities in the villages of the former Ciskei

Many different agricultural systems are set up in these villages: gardens for vegetable production, chicken rearing, pig fattening for home consumption, pig rearing to sell piglets, and goat and cattle rearing. Only the two most significant are described here.

Chicken breeding for home consumption

Typically, a woman is responsible for three to eight hens and one rooster. This requires low labour time. During the first three weeks, the chicks are given specialised nutrients, bought in town. Thereafter, they are fed with full or crushed maize grains and cooking leftovers. The maize is bought monthly from a farmers' cooperative based in Fort Beaufort. The feeding costs are about R65 each month.

The chickens provide about seventy-two eggs each per year. Considering the loss (many eggs and chicks are eaten by dogs, cats and snakes), only eighteen chickens finally remain each year. The price of one chicken is around R50.

This system provides chickens for family consumption. Adult chickens are slaughtered mainly for Sunday meals. A family eating eighteen chickens a year has a gross product of around R960; the NVA is then around R200/year. In monetary terms, when the losses are considered, this activity is not very incentivising (Figure 6.13).

Goat rearing on communal land, sold to families for ceremonies

This raising system is typically managed by a man, often the head of the family. The herd has free access to communal land, with no permanent shepherd. This increases the risk of stock being stolen or females being impregnated by males from other herds. The number of animals sold each year is variable, and a breeder may sell a female when in financial need or when offered a good price. As such, the number of female goats is not stable and may vary between five and eight from one year to another.

In a theoretical situation with a stable herd of six ewes, a breeder may receive a gross product of around R4 900/year. The costs are around R480/year for vaccinations and tick preventive actions. The NVA would then be R4 420/year. This being said, such a stable situation is not often the case, leading to results that are usually lower (Figure 6.14).

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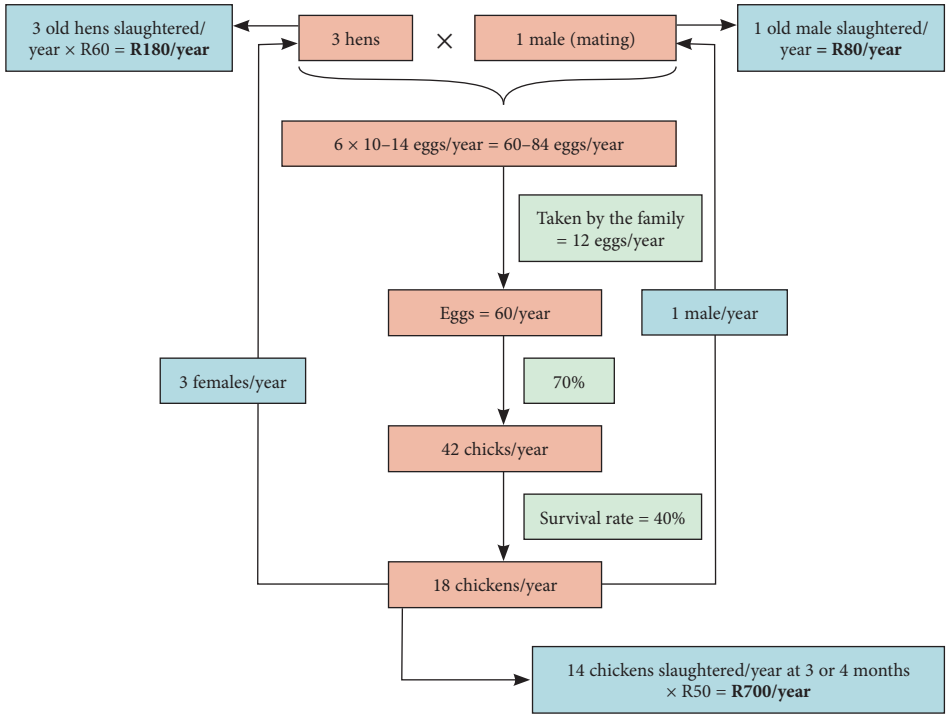
Figure 6.13 Chicken-raising activity for own consumption in villages



Source: Authors

Households with low incomes (mainly social grants) having only one agricultural activity (AS1)

Most of these families moved into the village from the 1960s to 1980s. They were often farm workers on the white farms of the Kat Valley. They were given very little access to land (residential plots). Most of them never had large livestock holdings.

In these households, the main income is the grant for an elderly person (R1 270/month), sometimes supplemented with a child grant and/or remittances from other members of the family (estimated at about R250/month). Part of this money is dedicated to either chicken rearing with three hens or a garden for vegetables. The cultivation of a garden is strongly linked to the presence of a man (for soil preparation) and to access to irrigation water. The households which do not have access to labour or water often set up chicken or pig-fattening systems.[2]

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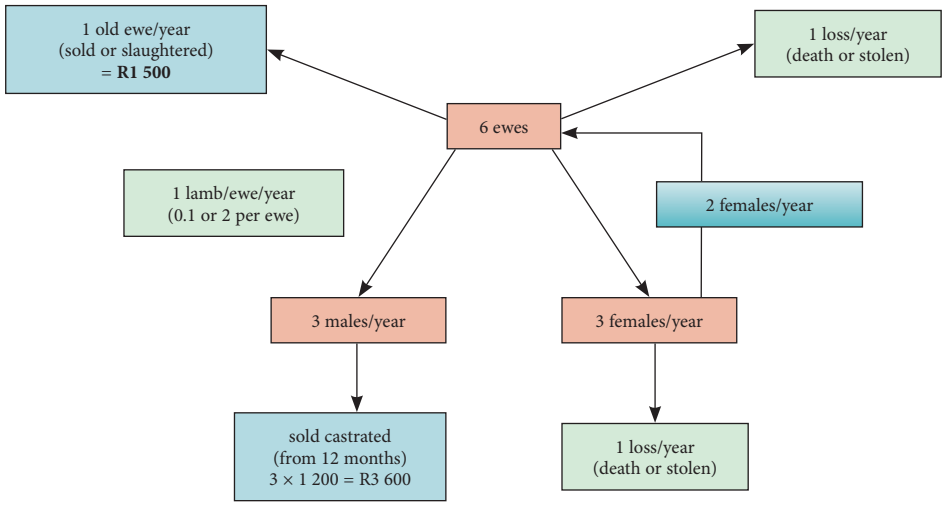
Figure 6.14 Goat-raising activity in villages



Source: Authors

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Households with medium income and two agricultural activities (AS2)

The income of these families is a bit higher. They receive old age pensions and child grants, complemented by another income (generally not a qualified job). The total income is about R2 800/month.

A large part of this revenue may be dedicated to two agricultural activities. The most common combinations are chicken rearing (three hens) and pig fattening (one or two pigs per year), chicken rearing and pig rearing (one sow), or chicken rearing and a small garden.

Households with higher income and stock-raising activity (AS3)

These families often receive title deeds, giving them access to a cultivated plot. They used to breed cattle and goats in the past. Since the 1970/80s, these families have gradually sold their animals, sometimes to finance their children's studies. Their agricultural activities have thus been abandoned over time to give their children access to qualified jobs with higher incomes.

The incomes of these families are higher when compared to the others (difficult to assess, but very likely over R6 000/month), and are related to the presence of a qualified employee in the family. This presently leads to the financial capacity to set up a cattle or goat herd. Moreover, most of these families also have a chicken-raising system (with around eight hens) and a pig-fattening or -raising system. Some of these families also cultivate a large garden.

Availability of male family labour is often scarce. However, the relatively high income allows the household to employ a village member to prepare the soil in the garden, providing a temporary job for often distressed neighbours. Access to water in the dry season represents a constraining element for these families, so they do not grow vegetables in summer.

Comparison of economic results

NVAs show the diversity of technical practices

The place of agricultural activity varies for the families of the different social groups. In the former Ciskei, agricultural production is often not the main activity contributing to the families' total income. In contrast, agricultural production represents a large part of the income of those families outside the former borders of the Ciskei, with farms generally extending over several thousand hectares.

The latter are farms led by one or two family members who are in charge of managing activities and taking the main decisions. They employ from two to around thirty permanent farm workers. Family labour thus represents only a low percentage of the total labour required on the farm. Moreover, if the activities include small livestock or orchards, shearing and picking is carried out by a large number of seasonal workers. For these reasons, these farms are described as 'family businesses' or 'managerial' (one family member for five to eight permanent workers; less than 10 per cent of the total labour is performed by the family members). This is the case for the PS4 and PS5 farms which employ three to fifteen permanent workers, as well as daily workers (their labour being equivalent to one to six permanent workers) and seasonal workers. These farms tend to be 'capitalistic' as the family's agricultural income is linked more to remuneration from the capital owned than to the labour of family members.

Also, the production systems, including citrus orchards, show very different NVA: one worker on the PS4 white-owned citrus farms generates an income more than six times higher than that of a worker on a black-owned citrus farm (PS5). Firstly, the black citrus farms have less efficient staff management and are saddled with old equipment (compared to PS4). The consequence is that the number of permanent workers required for one hectare of orchard is higher (around 0.55 versus 0.25), leading to lower labour productivity rates. Secondly, the historical evolutions of the black citrus farms have resulted in mainly old orchards with less productive and profitable citrus cultivars (again compared to PS4). Moreover, the cash flow constraints these farms encounter do not allow them to optimise fertilisation and pest control programmes.

Lastly, the black-owned stock farms (PS3) present lower values added per worker than PS2 and PS1, although small stock is more labour intensive than large stock. Cash flow problems and fences in a bad state (inherited from the former white

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farmers, rarely repaired since the 1980s) explain lower reproduction and weaning rates than on the white farms. This being said, the repartition of value added is quite similar among the different stock-raising-oriented systems. The familial agricultural income represents 70 to 80 per cent of the value added. These farms employ from one to five permanent workers and the familial agricultural income thus represents mainly the remuneration of its capital (fences and equipment, stock) (Figures 6.15 and 6.16).

Income inequalities in relation to access to land

The familial income per family member is also extremely varied according to the different production systems. The black-owned stock farms (PS3), for example, have familial agricultural incomes per hectare similar to cattle-raising systems (PS1), but are much smaller. The agricultural income per family member in the citrus-oriented systems is at least twenty times less important on black-owned farms (PS5) than on white-owned farms (PS4). This is mainly explained by the difference of orchard surface area per family member.

Historically, the unequal access to land and irrigation water between black farmers and white families who have owned the land since the 19th century explains the very acute disparities in terms of family agricultural income. White farms have been settled since around 1820 and, most of the time, have been owned and managed by the same family up to now. The capital inherited by the current farmers (land, access to irrigation, fences, buildings, watering network, stock and orchards) has been accumulated incrementally for almost 200 years. On the other hand, the black farms were settled about twenty-five years ago, with very poor equipment and no individual title deeds. Low capital endowment, related to short and constrained accumulation patterns, explains the difficulty in generating high income.

Similar trends are identified on the citrus and stock farms. Family incomes on black-owned citrus farms vary between R35 000 and R70 000 per annum. On white-owned citrus farms, they vary between R1 million and R2.8 million. Here again, this difference depends mainly on the areas of orchards. The white-owned orchards have been planted and maintained since the beginning of the 20th century, with white farmers benefiting from free access to irrigation water. On the other hand, black-owned stock farms generate incomes between R50 000 and R200 000 per annum, depending on the size. White-owned farms provide incomes between R150 000 and R800 000 (PS1) or between R1 million and R3.8 million (PS2). For the same system, the differences between farms are extreme and are explained by the varying areas.

The activity systems are not based on agriculture in the villages

For the rural households of the former Ciskei, agricultural activities contribute only a tiny part of total family incomes. Erratic water access, limited access to land, stock theft and a lack of market access are major obstacles to the development of profitable

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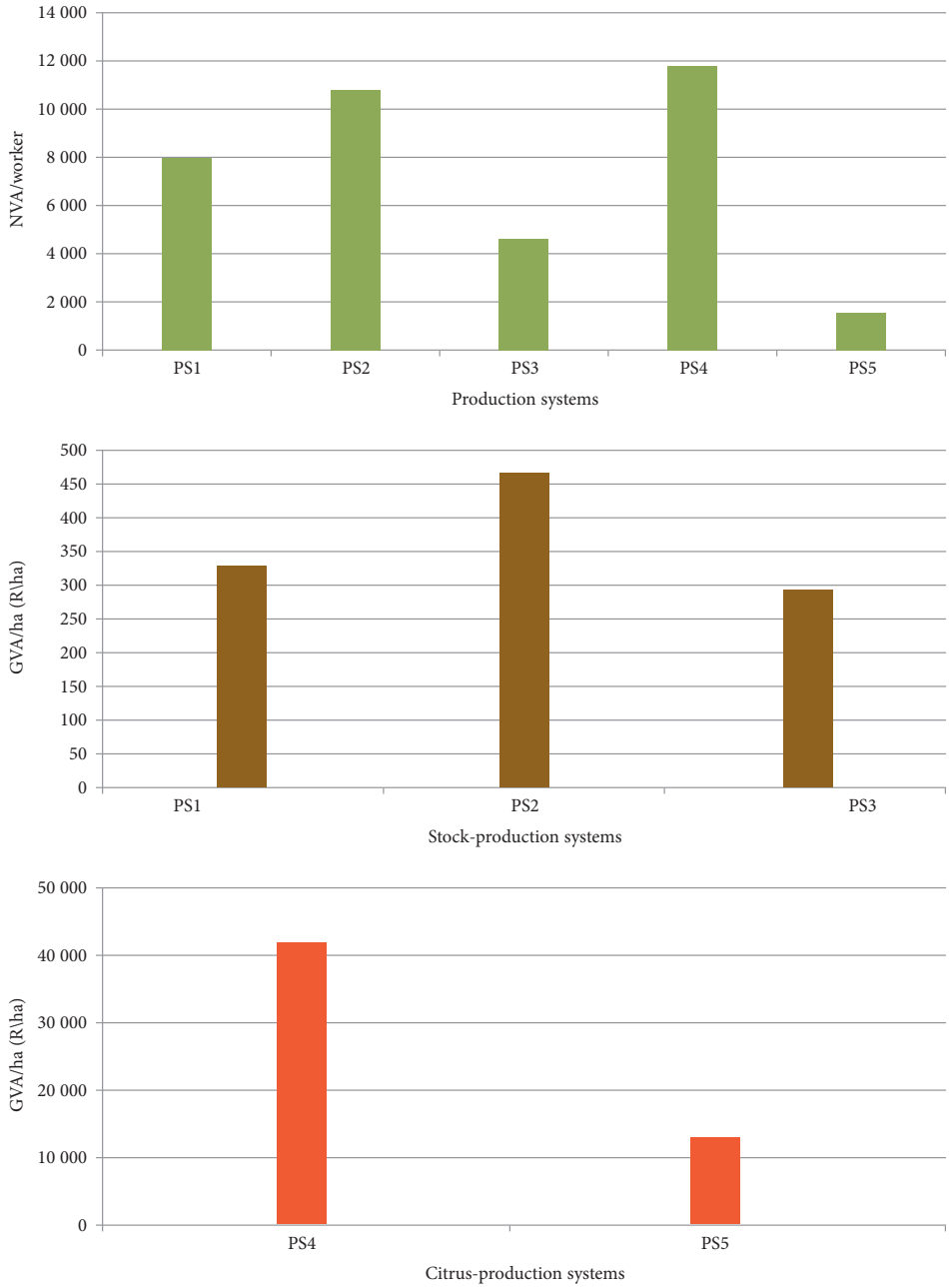
Figure 6.15 NVA/worker for the different production systems



Note: GVA = gross value added, NVA = net value added
Source: Authors

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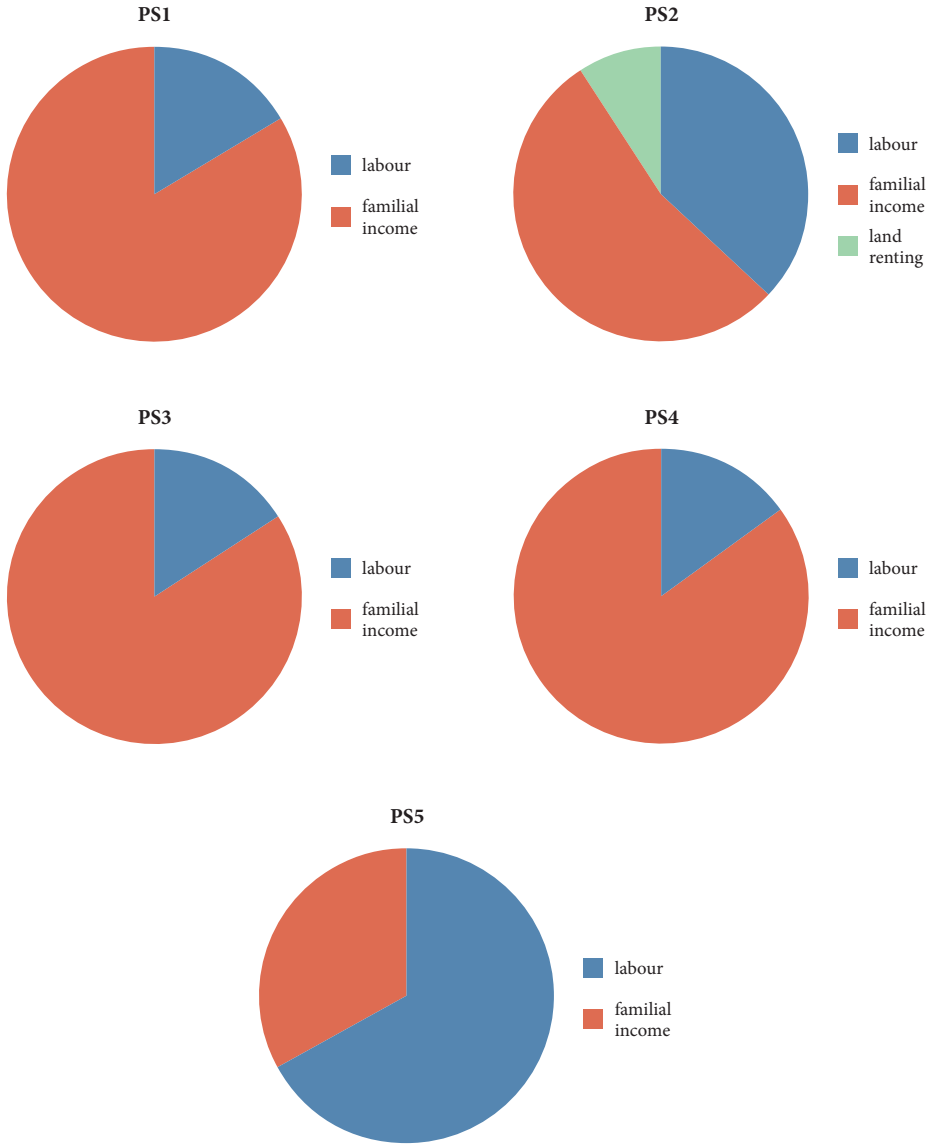
Figure 6.16 Distribution of NVA for the production systems



Source: Authors

agricultural activities. In addition, very few are willing to take the risk to invest a part of their already low income into animals or equipment (Table 6.1).

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Table 6.1 Contribution of agricultural income to the total income of rural families in former Ciskei

Other income (not from agriculture)	Sources	Possible combinations of agricultural activities and income generated	Percentage of agricultural income in the total income
Low R18 000/year	Social grant	Garden if any access to water: **R600/year**	3.5
		Chickens: **R200/year**	1
Medium R33 000/year	Social grant + Permanent job	Chicken and pig fattening R200 + R1 700 = **R1 900/year**	5.5
		Chicken and pig breeding R200 + R2 130 = **R2 330/year**	6.5
		Garden if any access to water: **R600/year** Chickens: R200/year **R800/year**	2.5
High Not assessed	Social grant + Qualified job	Garden, chickens and pig fattening R550 + R200 + R1 700 = R2 450/year Goats and cattle, managed by a man R4 420 + R8 370 = R12 790/year Total = **R15 240/year**	Not assessed

Source: Authors

Conclusions and perspectives

Ongoing development dynamics

Regarding stockbreeders, those located in the lower section of the valley have experienced a decrease in direct public support following the liberalisation of agriculture after 1994. On the one hand, the large-scale stock farmers (PS1) are presently close to retirement and do not intend to intensify their activities, for example by raising small animals. Only some of them buy or rent adjacent farms in order to increase their herds. On the other hand, the small stockbreeders (PS2) seem to want to extend their activities by acquiring more land and animals, to make sure they generate higher value added. Stockbreeders on small farms (PS3) hardly have a sufficient income to maintain their farms, and it appears unlikely that they will be able to improve their situation by renewing equipment or increasing their herds in the near future. Some of these farms were abandoned in the past, and others could be in the years to come.

Regarding citrus, large citrus farms (PS4) tend to plant new orchards – mandarin trees for the export market in place of old orange trees, and avocado orchards for the South African market. Diversifying their cultivars is a way of spreading the risks of low prices on the international citrus markets. The black citrus farms, producing fruit since the 1990s, seem to be sustainable. Their management should improve, thanks to mentoring programmes and administrative and technical support provided by the pack house which they are working with. The Recapitalisation and Development

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Programme could offer the farmers the opportunity of renewing their equipment and replanting their orchards with more profitable varieties. Some farms have been supported since 2009. This should soon lead to a considerable increase in citrus production and development in the upper section of the valley. The development of these farms will throw into question the distribution of irrigation water among the growers of the valley, as these black-owned citrus farms will acquire increasing weight in the water allocation negotiations.

In the villages of the former Ciskei, the low level of resources available for production (land and irrigation water, in particular) makes it very difficult for the villagers to make a living from agriculture. Community projects (pig or chicken rearing) were initiated by government subsidies, but were quickly abandoned. As long as access to resources remains this low, it does not seem possible for agricultural incomes to represent a higher part of the households' incomes. Despite this, some villagers with high non-agricultural incomes have relatively large herds (around fifteen female cows and sixty female goats). Although not reflecting a general trend, fodder availability could become a problem, with the high population density and number of animals putting even more pressure on farm development in these areas.

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Unequal access to means of production and possible evolutions

As noted, the strong development of citrus orchards in the valley puts a question mark over the distribution of irrigation water, a necessary resource which is available in limited volumes. Initially, when the dam was built in 1969, no restrictions to water were implemented. After the severe drought of 1982/83, irrigation rights were given to the farmers requesting them, requiring the payment of a small annual tax. Considering that the tributaries joining the Kat after the dam were sufficient to match their needs, the lower section citrus growers did not enter this scheme. There is no measurement of the volumes pumped by the farmers and the irrigation rights do not have any real use for the moment.

In 2012, only the growers of the median and upper sections had irrigation rights for the area they subscribed to in 1983 (often between 30 and 40 ha). Given the water shortage following the development of the citrus orchards, having irrigation rights could be an advantage for these growers.

Nevertheless, the National Water Act adopted in 1998 led to the establishment of a Water User Association, including all the river water users. Negotiations were started by this organisation, but did not reach consensus regarding who would allow each grower to develop new orchards without risking water shortages, and without monopolising the resource.

Households of the former Ciskei villages are the ones with the least access to irrigation water. It is the main obstacle to the development of gardens, although they are economically efficient and socially important. Indeed, the annual estimated GVA is R6/m^2 for a garden, for a low volume of irrigation water (1.8*l*/m^2/year). The white-

owned citrus farms generate a GVA of R4.5/m², but need around 400*l*/m²/year. With as much water per area, black citrus farms generate around R1.6/m². Thus, secured access to irrigation water in the villages would allow the establishment of more efficient activities than citrus production.

Secured access to land is also very unequal between the rural households of the valley. Despite this, only a few demands for restitution or redistribution have been made (possibilities offered through South Africa's land reform programme). The privatisation of black-owned lands prior to 1994 could explain the low number of land reform cases in the area. Only a common grazing area (of the former black settlement) was distributed to a community of former farm workers, facilitating stock-raising activities in an extensive way on communally managed land. However, tensions do exist between owners of the few redistributed farms and communities of former farm workers who settled on neighbouring farms and who claim access to these lands.

Notes

1 In this study, a large stock unit (LSU) is equivalent to an adult cow or bull. According to the farmers we met, we have considered that 6 ewes = 6 goats = 1 LSU.

2 The shift in use of production systems (PS) to activity systems (AS) is justified by the fact that for these households agriculture becomes, at least according to their income structures, a marginal activity.

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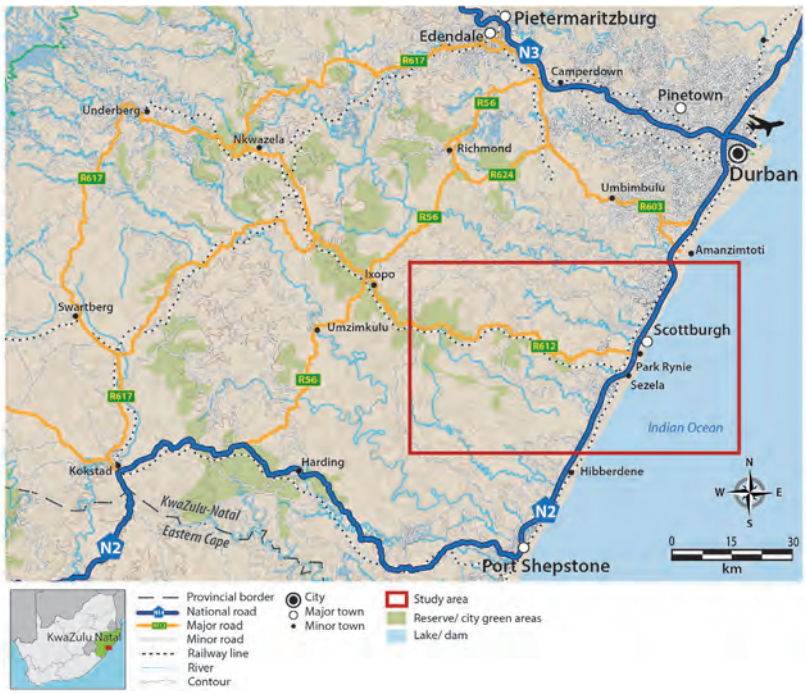
7 *Agrarian reform and sustainability of sugar cane production: A tricky balance (The case of Sezela, KwaZulu-Natal)*

Sophie Bièque and Nadège Kippeurt

Sezela: An economy based on sugar production

The study area is on the KwaZulu-Natal south coast (Figure 7.1), within the supply area of the Sezela sugar mill which processes around 10 per cent of South Africa's sugar cane. Sugar cane is by far the region's main crop, so the area is at the heart of issues related to the transformation of the South African sugar industry.

Figure 7.1 Situation map of the study area



Source: Authors, adapted from Google maps

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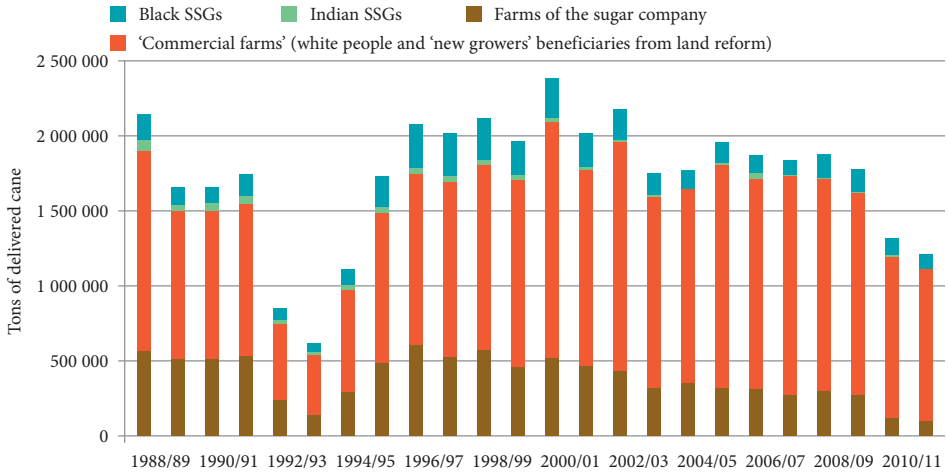
Since the early 1990s and the end of international economic sanctions against the country, and in a context of trade liberalisation, the emergence of new black farmers engaged in sugar cane is a key element of the regional policies focused on maintaining production. The Sezela mill can process 2.3 million tons of sugar cane per year, but the actual production is much lower. This decrease is mainly attributable to two factors (Figure 7.2):

- a reduction of cane acreages: firstly, this is caused by the abandonment of cane in the former black 'reserves' or 'missions', reflected in Figure 7.2 by the shrinking share of sugar cane coming from farmers of these areas (black small-scale growers – SSGs) since the 2000s. Secondly, the acquisition of land by the government for housing programmes, especially in the former reserves, accentuates the production decline in these areas. Lastly, regarding white growers, the main cause of the decline in production is the conversion of land to other crops, especially banana and macadamia.
- lower yields: Figure 7.2 also shows that farms belonging to the Illovo sugar company have supplied less and less sugar cane since the 2000s. This is a consequence of land transfers as part of the country's land reform programme. Although the land reform farmers keep growing cane, these land transfers generally result in lower yields owing to a lack of agricultural experience and a lack of capital to fertilise or replant.

This continuous decline has led to several questions in the region: Can the new planters and beneficiaries of land transfers maintain cane supply, and how? How do white farmers adapt themselves to the current changes? Moreover, what is the

Figure 7.2 Cane deliveries at Sezela mill



Note: SSGs = under 30 ha of sugar cane
Source: Authors, with data from Illovo

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relevance of programmes encouraging the emergence of small-scale cane growers in the former black reserves?

The south-eastern region of KwaZulu-Natal, with its humid subtropical climate, has a hot and wet season, mainly between August and March. However, the rains are present all year long, giving an average annual rainfall about 1 100 mm, hence water is not a limiting factor and the cultivation of sugar cane is rain-fed.

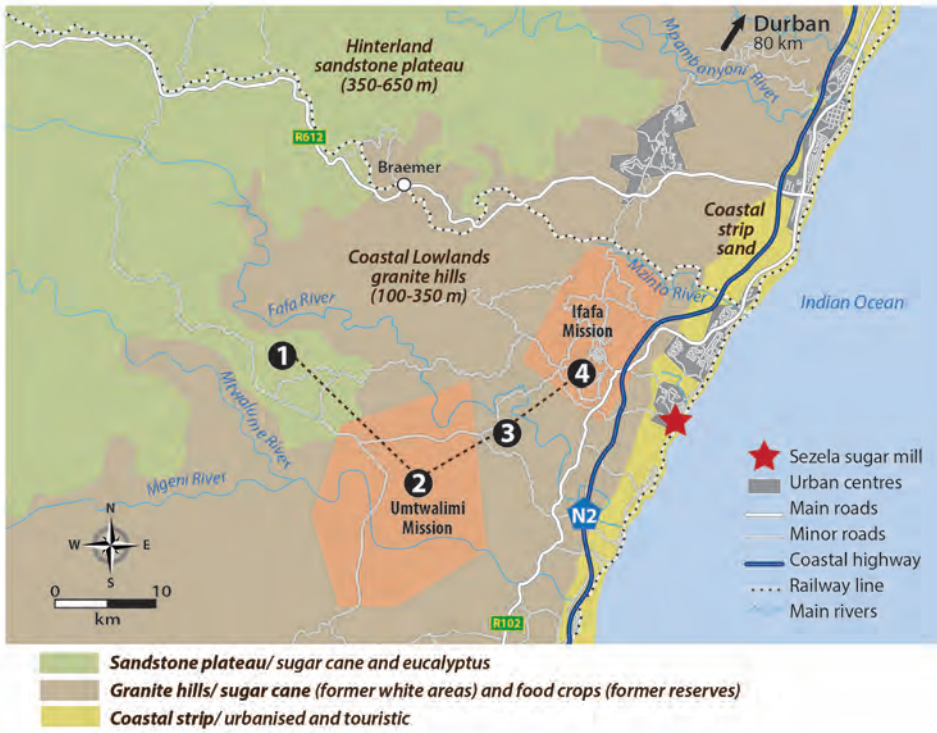
The water system of the area is very dense and marked by three main rivers in deep valleys. The river edges are generally covered with dense and spontaneous vegetation.

The study area can be divided into three agro-ecological zones (Figures 7.3 and 7.4).

The coastal strip: Housing and tourism

The sandy coast is mainly residential and touristic, as evidenced by the presence of many resorts, including Scottburgh and Port Shepstone. These towns are a

Figure 7.3 Different zones of the study area



Note: Numbers are linked to pictures in Figure 7.4.
Source: Authors, data from maps and survey

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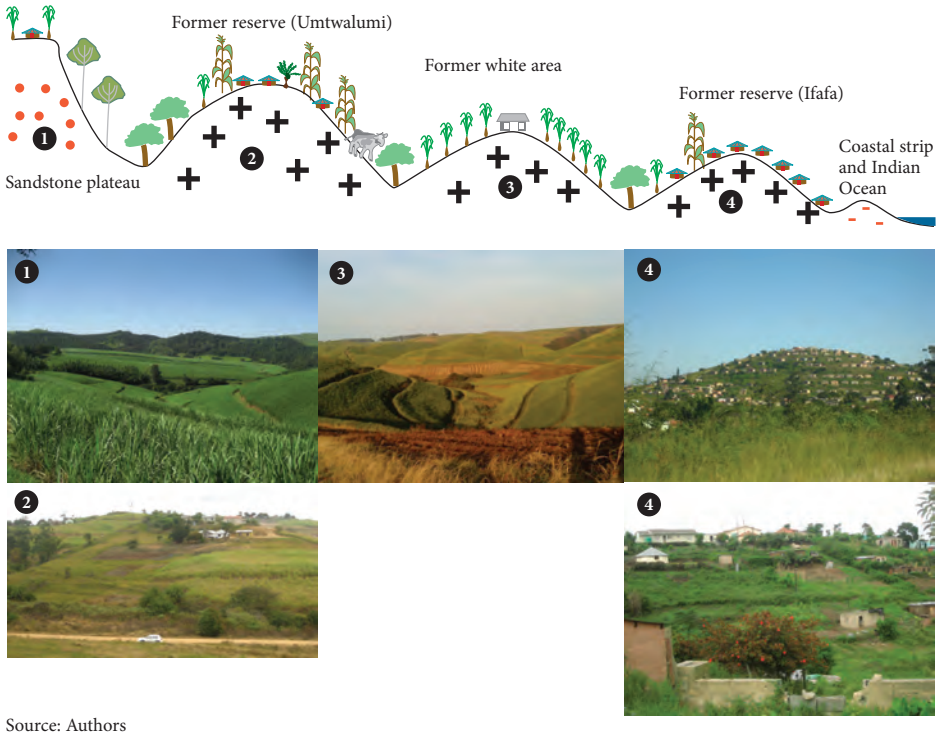
Figure 7.4 Transect of the study area



Source: Authors

major source of employment for the inhabitants of the former missions and Indian areas.[1] The main plants which process the agricultural products coming from south of Durban are concentrated in this coastal strip: a timber processing plant in Umkomaas (40 km north-east of Sezela) and the Sezela sugar mill. The coastal highway allows quick access to Durban, which is the main exit point for the raw sugar produced in South Africa, as well as for macadamia nuts. Durban, with around 3.4 million inhabitants, is also a significant source of employment for many people, especially among black and Indian populations.

The little town of Sezela, thanks to its sugar mill, employs approximately 600 people. The employees are mostly unskilled black people living in the former reserves close to Sezela. The most senior positions are occupied by white people and a new black elite, promoted since the end of apartheid. Employees in intermediate positions are mostly Indian people living in Sezela.

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The granite hills: Large cane plantations and former reserves

More inland, the erosion of granites and gneisses has resulted in the formation of a 'rolling' landscape characterised by hills with rounded summits and convex or straight slopes from 100–350 m (Figures 7.3 and 7.4).

In this hilly area, formerly reserved for white people, monoculture of sugar cane (*Saccharum officinarum*) in plantations varying from 100–1 000 ha is the foremost land use. Sugar cane is a perennial plant replanted every six to fifteen harvests; yields decrease from the second ratoon. The maximum duration for the cutting is linked to the mill's opening season: it extends over approximately 36 weeks between mid-April and the end of December. All planters in our study area deliver their cane to Sezela, the closest competitor mill being approximately 50 km away. On slopes which are too steep or too rocky to plant sugar cane, there is either spontaneous tree vegetation or eucalyptus plantations are grown. The human settlements are dispersed and located on hilltops.

In the former reserves (Ifafa and Mtwalume), sugar cane is also present but cane plots are much smaller (0.2–2 ha) and dispersed. In some areas, old paths show that cane had been cultivated before, but now the plots are invaded by mainly spontaneous herbaceous vegetation. These areas, as well as the river valleys, constitute pastures for a few cattle and goats. Plots in the immediate vicinity of the houses are used for food crops (maize, beans, vegetables and tubers). The human settlements are dispersed, but much denser than in the former white areas. In terms of population density, there are more than 100 inhabitants/km^2, with up to 400 inhabitants/km^2 in Ifafa, while there are less than 5 inhabitants/km^2 in the former white areas. Residents in these areas used to occupy land through the issuing of a permission to occupy (PTO), which granted the holder rights over the land. Although this system is supposed to have been abolished, it is still in use. The PTOs are officially unsaleable, but in reality they are often marketed like private property rights.

The sandstone plateau: Cane and eucalyptus plantations

About 30 km inland, a plateau of Natal sandstone begins. The foothills are steep; at the top, the altitude varies between 350–650 m (Figures 7.3 and 7.4).

Two major types of plantations dominate this area: sugar cane and eucalyptus. The tree plantations occupy the steep slopes below the plateau and the areas not suitable for cane, such as wetlands and rocky plots. Sugar cane is cultivated on the top of the plateau. The habitat is similar to the formerly white areas of the hilly zone.

Although cane is cultivated both in the hilly area and on the plateau, the higher heat and humidity in the coastal hills promotes the development of *Eldana saccharina*, a nematode which attacks sugar cane and forces farmers to cut their cane early, sometimes even before it is fully mature. Colder conditions on the plateau are not conducive to the development of *Eldana*, but slow down the rate of cane maturation.

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It is thus harvested after 18 to 24 months, for an average yield of 80–100 tons/ha. In return, the cane has a sucrose content higher than that of the coastal cane (cut after 12 to 14 months, for an average yield of 55–65 tons/ha). In addition, soils derived from sandstone plateau are deeper and are considered the best soil for growing cane.

These differences between the two regions have increased since the 2000/01 season. Planters are now paid on the basis of a quality index – recoverable value – which is, on average, higher on the plateau than on the coast.

A brief history of agriculture in the area

Soon after Natal became a British colony in the mid-19th century, the company JC Byrne and Co. implemented an immigration scheme in Byrne Valley, near present-day Richmond. In return for payment, prospective immigrants received a passage to Natal and were granted 20 acres (8 ha) per adult and 4 acres (2 ha) per child (Hocking 1992). Because of the climate, settlers rapidly turned to sugar cane production. Growing sugar cane was very labour intensive at that time. But as the few Zulu people who had settled on the south coast were extensive livestock breeders and subsistence crop growers (grains, tubers, vegetables, etc.),[2] they barely engaged in labour on settlers' farms.[3] This labour shortage was met by the importation of indentured Indian workers with five-year contracts.

Once this labour issue was solved, sugar cane expansion faced land availability problems and, in the 1870s, 'missions' were created: They were dedicated for black settlement (Hattersley 1938). These missions (Ifafa and Mtwalume) were to be part of the reserves of the future KwaZulu bantustan.

Cheap labour and land control were the main reasons why British settlers could rapidly develop in sugar cane production. Nevertheless, by the end of the 19th century, as mechanisation increased, producing sugar required more and more capital. Only a few families, the richest, were able to maintain a sugar factory. These millers-cum-planters (MCPs) were the origin of the present Illovo farms. The other farmers continued growing sugar cane, which they delivered to the few remaining mills.

However, mechanisation of the cane operations was limited. Steep slopes curtailed the use of tractors and machines to only 15 to 35 per cent of the farms in the hilly part of the study area (up to 75 per cent on the plateau). Cane planting and cutting remained totally manual. One can understand how cheap labour was the key point for the continuation of cane cultivation in this region of modest agronomic potential for cane growing. Mechanisation was focused on cane loading and transport: from oxen and rail to self-loader trailers, cranes and trucks (Figure 7.5). Once again, not all farmers were able to afford the latest machinery.

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Figure 7.5 Evolution of the productivity of work and of the technical efficiency of a sugar cane farm through the 20th century

1910

***Wages non-qualified workers**: (Indians and Blacks): 30 shillings/month + weekly ration*

1. Ox ploughing
2. Ox ridging: 2 MD/ha
3. Planting: 15–20 MD/ha
4. >4 hand-weedings: 6–8 MD/ha
5. Trash cutting and 'stacks system': 2–2.5 t/day/cutter
6. Hand (off) loading of wagons
7. Rail transport
   - Cut to crush delay: 46–72 h

Tractors
Trucks
Burning pre-cutting

1970

***Wages non-qualified workers:** R60/month max*

1. Ploughing:
   a. Moto-mechanised (15–35% on the coastal hills to 75% on the plateau)
   b. Ox pulling
2. Ridging:
   a. Moto-mechanised (15–35% on the coastal hills to 75% on the plateau): 1 MD/ha
   b. Ox pulling: 2 MD/ha
3. Planting: 15–20 MD/ha
4. Hand chemicals spraying 1.5 MD/ha
5. 2–3 hand weedings: 6–8 MD/ha
6. Burn cutting and 'stacks system': 3–4.5 t/day/cutter
7. Self-load trailers
8. Fixed crane for cane loading on truck: 45 min/truck
9. Road transport
   - Cut to crush delay: 24–48 h

Minimum tillage
Bell loaders
Trucks

1990

1. Total herbicides (Roundup): 14 MD/ha
2. Ridging:
   a. Moto-mechanised (15–35%): 1 MD/ha
   b. Manual: 26 MD/ha
3. Planting: 15–20 MD/ha
4. Knapsac chemicals spraying: 1 MD/ha
5. 2–3 hand weedings: 6–8 MD/ha
6. Burn cutting

Operation	Hilly area	Plateau
Cutting	'Stacks system': 3–4 t/day/cutter	'Rope system': 6–8 t/day/cutter
(Off-) loading	Self-loader trailer on the zone: moveable crane: 45 min/truck Or Bell loader: 15 min/truck	Bell loader fills the skip On the zone: by night, with Bell loader: 15 min/truck
Cut to crush delay	24–48 h	12–36 h

1994: labour laws:
- Minimum wage (R57/day, 2012)
- Maximum work week: 45 h/week
- Employer contribution for sickness, unemployment, retirement …
- Paid holidays

Season	Workers (out of cutters) for 1.000 t of cane	Labour cost (200 ha cane) R/t
1993–1994	>7	33
2010–2011	3–5	82

Note: MD = man day (full day of work for 1 person)
Source: Authors, data from Sezela Cane Growers Association; Mbowa & Nieuwoudt (1998); South African Department of Labour (2004); survey

Agricultural practices have also contributed to productivity gains, as shown in Figure 7.5. For example, burning of cane almost doubled the tonnage of cane cut by one man per day.

During the 20th century, sugar cane cultivation spread to all the other zones of the region. In the missions, it developed in Ifafa in 1915 to support a sugar mill.[4] Then, in the 1970s in Mtwalume, after a foot-and-mouth epidemic had devastated cattle herds, the emergence of new SSGs without capital was enabled by the sugar company.[5] The company implemented all the crop operations with its own labour force and, to make sure that the grower had enough money to pay for the work, the company instituted a retention fund.[6] With no control over the production process, SSGs in the missions became the equivalents of annuitants of a land managed by the sugar company. Only those who arrived in the missions later on, and who thus did not have much land, or those who lacked capital did not engage in sugar cane production (often only in subsistence crops).[7]

Sugar cane was also proposed by sugar millers to Indian landowners for cultivation (5–50 ha), after certain apartheid laws restricted their access to the Durban vegetable market.

On the sedimentary plateau, settlers developed eucalyptus cultivation for the mines and, from the 1950s, for the Umkomaas pulp mill. Cold-resistant sugar cane varieties were developed in the 1930s, which enabled cane cultivation on the colder plateau. With the wattle tannins market diminishing (Natal Society Foundation 1973), most settlers chose to plant cane instead of replanting wattle. Expansion of cane on the plateau led to the displacement of three Zulu communities to black reserves.

Soon after apartheid was abolished, land reform was implemented through two redistributive programmes. The first, the Land Redistribution for Agricultural Development (LRAD) programme, involved mostly the sugar company's farms. They were carved up into eight to fourteen smaller farms, starting from about 100 ha to over 1 000 ha, and sold to black people.

Illovo had anticipated the land reform. Even before the LRAD programme was implemented, it had already subdivided and sold three farms out of the seven it owned (Figure 7.6). To ensure its cane supply, the sugar company obliged the beneficiaries to sign a twenty-year cane supply agreement which compelled them to maintain at least 95 per cent of the farm area under cane. To acquire the farm, the beneficiary was required to pay a 10 per cent deposit, which few black people could afford. The balance of the purchase price was covered by a twenty-year loan with interest rates varying between 9 and 16 per cent (according to the prime rate). However, the farms were sold without any equipment and many of the 'emerging' farmers had neither farming knowledge nor experience.

Three broad types of new freehold growers (NFGs) have emerged, the difference being mainly related to access to capital.

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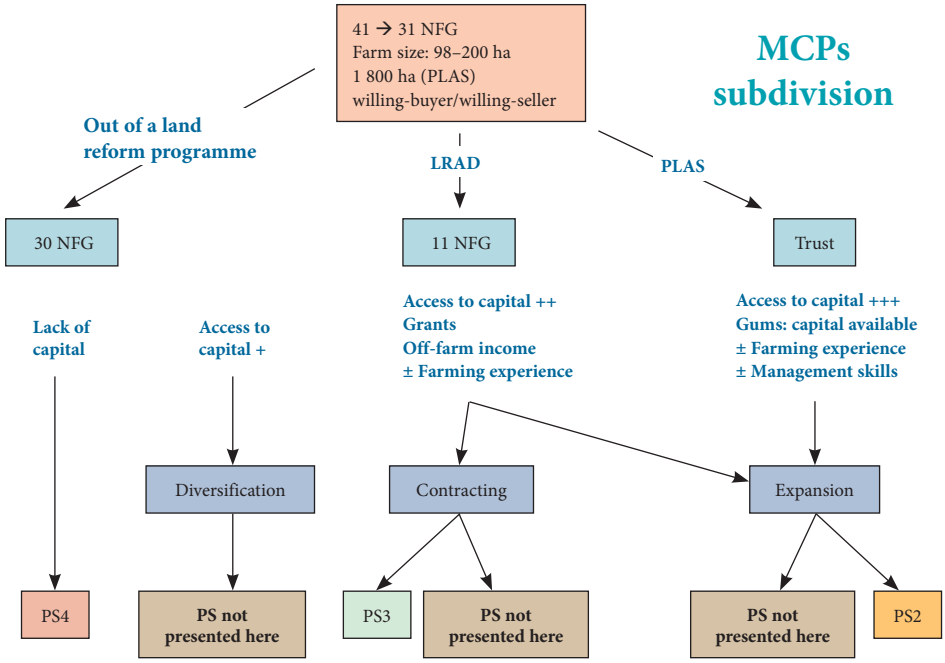
Figure 7.6 Sale of the sugar company farms (MCPs)



Note: PLAS = Pro-Active Land Acquisition Strategy
Source: Authors, data from survey

Firstly, beneficiaries who had limited access to capital could not invest in their farms. Some of them had to sell their farms; others engaged with a contractor to carry out field operations, but are mired in loan repayments (see PS4). These are often recently retired people who used their retirement packages to pay the 10 per cent deposit. With no further savings or income, they have not been able to buy equipment or employ workers.

Secondly, NFGs with reasonable access to capital have bought equipment and have tried to offset a small farm (less than 50 ha) under cane. They also subcontract, and those with farms with large tracts of bush land not suitable for cane growing have diversified their production (a smaller annual production out of a smaller acreage of cane – 4 300 tons/year for 100 ha of cane) by combining it with cattle rearing.

NFGs developing contracting are mainly found on the plateau where cane cycles are longer (18 to 24 months, as opposed to 12 to 16 months along the coast) because of the colder climate. These growers (PS3) are only able to harvest a small portion of their farm every year (55 ha out of 100 ha under cane). Thus, to break even and make the best use of their equipment, they use their machinery to do contracting for other NFGs or growers on the missions. More rarely, some growers on the hilly zone

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engage in contracting to compensate for a small area under cane. They are mainly Indian growers who have historically had access to a limited plot, but have managed to buy machinery thanks to off-farm income, for example from a shop.

Thirdly, the best-off NFGs, who often work(ed) for the government, have been able to buy equipment and develop their farms, commonly by buying the farms of other NFGs who were unable to sustain their cane production. Their trajectory has in most cases converged with that of white farmers. A new concentration of the land in the hands of a small black elite has occurred, as evidenced by the fact that only 31 of the 41 NFGs are still farming (Figure 7.6).

Taking account of the failures of the LRAD programme, the government implemented a new programme in the region in 2007, the Pro-Active Land Acquisition Strategy (PLAS) (see Figure 7.6, PS2). Through PLAS, the government has bought from Illovo a fully equipped farm (1 800 ha) and is now leasing it to a group of beneficiaries on a ten-year renewable lease contract. Yet, since neither the group nor the beneficiaries themselves are the owner(s) of the farm, investments must rely on the members' personal financial resources.[8] Therefore, only people with good access to capital can maintain and develop such a farm.

An additional land reform programme, the restitution one, is focused on communities displaced during apartheid. In the framework of the restitution programme in the study area, the government has bought farms where Zulu communities used to live before being dispossessed, and restituted them to a trust representing the community. The management of the trust is elected by the community and is generally composed of community leaders, who often have (good) off-farm revenues. The trust is the owner of the farm and a company established for the purpose runs it. The distinction between trust and company is sometimes fictional since members of the trust are also members of the company (Figure 7.7).

In theory, the profit is split into two parts.[9] The first remains in the farm to cover the running costs and investments,[10] while the second is supposed to be used by the trust for community development projects such as schools and roads.

Once again, the farms are bought without equipment, hence a contractor is required for the field operations, at least during the first years. The contractor is also supposed to be a mentor and to capacitate members of the community to manage the farm. The two farms which have been restituted in the study area have followed very different trajectories, essentially because of the divergent conditions of the farms. In the first case, the farm is much bigger, with young cane and a gum tree plantation ready to be felled (see PS5). The second community (PS6) has received a very small farm (50 ha), with old cane and many bush parcels.

Contrary to the above-mentioned communities who have decided to take up the management of the farm, even though hardly anybody in the community has farming

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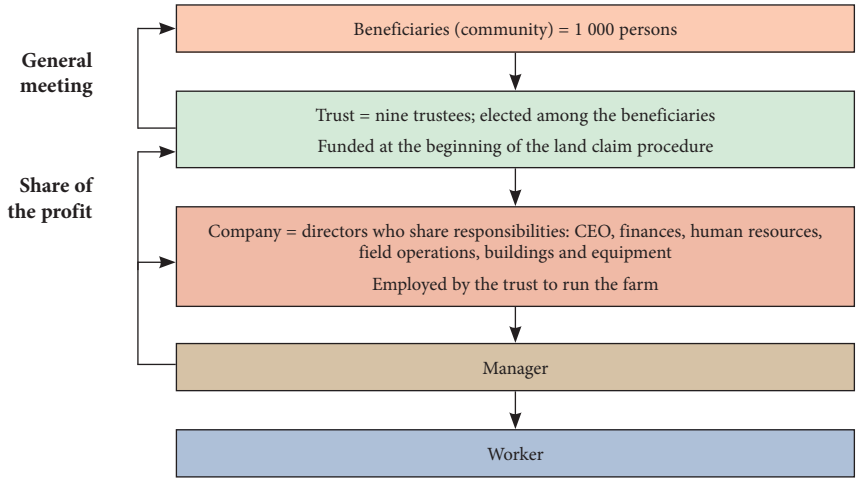
Figure 7.7 Land restitution procedure in the Sezela region and persistence of the pre-agrarian reform social relations



Source: Authors, from survey

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knowledge or experience, the members of a third community (not presented here) have chosen to lease their farm back to its previous white owner.

Black communities of the former missions are also targeted by other government programmes. 'Development' projects like community gardens and free seeds have been implemented to enhance agriculture. As far as sugar cane is concerned, the Recapitalisation and Development Programme (RADP) is being implemented to try to counteract the decrease of cane production, due partly to the rise in input prices since the 2000s. Since this programme covers planting and ratooning costs, a new generation of annuitant small growers is mushrooming. The project also targets NFGs and Indian growers.

The significant increases in input costs during the 2000s have also affected white farmers. Some of them are gradually turning to macadamia nut production, which appears to be very profitable at the moment.

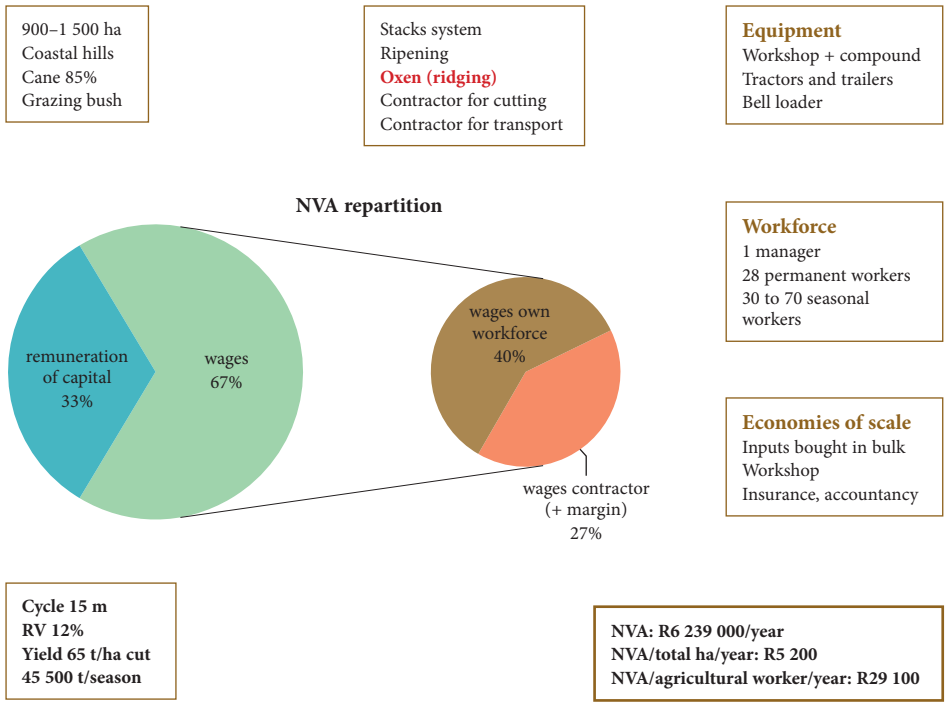
Characterisation of the production systems identified

The evolution patterns resulting from history have led to a huge diversity of production systems; indeed, nineteen were identified. Not all will be presented here; we will only focus on certain points of interest.

Integrated farms – PS1 (MCPs)

One direct consequence of the early history of sugar cane in the region is the existence of farms integrated with the operations of the Illovo sugar company: the MCPs. Even if the quality of their cane is relatively low owing to sandy soils and short cycles, Illovo has a major interest in keeping some of these farms: it ensures a minimum delivery to the mill and prevents this land from being turned to other production. Secondly, it enables Illovo to engage economies of scale on administration and bulk purchases. However, the trend is to sell these MCP farms, especially through land and agrarian reform programmes. This is partly attributable to political pressure (51 per cent of Illovo's shares belong to Associated British Food plc), but it is also a strategy of Illovo to favour investments in other countries like Swaziland where political pressures are lower and cane production is more profitable (through irrigation possibilities). Illovo still owns two roughly 1 000 ha farms in the study area (seven farms before 1994), which produce 10 per cent of the cane delivered to the Sezela mill each year. On these farms, most work is done through their own workforce. For a few years now, the cane harvesting has been done by a

Figure 7.8 Production system of the company farms (MCPs) (PS1)



Note: RV = recoverable value, NVA = net value added
Source: Authors

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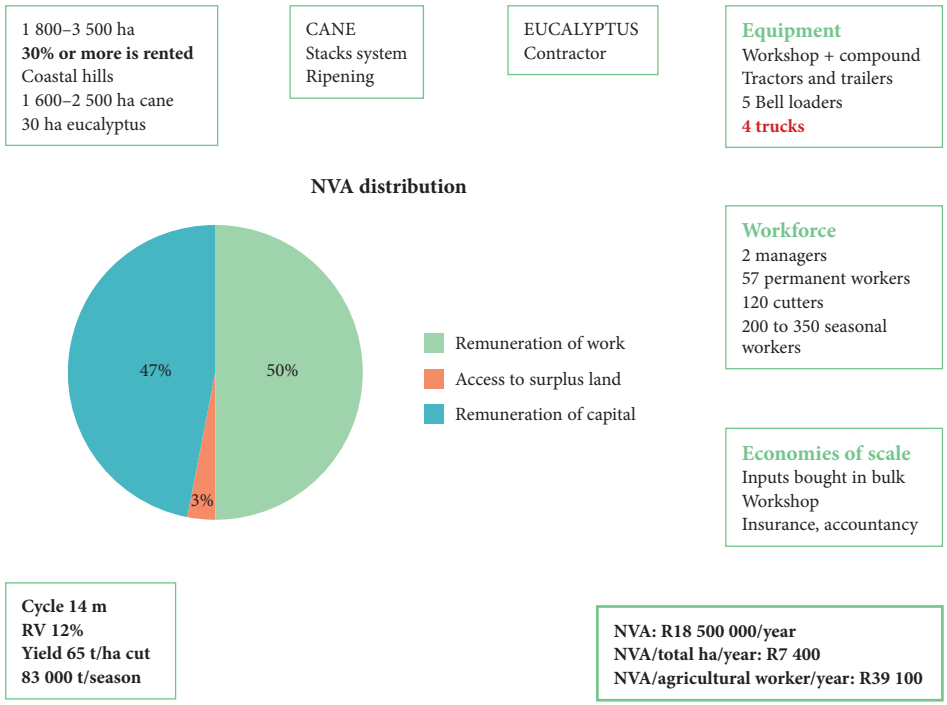
contractor. Trade unions are often said to be one of the causes of this change. One particularity of these farms is the use of cattle for ridging as they are much quicker than hand-ridging (2MD/ha versus 26MD/ha) on steep slopes (Figure 7.8).

Capitalist farms owned by a diversified company (PS2)

Some 45 per cent of the cane production in the study area is produced on 36 per cent of the total area under cane (each farm relies on 1 800–3 500 ha) by 8 per cent of the growers. These capitalistic enterprises own numerous farms, also in other provinces. They are not only sugar cane farms; they also own citrus and beef farms, or offer other activities, such as tourist accommodation. These enterprises are the result of the expansion of British settlers' family farms. The shareholders are still family members, but the managers are often not. The high level of capital enables these farms to own their own trucks for transporting the cane to the mill and to use artificial ripening to upgrade cane yields (Figure 7.9).

Figure 7.9 Production system of the capitalist farms owned by a diversified company (PS2)



Note: RV = recoverable value, NVA = net value added
Source: Authors

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Recently, some capitalist farms have turned partly to macadamia production. For the above system, the internal rate of return (IRR) for converting 10 per cent of the area under cane per year to macadamia is almost 17 per cent, as opposed to the IRR of the business-as-usual model (replanting 10 per cent in sugar cane), which is only 7.2 per cent.[11] Illovo fears that more and more white farmers might quit sugar cane for macadamia, which would increase the shortage of cane brought to the mill.

Moreover, the owners of these farms will not hesitate in selling them if they become less lucrative. Beneeva, the only PLAS case in our study area, is working under this production system (PS2). Looking at the economic results of this type of farm (Figure 7.9), as opposed to the many failures of the first land reform programmes, we can assume that the government would prefer to buy such farms and lease them back through PLAS, rather than subdivide them before the sale.

Cane growers (mainly) and contractors (PS3)

Climatic conditions on the plateau slow the growth of sugar cane; cycles vary between sixteen and twenty-four months. Farmers can thus only harvest a smaller portion of their cane per year: on 100 ha under cane, only 55 ha are cut every year. Thanks to off-farm income, these growers, mostly white farmers but also a few beneficiaries (NFGs) of the first programmes of land redistribution, have managed to buy equipment, especially a Bell loader which enables them to cut cane in ropes. They can cut twice as much cane per day as in a stacks system. To maximise the use of their equipment, these growers often offer their services for cane cutting, mainly to small growers in the missions and to land reform beneficiaries. Revenue from contracting represents 12 per cent of their total farm income (Figure 7.10).

These growers have benefited from other growers' lack of capital and inability to buy equipment. Nevertheless, this might change in the years to come. Indeed, the RADP programme, which had just been launched in the region during the time of the survey, aims at providing NFGs with equipment and establishing small black contractors in the missions. In the wake of this, the place for this type of grower could be as mentors for the emerging contractors.

The NFGs included in this category often have off-farm jobs (teachers, for example) or are former Illovo farm assistant managers, allowing them better access to capital. Certain other growers with good access to capital have managed to expand their farms by buying out others, thanks to off-farm money such as retirement pensions, and now own farms up to 500 ha in size in the hilly part of the study area. They have their own equipment and have converted to production systems implemented by white growers.

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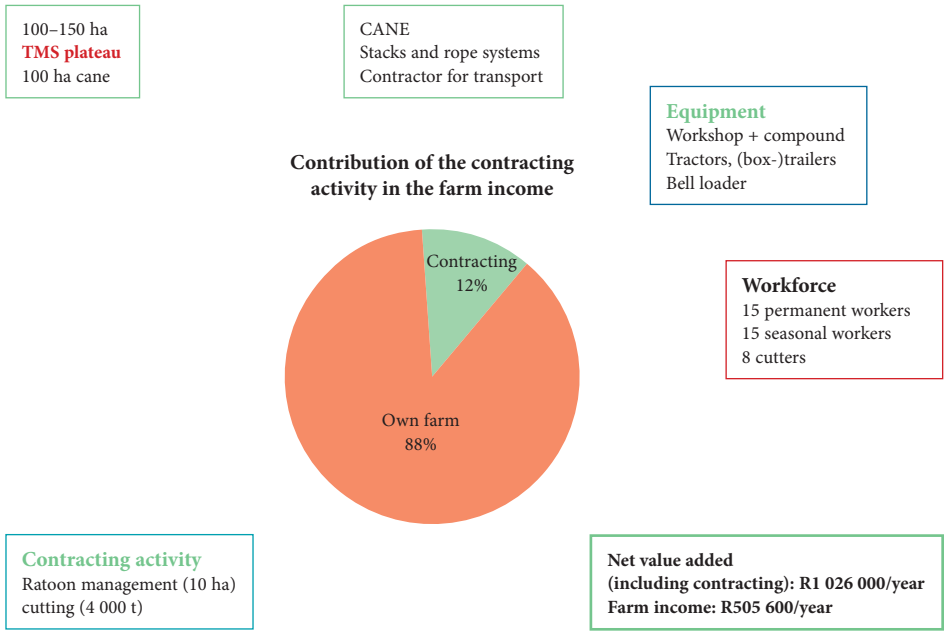
Figure 7.10 Production system of the cane growers (mainly) and contractors (PS3)



Note: TMS = Table Mountain sandstone plateau
Source: Authors

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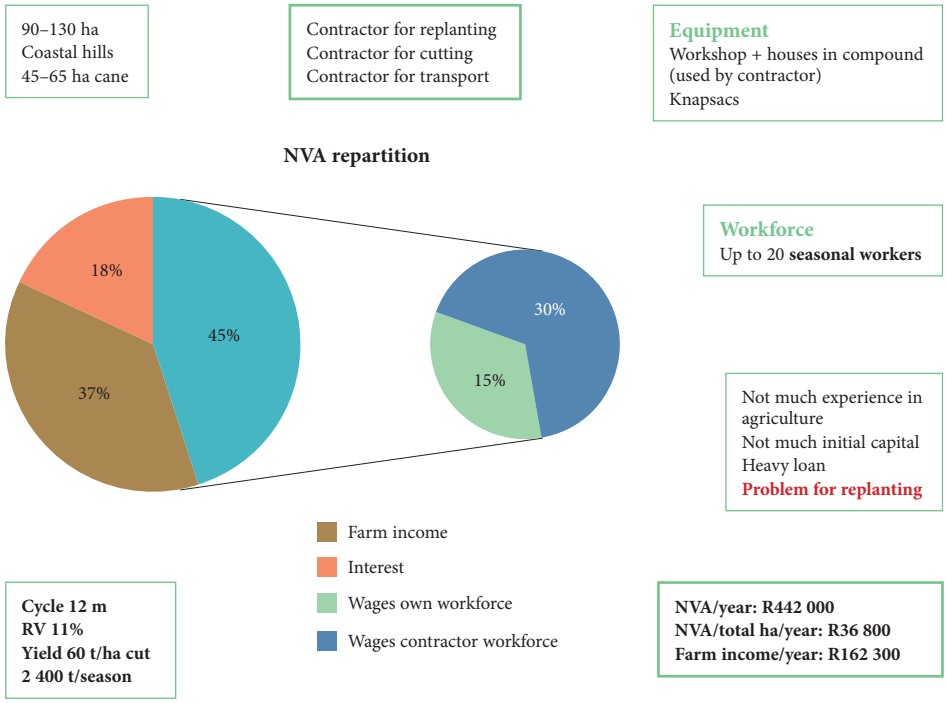
NFGs with no equipment and using a contractor (PS4)

At the lower extreme of the NFGs are those who have acquired their farms with limited access to capital and/or as a result of facilitation.[12] However, related to their incapacity to invest in their farms in order to replant the cane or buy equipment, the farms are decaying and are stuck in a vicious cycle: the less they produce, the fewer funds they generate to pay back their loan or to replant cane. The quality of the cane is consequently very low. The yield does not reach over 60 tons/ha and the recoverable value is only 11 per cent (Figure 7.11).

Since they cannot afford to pay wages every month, they do not employ permanent workers, only a few seasonal workers. Most of the operations, at least the mechanised ones, are done by a contractor.

The contractor who is in charge of the cane cutting is paid directly by Illovo upon delivery of the cane to the mill, and so is the bank for the loan reimbursement. Furthermore, to ensure that the grower will have enough money to buy chemicals and to pay the contractor, Illovo obliges the growers to put a retention scheme in place. When the cane is delivered at the mill, R130/ton is retained by Illovo to build up a retention fund. The money in this fund is used all through the off-season to buy

Figure 7.11 Production system of the NFGs with no equipment and using a contractor (PS4)



Note: RV = recoverable value, NVA = net value added
Source: Authors

inputs and pay the contractor. Finally, after deducting the payment of the contractor for harvesting, the retention, if money remains from the cane delivered, is given back to the grower.

The current increase in input costs and the less favourable climatic conditions over the last few years (floods in 2008, drought in 2010/11) have made it very difficult for growers to accumulate capital. This is especially so as Illovo 'proposes' advances on the money from the delivery of the next season's cane when there is not enough money in the retention fund to undertake the operations. This cash flow advance is like a loan which will be paid back at the next cane delivery. But if the cane has again suffered bad climatic conditions, the delivery is not sufficient to cover all the expenses, and the advances system continues. These growers are one of the main targets of the RADP programme.

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Farms restituted to black communities through land restitution programmes (PS5, PS6)

The RADP programme also targets beneficiaries of land restitution. As the farms have been restituted without any equipment, the use of a contractor for most of the operations is necessary. The RADP programme would enable the farmers to acquire machinery and replant cane.

Even though the farm income of the first case of restitution (PS5) seems high,[13] and might have enabled the farm to buy some equipment,[14] no major investment has taken place on the farm (Table 7.1). Neither has the community benefited from the portion of the farm income which should be used for community development. As a result, there are tensions and discords regarding the management of the farm, which in effect penalise the community. If these issues are not dealt with, the situation might deteriorate since the cane will be old, will need to be replanted and the gum tree production will fade in years to come.

In the second case (PS6), only 50 ha have been restituted so far. The cane is very old and needs to be replanted and as a result cane production is very low. This not only prevents the company from being able to invest in the farm, but also the community

Table 7.1 Production system of the farms restituted to communities through land restitution programmes (PS5 and PS6)

	Agro-ecology	Contracting for	Workforce	Production	Economic results
PS5: cane and gum, big size	**645 ha** TMS plateau 565 ha cane 80 ha gum	Cane harvesting Transport of cane and gum	1 manager 50 permanent 5 seasonal tree felling and 9 for operations on cane	CANE Cycle 20 months RV 13% Yield 65 t/ha cut 14 800 t/season No replanting EUCALYPTUS 100 t/ha cut 2 000 t/year All is cut in 4 years	NVA: R3 445 000/year NVA/total ha/ year: R3 660 Farm income: R1 317 000/year **In years of gum production** 1 000 beneficiaries
	CANE	EUCALYPTUS			
Share of the GP	86%	14%			
GVA/year/ha of culture	R4 900	R8 600			
PS6: cane, small size	**50 ha** TMS plateau 35 ha cane	Cane harvesting Off-season operations transport	1 manager 1 permanent worker 15 seasonal workers	Cycle 22 months RV 13% 2–3% replanted/y Yield 65 t/ha cut 1 020 t/season	NVA: R189 000/ year NVA/total ha/ year: R3 800 Farm income/ year: R16 400 50 beneficiaries

Note: RV = recoverable value, NVA = net value added, GVA = gross value added, TMS = Table Mountain Sandstone plateau, GP = gross product
Source: Authors

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from benefiting from it. Farm income represents only 9 per cent of the net value added (NVA); 91 per cent goes to wages for the farm workforce and the payment of contractors. The community is still waiting for two more farms to be restituted (Table 7.1).

Production systems among small-scale growers in the former missions (PS7, PS8)

Sugar cane was introduced in the reserves as early as 1915 in Ifafa. We can distinguish two production systems among SSGs: those who have 2–6 ha (PS7) and those who have below this threshold (PS8). The first type is only found in Ifafa. They are the descendants of the wealthiest families and remain so, thanks to permanent jobs. The SSGs of PS8 are found in both missions. In Ifafa, their land is smaller than 2 ha because of family subdivision and/or land sales.[15] In Mtwalume, since sugar cane was introduced much later (in the 1970s), population density was already higher and available land smaller.

Because of lack of capital and know-how, both these types of cane growers employ a contractor to work their sugar cane and are subject to Illovo's retention system. Yet, cane growers who have less than 2 ha (PS8) rely solely on social grants (60 per cent of their total income) and temporary jobs, and consequently do not have enough money to replant their plantations. Production is collapsing and land is turning into bush, especially since the 2000s and the rise of input costs (Figures 7.12 and 7.13).

In none of these production systems does 'income' from sugar cane reach the survival threshold, and families survive due to permanent jobs (PS7) or social grants (PS8).

Production systems in the former missions without sugar cane production (PS9, PS10)

In the former missions, the government not only focuses on cane growers, but also on households that do not grow sugar cane. These are either new inhabitants who have access to very little land, or families who used to grow cane, but have sold pieces of their land or let their plantation turn fallow. Most of these households are affected by 'development programmes' that try to enhance subsistence farming. In these production systems on the previous missions, farm income reaches the survival threshold. Access to capital is in these cases the foremost factor differentiating the production systems. If we rank production systems by decreasing access to capital, we find: cattle + vegetable garden; goats + vegetable garden (PS9); vegetable garden; staple food production, no vegetables.

These systems are complemented with animal-rearing activities. Animal rearing has a twofold role as a source of fertilisers and capitalisation. Cattle are rarely used for field operations. In Ifafa, the gardens are too small to make it profitable to buy harrows or ploughs and, in addition, cattle often graze far from the houses. In

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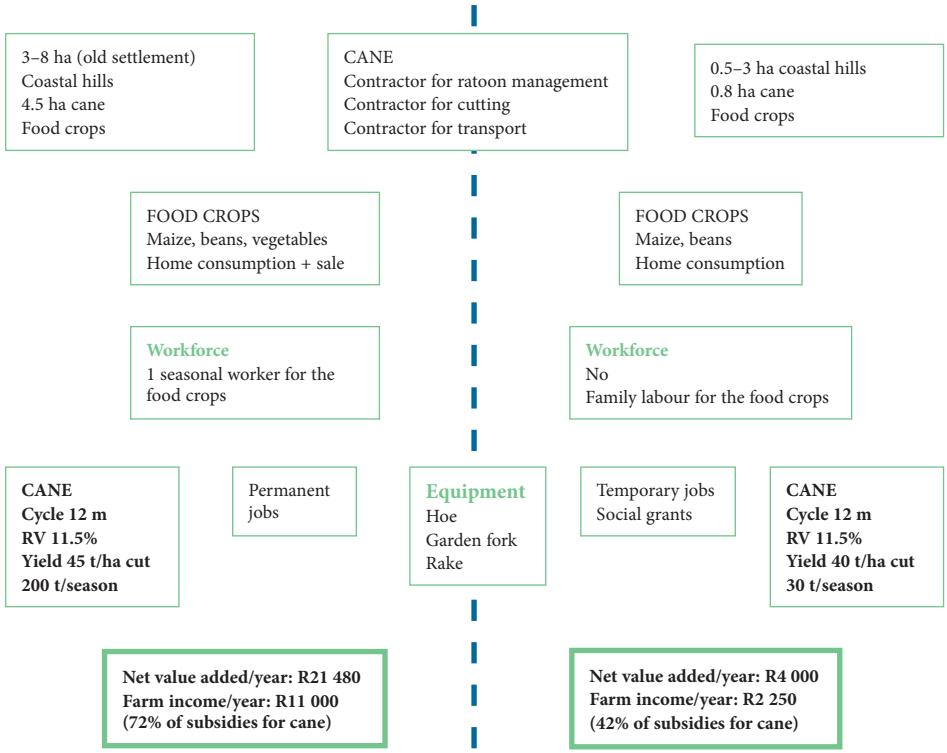
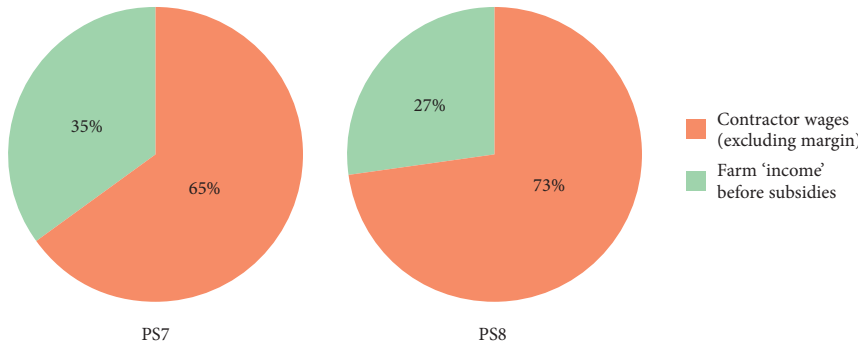
Figure 7.12 Production systems in the former missions – PS7: more than 2 ha of sugar cane and permanent job (left), and PS8: less than 2 ha of sugar cane and social grants (right)



Source: Authors

Figure 7.13 Repartition of the NVA in PS7 and PS8



Source: Authors

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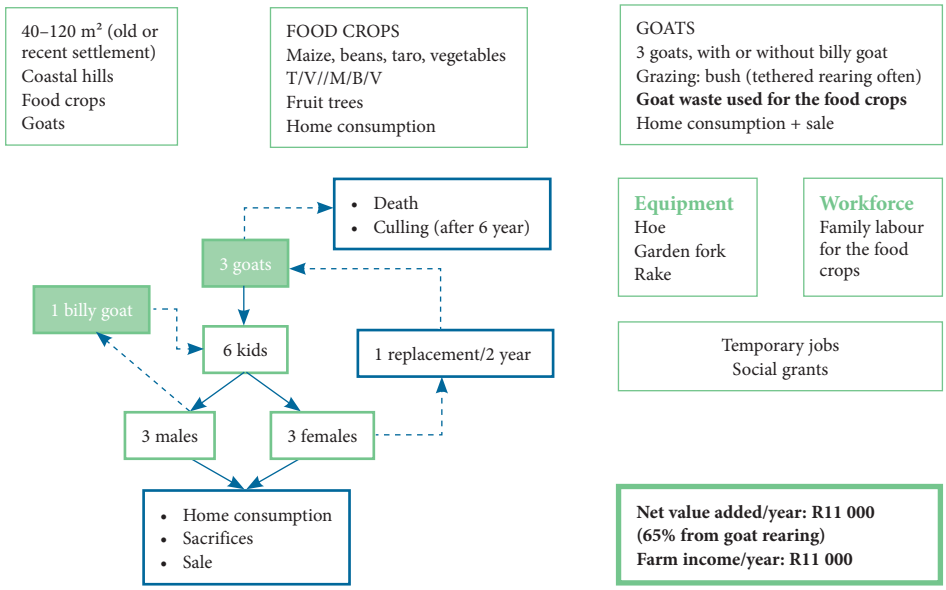
Mtwalume, the cost of the equipment is the core issue. Goats are preferred to cattle because they can wander without shepherds, they do not require much land, their reproduction cycle is faster and they are cheaper to buy. Goats are used for their own consumption and especially for Zulu ceremonies, which leads to alternating phases of capitalisation and decapitalisation.

Many families have settled in the former missions since the 1990s to look for jobs. However, their financial means have only allowed them to acquire pieces of land accommodating a house, with very little space around it for subsistence farming. Land and capital available for cultivation are thus limiting factors. Therefore, these households prefer to grow only maize and beans in association, as well as tubers such as taro (*amadumbe*) and sweet potato, which are their staple foods. Some beans and maize are kept to be used as seeds for the second production cycle. These plants are also less time consuming to cultivate than vegetables, as there is less weeding and no watering (Figure 7.14).

These families rely on social grants. Their annual farm income (R1 100) is lower than the monthly old age pension (R1 200) (Figures 7.15 and 7.16).

Government support focuses on these families in the former reserves that are affected by a lack of capital and/or land. However, the results of these projects are

Figure 7.14 Production systems in the former missions: Goat rearing and food crops including vegetables (PS9)



Note: T/V//M/B/V = Crop rotation sequence over 2 years: taro/vegetables (year 1)//maize/beans/vegetables (year 2)
Source: Authors

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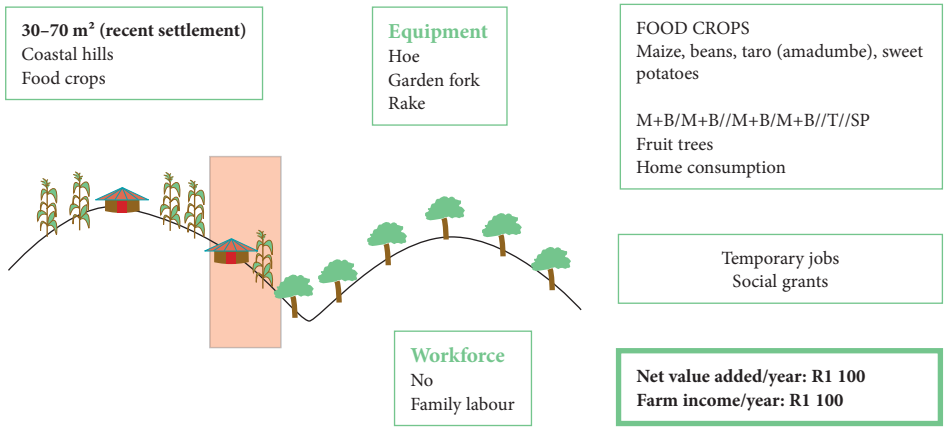
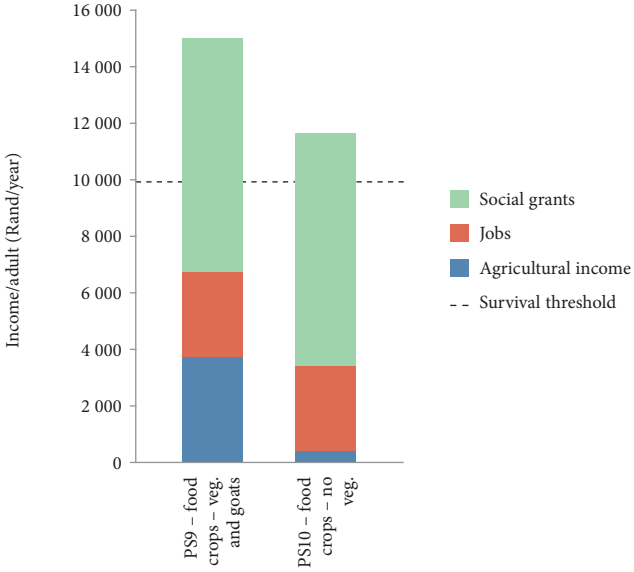
Figure 7.15 Production system in the former missions: Food crops without vegetables on very small plots (PS10)



Note: M+B/M+B//M+B/M+B//T//SP = crop rotation over several years: maize + beans (intercropped)/maize + beans//maize + beans//taro//sweet potatoes
Source: Authors

Figure 7.16 Comparison of the share of agriculture in family resources between PS9 and PS10



Source: Authors

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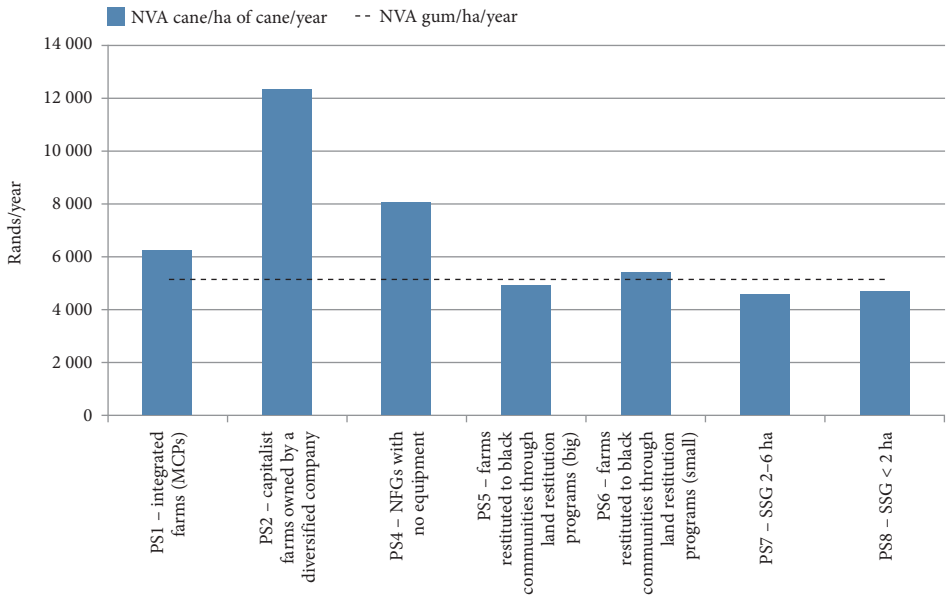
compromised by the fact that few people are involved in the community gardens; they are cultivated mainly by elderly women. In addition, projects which provide free seeds suffer from a lack of funds and families do not receive seeds every year.

Comparison of economic results

Comparison of the NVA of sugar cane-based systems

Systems creating the greatest value added per hectare are those which have their own equipment and their own labour force. Farms of the sugar company (PS1), although managed in a capitalist way, have a relatively lower value added per hectare, especially compared to PS2. The high management costs and complex administration tend to reduce the productivity per employee. An 'exception' is PS4, which generates a high value added per hectare, although the growers have no equipment. These growers tend to offset their shortage of money to buy weedicides by increasing hand-weeding. This contributes to a high value added per hectare, but requires more work (Figure 7.17).

Figure 7.17 NVA per hectare of sugar cane-based systems



Note: In this figure and in Figure 7.18, we have represented the NVA of a gum tree-based production system because gum trees have been a competitor for sugar cane in the region.
Source: Authors

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The use of a contractor, used on the farm only for the time required for work to be done, helps to increase the daily labour productivity of the system. That is why the labour productivity of small farms subcontracting all farming operations (PS7 and PS8) is close to that of larger farms (PS2). For these systems (PS7 and PS8), the wealth created per unit area is, however, low (Figure 7.18).

Post-apartheid labour laws have also impacted on labour productivity as they have contributed to the diminishing number of workers required to grow cane. From the more than seven workers (except for cane cutters) employed for 1 000 tons of cane in 1993, only three to five are employed today. Since manual work is an intrinsic characteristic of cane production systems, it is unclear what the sustainability of these systems will be if labour costs keep increasing in an effort to reduce inequalities.

Comparison of total NVA and farm income

Differences in farm income are extreme (Table 7.2). Capitalist systems generate the largest income, at more than R10 million per year for PS2. At the other extreme, the smallest systems with food crops with neither vegetables nor livestock provide an income of about R1 000/year (PS10). In the former reserves, the presence of a bovine or ovine herd generates a (relatively) high value added, thanks to a high gross product and the absence of costs. Despite an initial investment that not all

Figure 7.18 Daily labour productivity in sugar cane-based systems

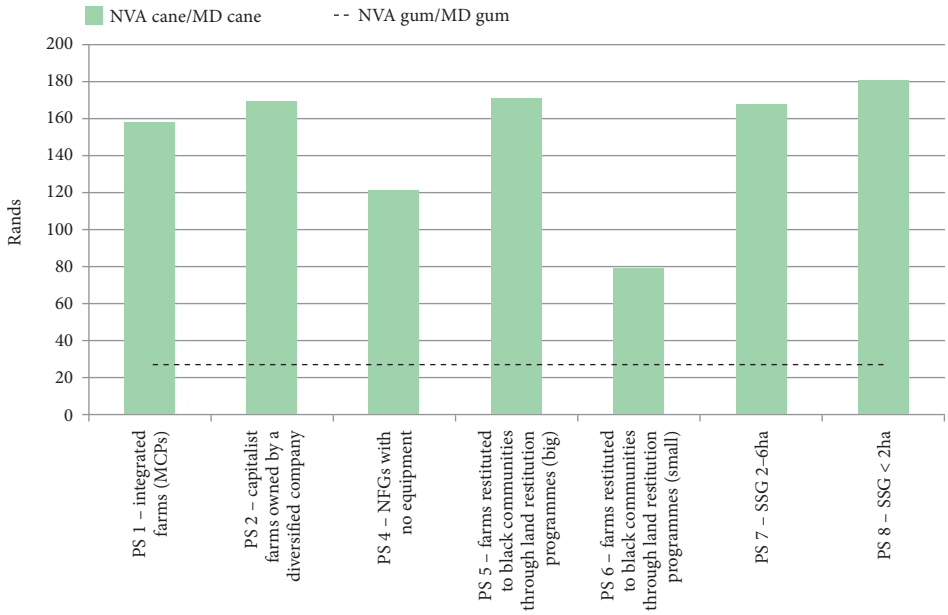

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Table 7.2 Comparison of total NVA and farm income in the Sezela region

Production system	Total area (ha)	Total NVA (min–max) (R1 000)	Total farm income (min–max) (R1 000)
PS1: integrated farms (MCPs)	900–1 500	6 240–11 840	2 075–4 900
PS2: capitalist farms	2 000–3 500	13 800–28 000	5 930–14 215
PS3: cane growers (mainly) and contractors	90–150	610–1 235	116–415
PS4: NFGs with no equipment and using a contractor	90–130	310–485	101–183
PS5: land restitution – cane and gum – big size	900–1 000	3 300–3 670	1 262–1 402
PS6: land restitution – cane – small size	45–55	170–208	14–18
PS7: more than 2 ha of sugar cane and permanent job	3–8	8–35	2–20
PS8: less than 2 ha of sugar cane and social grants	1–2	2–4	1–2
PS9: former mission – goat rearing and food crops + vegetables	0.004 –0.012*	5–15	5–15
PS10: former mission – food crops without vegetables	0.003–0.008	0.5–1.5	0.5–1.5

Note: * Garden only, excluding grazing areas
Source: Authors

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households can afford, the interest in cattle or goat rearing is great since the area has natural vegetation in open-access areas, including roadsides and riversides. In the former reserves, sugar cane can generate higher incomes than homes without cane, provided there is a usable area of several hectares (PS5 and PS6). Below 5–6 ha (PS7 and PS8), cane does not yield more than systems with livestock (PS9), and under 2–3 ha it does not bring in more than food crop systems without livestock.

Conclusions

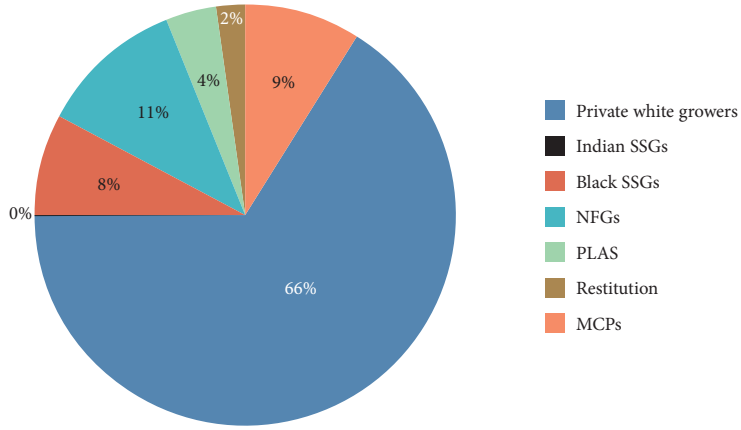
Land repartition versus cane supply repartition: A non-proportional relationship

South Africa's land reform transfers of land from white to black beneficiaries currently cover one-sixth of the territory historically occupied by white people in the study area.

The PS2 capitalist systems ('private white growers' and 'PLAS' in Figure 7.19) occupy 36 per cent of the cane area of the study zone, but are numerically very poorly represented (less than a dozen farms). They provide 45 per cent of the cane for the mill.

With the redistribution and restitution of land, farms belonging to the Illovo sugar company (PS1) have lost their importance. Spatially, they have no more than 9

Figure 7.19 Distribution of cane supply at Sezela sugar mill (volume of sugar cane, 2012)



Source: Authors, from interviews with SASA and Sezela Cane Growers Association

per cent of the cane area left; quantitatively, they realise only 9 per cent of the production. Before these land transfers, they used to provide between a quarter and a third of the Sezela mill supply.

Plantations resulting from land restitution (PS5 and PS6) extend over 6 per cent of the total area under cane, but their participation in the cane supply is limited to 2 per cent. This reflects the difficulties faced by these farms.

The only farm transferred to black beneficiaries through the PLAS programme provides 4 per cent of the total cane supply. In contrast, the recipients of previous programmes (more than 30 NFGs) contribute only 11 per cent, while they cultivate a total cane area nearly four times larger. The farmers of the former reserves (SSGs of PS7 and PS8), although numerous, provide only 8 per cent of the cane.

The discrepancy between the cane produced and the potential production (related to the areas occupied) raises the question of the effectiveness, as well as the relevance, of the country's land reform programmes, at least from an economic perspective.

Current trends: Land reform, just to maintain cane production?

The first observation regarding the region's agricultural dynamics relates to the decrease in cane production, particularly associated with land redistribution and land restitution. At least in its earliest forms, land reform gave access to land to black people who do not necessarily have the resources or expertise to grow cane. Therefore, there is a progressive encroachment of bush on the plots and a general decline in agricultural production.

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In this study area, agrarian reform is based on the model of large white farms (family business farms or managerial systems). Among the beneficiaries of the first reform programmes, it appears that access to non-agricultural capital at the time of acquisition of the farm is the key factor for the success of the NFGs in maintaining cane supply through the imposed model of production. The farms were sold without equipment and NFGs were unable to acquire it. They therefore have no choice but to use a contractor for most, if not all, the operations. Strangled by the repayment of their loans, the new farmers without capital are unable to replant and can only be passive spectators to the diminishing yields and returns of their cane. This trend is the foremost component in the decrease in cane production and the global decline in agricultural production.

Aware of the difficulties faced by many of the first beneficiaries of land reform, the government introduced the PLAS and RADP land and agrarian reform programmes. According to these programmes, the state buys farms, recapitalises and restocks them, and leases them to the beneficiaries with the aim of maintaining production. Such initiatives would certainly prevent reform beneficiaries from suffering the same financial constraints as the NFGs, those constraints largely being the cause of the loss of productivity of their farms. Although the PLAS programme seems to generate the highest income, there are few beneficiaries who reproduce a capitalistic model. These observations lead one to question whether this programme is solely a transfer of land from white to black hands and not a true redistribution. Also, the farms are only leased and are bound to Illovo by a twenty-year cane supply agreement, compromising the beneficiaries' empowerment and capacity building. In particular, the RADP programme imposes certain conditions on beneficiaries to ensure the continuity of production. Small-scale cane growers have to accept the withholding of 10 per cent of the gross proceeds of their cane for current operations and an additional 10 per cent for a ten-year replanting. Although the programme does not involve any direct financial contribution from the beneficiary, the 'facilitation' of production deprives the landowner of any control over his or her production process. The 'income' received at the end of the cycle, comparable to a variable rent paid by the sugar company, is made up of more than 40 per cent of subsidies. The trend is therefore both increasing control by the sugar company and contractors, and massive public support for the sugar industry.

As far as agrarian reform is concerned, one wonders if trying to reproduce white farmers' cane production systems is really beneficial for the communities concerned. First, related to the lack of know-how and capital, the communities and beneficiaries are rapidly dispossessed of the production process through contracting, the retention scheme and season-based loans. Most of the farm workers are contractors' workers, while there is a high unemployment rate in both communities (up to 95 per cent within one of the communities). Secondly, these farms need significant government financial support to keep going. The weakness of these farms reveals the flaws in the land reform programme, as well as initial agrarian reform processes.

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Trying to support cane production at any cost, the government in 2010 finally set up an extensive programme of public support in the form of the RADP, which targets not only NFGs and beneficiaries of land restitution, but also the SSGs in the former reserves. The latter provide about 9 per cent of the annual domestic production of sugar cane (SASA 2012).

Development prospects: Towards the promotion of alternative production systems?

Prominent in the landscape, sugar cane has shaped the contemporary agricultural history of the region. Today it is a major economic activity in KwaZulu-Natal and in South Africa. Therefore, the decrease in sugar cane production in the Sezela region is a serious and legitimate concern for a large number of public and private actors.

However, it seems appropriate to reconsider the public policies which support the sugar cane industry. Is supporting a model which relies heavily on subsidies of any interest? Only a thorough study of economic profitability (of the RADP programme, for example) would answer this question, but the analysis presented here already provides food for thought.

Indeed, the diagnosis has revealed that the value added created per hectare by food crops (around R230 000/ha/year) is more than forty times the value added generated by sugar cane production (around R5 000/ha/year). Public subsidies for the establishment of poultry farms or vegetable crops have already been implemented for households with little access to land (PS10). Products are usually for home consumption, with sales of surplus. One could imagine the extension of such models to households with land currently under cane (PS7 and PS8). These systems, generating high value added and being labour intensive, appear to meet multiple goals, such as food security, poverty reduction and employment. Moreover, surveys among fruit and vegetable sellers in the towns of the area revealed that they source from white farms, sometimes located several hundred kilometres away. These towns are potential local outlets (market sellers, supermarkets, schools, etc.).

However, there are many obstacles to their development: lack of involvement and of capital, limited access to land, lack of transport facilities and marketing. As long as these issues are not tackled, the opportunity cost of the workforce will remain too high to encourage agricultural activities, in particular for the youth.

The gradual conversion of large capitalistic cane plantations to macadamia is another symptom of the difficulties faced by the sugar industry, and has led to a loss of supply for the industry for at least thirty years. The current high price of macadamia nuts has enticed many South African farmers to this crop. However, a massive increase in macadamia nut production in the coming years may reduce the market price, which throws into question the long-term profitability of that strategy.

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In the meantime, the recent diversification observed on large farms puts the future of cane in the region in doubt.

Finally, a trend which is worth mentioning while reflecting about the future of sugar cane in the Sezela area, is the increasing interest of Illovo and white capitalist farmers in sugar cane farming operations abroad. Lower land and labour prices, flatter land enabling mechanisation of cane cutting and less prominent political pressures are (according to our survey) the main arguments accounting for this interest in farms in Swaziland, Mozambique and Malawi. Therefore, even if the Sezela mill produces high-value by-products, the maintenance of the mill might be compromised in the years to come.

Notes

1 Indian people arrived in the area at the end of the 19th century to work on the sugar cane farms. After they finished their compulsory working period, they were sent into dedicated areas, as were black people.

2 They were mainly survivors of the Shaka conquest and families escaping Zululand and recently settled in south Natal.

3 The operations schedule for crops was frequently incompatible with the sugar cane operations schedule.

4 Profiting from the hut tax, this miller convinced the Ifafa mission chief to let his people grow cane in order to have money to pay the tax.

5 This epidemic might be a consequence of an overgrazing crisis. Grazing land had become scarce because of the expansion of houses and sugar cane (in Ifafa).

6 The retention took place when delivering the cane at the mill. The amount retained was based on production costs. This retention was then used to buy chemicals and to pay for the field operations. If there was money remaining in the fund at the end of the cropping season, it was given back to the grower.

7 Some families might have cultivated cane, but they had sold pieces of their land or it had turned into bush through the absence of replanting.

8 The company formed by the members of the group cannot incur a loan since it cannot use the farm as collateral.

9 Profit = gross product – costs of production = gross product – inputs – wages

10 The members of the trust do not invest any personal funds into the farm.

11 The prime rate being around 4–5 per cent.

12 For example, some women were able to buy farms even though they had no access to capital. Arrangements were made in their loan repayment plans or in the amount of deposit they had to give at the time of purchase.

13 The farm income presented here is that of a year of gum tree production. From now on, there will not be tree felling until at least seven years have passed, the time it takes for a

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plantation to regrow. The farm income will then be much less. Over a whole cycle of a gum tree plantation, the farm income is R964 000/year.

14 The trust, the owner of the farm, does not put any personal money into the farm. The only money available for the farm is the income it yields. Loans are not possible because the company that runs the farm is not the owner of the farm.

15 As noted earlier, even if in theory PTOs are not saleable, in reality many families have sold part of their land.

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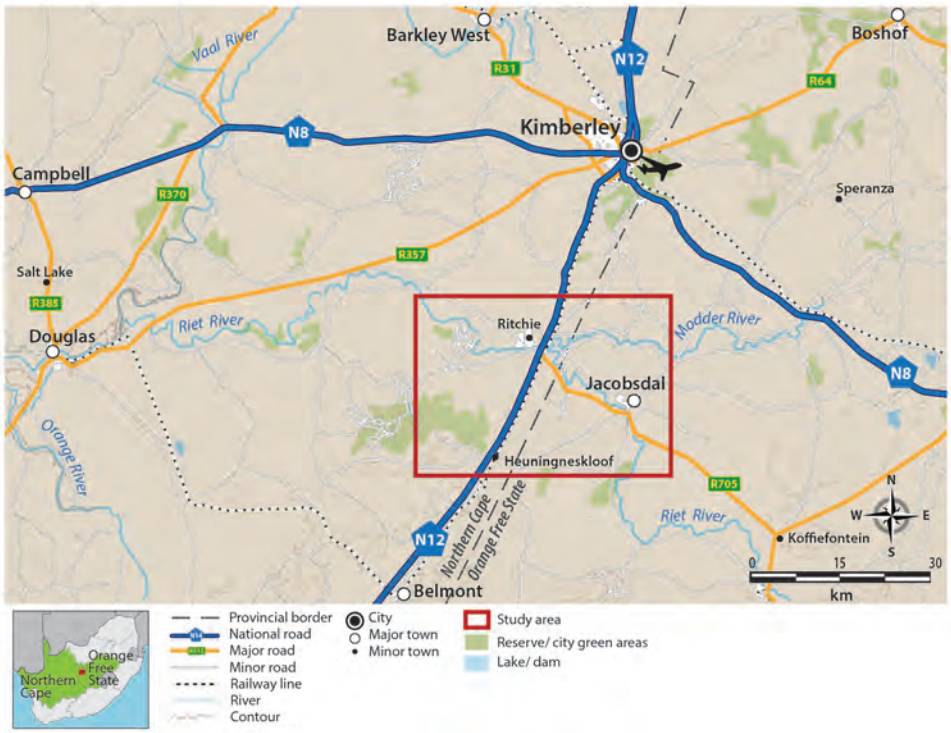
8 *The irrigated scheme of Jacobsdal and its land and agrarian reform issues*

Anne Périnelle and Audrey Arrazat

This chapter presents the results of an agrarian diagnosis of the irrigation scheme of Jacobsdal (Figure 8.1), conducted in the valley of the Riet River on the border of the Free State and Northern Cape provinces. It is an area with a semi-arid climate where irrigation is necessary for crop production. The Orange–Riet canal provides water for the entire year, which allows for cultivation of maize, wheat and alfalfa (lucerne), among other crops. Irrigation is conducted mainly by spraying with motorised central pivots. Drylands are used as pastures for raising sheep and cattle.

Figure 8.1 Location of the study area in the Northern Cape and Free State provinces



Source: Authors, adapted from Google Maps

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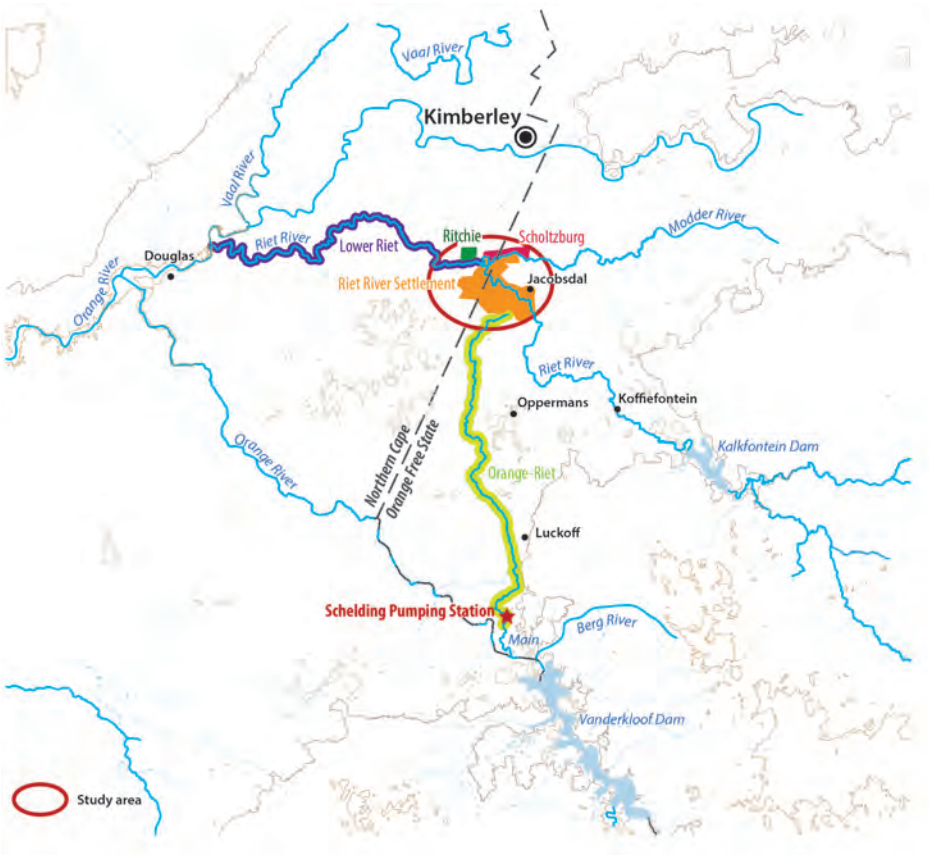
Access to the irrigated scheme was reserved for white people until the end of apartheid. Today, there are still very few black farmers. These black farmers are livestock owners who have access to non-irrigated municipal land, or who have accessed redistributed lands from the state through land reform. Owing to the many difficulties they face, few can effectively develop the land.

Presentation of the study area

Geographical situation

The region presented in this chapter is located on the central plateau of the western part of the country, at about 1 100 m altitude. The study area extends over approximately 80 000 hectares (ha) with a flat relief landscape on both sides of the

Figure 8.2 Hydraulic network around the area



Note: The study area is circled in red.
Source: Orange–Riet Water User Association

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Northern Cape and Free State border (Figure 8.1). It is centred on an irrigation scheme of the Riet River. The scheme is surrounded by a vast area of grazing land, where cattle, sheep and goats, as well as game, are kept. The main tributary of the Riet River is the Modder River which flows into the Riet, north of the studied irrigation scheme (Figure 8.2). The Riet and Modder rivers are non-perennial.

Soil features

The region is characterised by an arid climate. It is located in a high-pressure area where rainfall is low, as evidenced by the Kalahari Desert located north-west of the area. The rainfall in the study area is 360 mm per year, on average, measured over the past ten years (CRC n.d.) (Figure 8.3).

Furthermore, because of its altitude (1 100 m), this region undergoes a large daily temperature range, from minus 5°C to 20°C during winter and from 15°C to 40°C in summer.

Autumn and winter (from May to September) are very dry, with less than 10 mm of rain/month. During this period, night-time temperatures are often negative, which limits the crop choice. Since they are frost-resistant, perennial or annual winter produce, pecan trees, grapes, alfalfa and winter cereals are cultivated in this area.

In contrast, spring and summer (from September to April) are the wet seasons, with precipitation between 30 and 60 mm/month. Maximum temperatures in summer can exceed 40°C, which can place a burden on crop production (in one case, a farmer uses irrigation spray to cool the atmosphere around the crops). These

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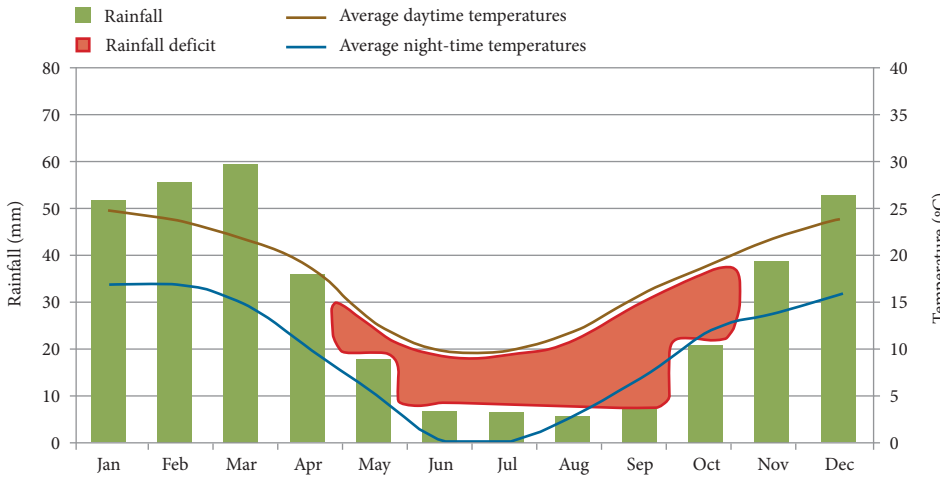
Figure 8.3 Rainfall and temperatures in the Riet Valley



Source: Authors, according to CRC (n.d.) records from 1996 to 2006

high temperatures can also be a problem for livestock, resulting in declines in milk production as well as decreased intake and average daily gain of animals.

However, a dry climate with cold winters severely restricts the presence and development of plant and animal diseases.

Figure 8.4 shows the high variability of the rainfall throughout the year, with a coefficient of 40 per cent. During major droughts, the Riet and Modder rivers may be dry for several months. On the other hand, the scheme can also be affected by floods, related to strong rainfall associated with the presence of a low water table (less than one metre deep in some places).

The short period with a lack of rainfall, in addition to rainfall variability, makes the use of irrigation for agricultural production essential. Only pastures, with a vegetative cycle of four months, which matches the period with rainfall deficit, can be maintained without irrigation. This is the reason why animal breeding on natural pastures is the only farming activity possible on drylands. In this context, access to irrigation for crops and pasture is one of the main issues in this area.

Characterisation of three agro-ecological units

The rock substrate of the area is mainly composed of sedimentary limestone rocks (Figure 8.5). Because of the low levels of precipitation, the yellowish sandy soil built up on this rock is shallow (about 20 cm). On top, different kinds of deposits form different kinds of soil:

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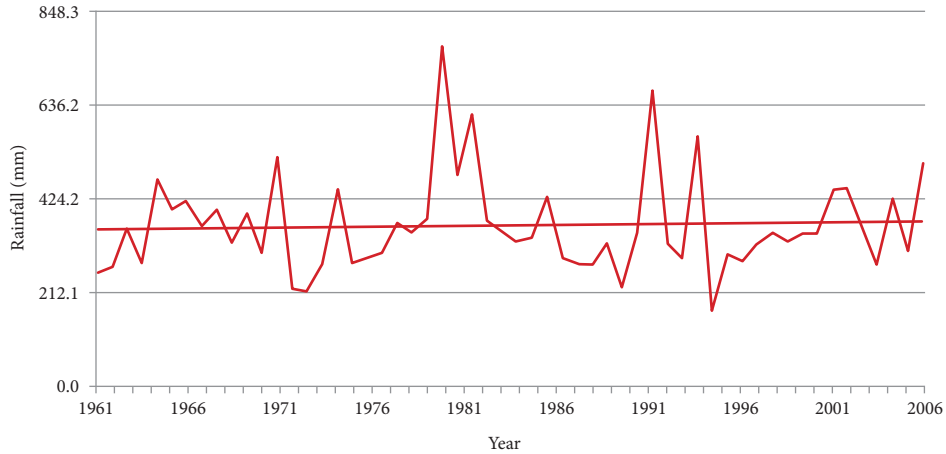
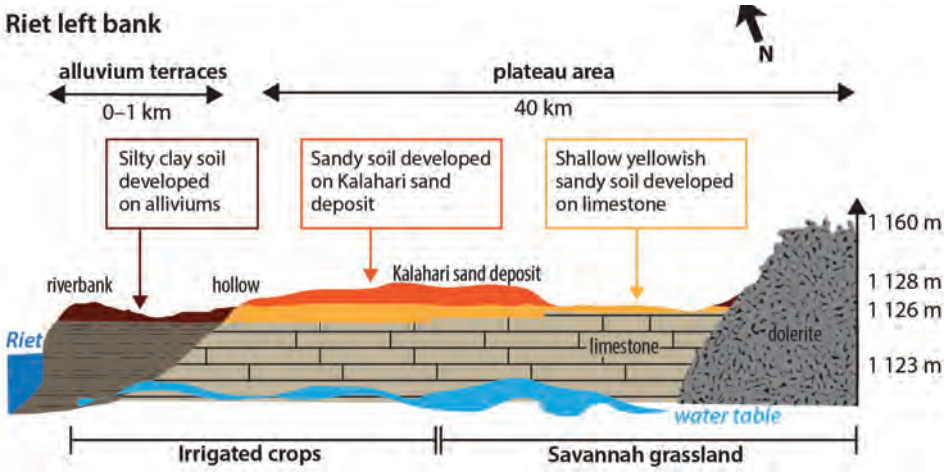
Figure 8.4 Rainfall from 1961 to 2006, Jacobsdal



Source: CRC (n.d.) records

Figure 8.5 Kind of soil on the left bank of the Riet



Source: Authors, based on landscape observations and survey data

- On the wild flat areas, sands from the Kalahari have been deposited. The soil developed on it has a sandy texture with a depth varying from about 30 cm to several metres. Most crops are farmed on this type of soil, which is easy to work, but has a low water-retention capacity.
- On the left bank of the Riet River and on the shores of the Modder River, alluviums were deposited over time. From these deposits and the accumulation of organic matter, a clay soil has built up. These are the most structured soils of the area with the best retention capacity, but they are heavy and difficult to work.

These different types of soil, the spontaneous vegetation and the various agricultural uses of the land lead to the identification of three distinct agro-ecological areas (Figure 8.6).

Area 1 on Figure 8.6: Crops on alluvium terraces, on the edge of rivers. This area is favourable for cultivation owing to its deep soil and its proximity to water (rivers and canals). The soil is relatively well structured because of its rich clay base, and is therefore good for a large variety of crops. Large tracts of alfalfa are cultivated in this area, but maize, wheat and some pecan trees can also be found (Photograph 8.1).

Area 2 on Figure 8.6: Crops on Kalahari sand deposits. Because of their low water retention, crops are planted on these soils only if there is a canal serving it and access to water is assured. All type of crops found in the region can be cultivated here (Photograph 8.2). However, chemical fertiliser is necessary to enhance fertility.

Area 3 on Figure 8.6: Livestock on grassland, on deposits of Kalahari sands or shallow calcareous soils. Some mounds of volcanic origin are also part of the

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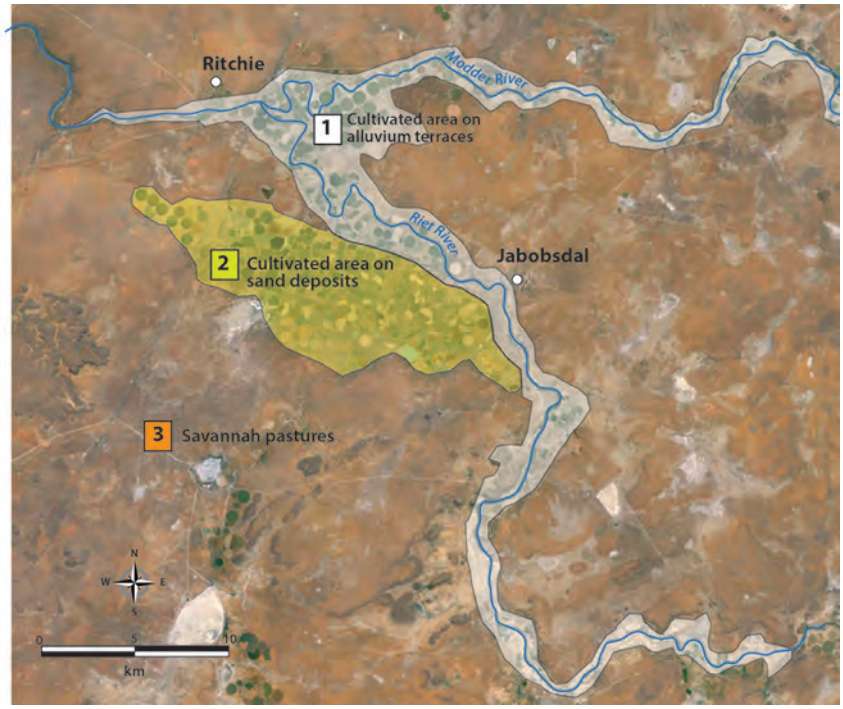
Figure 8.6 Agro-ecological zones of the Riet Valley



Source: Authors, based on landscape studies and Google Earth, 2005

Photograph 8.1 Alfalfa under flood irrigation on silt clay loam soils in Area 1

Source: Authors

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Photograph 8.2 Cultures of pecans and alfalfa irrigated under pivot on sandy soils in Area 2

Source: Authors

landscape. These areas are used as permanent pastures. The animal carrying capacity is low (13–15 ha/large stock unit, or LSU),[1] related to the scarcity of pastures during the long period of rainfall deficit (Photos 8.3 and 8.4).

Photograph 8.3 Antelopes and zebras grazing on dry pastures on sandy soil (in the background, a mound)

Source: Authors

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Photograph 8.4 Sheep grazing on limestone soil

Source: Authors

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Agrarian history of the study area

1947–1987: Construction of the first canals and development of flood-irrigated agriculture

The Jacobsdal irrigation scheme, which gets water from the dam on the Riet River, became operational in 1947. The scheme is developed on the left bank of the Riet, on land that is favourable for agriculture (alluvial terraces and deep, sandy soils) and where the topography is suitable for a slow flow of water (Figure 8.7).

People who settled in the scheme were white ex-soldiers who received the land from the government, or white farmers from neighbouring regions. At that time farms were small (17–25 ha) and relatively diverse, producing some vegetable crops like onions and potatoes, as well as cereals (maize and wheat), alfalfa, peanuts and cotton, while also raising a few animals for meat or milk and animal traction. Black and coloured populations had access to neither land nor water. They were employed as labour on farms owned by the white people. Workers, in addition to a low salary, received payments in kind, generally food. They had precarious accommodation on the farms or near the city in the locations.[2]

When electricity was installed in Jacobsdal in 1970, electric pumps and thus irrigation by sprinkling became widespread. The total irrigated area increased from about 3 000 to 5 000 ha. Farms increased in size, from 25 to 50 ha of crops. As a consequence, the overall water demand increased and water supplies were no longer sufficient during the driest years. The subsequent water restrictions, from 10 to 20 per cent of the initial quota, put many farmers in a difficult situation. This was particularly harsh on the smaller-scale farmers. The larger-scale farmers can leave

Figure 8.7 Irrigated scheme of Jacobsdal and surroundings, 1947

Source: Orange–Riet Water User Association

part of the farm fallow without jeopardising a minimum income, thus enabling them to maintain the farm even during the drier years. Several medium-sized farms planted vineyards during these dry years, as they require less water in comparison with most of the other crops. Most of the small-scale farmers (20 ha and less) have since sold their farms. This was particularly the case during the severe water shortages between 1980 and 1985. Although a consequence of reduced rainfall, the decrease in water availability was largely attributable to the increases in demand. Many farms were sold, despite financial compensation from the government. As a response, and in order to ensure water supply to the region, a canal leading water from a dam on the Orange River to Jacobsdal was built.

Electricity also allowed the introduction of mechanical milking rooms, leading some farms to specialise in milk production. This, together with Jacobdal's slaughterhouse, which opened in 1980, offered important market opportunities for the farmers in the

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region. But here, too, water shortage was a challenge. This being said, farmers with both crops and animals might earn income from both activities and are therefore less dependent on crops during water restrictions. At that time, in addition to a few thousand hectares of grazing lands, these farmers had up to 50 ha of land in the irrigated scheme. It became more and more difficult for farmers who did not have access to irrigation to make a living from only extensive livestock production. Because of the low carrying capacity, these farmers had to buy hundreds of hectares to increase their herd. Moreover, because of the proximity of the irrigated scheme, land prices were rising. The smaller properties (1 000–2 000 ha) were often purchased by large-scale landowners (more than 2 000 ha).

1987–post-1994: Securing water resources in the context of liberalisation of the agricultural market and agrarian reform

Construction of the Orange–Riet canal

The water in the Orange–Riet canal comes from the second largest dam in South Africa. The construction of the canal was completed in 1987. The irrigated plots are now ensured of receiving a quota of 11 000 m^3/ha/year. New canals (in red in Figure 8.7) were built. The size of total irrigated land increased from 5 000 to 8 600 ha. The Ministry of Water Affairs distributed 4 100 ha of water rights along the canal. These new water rights were only sold to white farmers. Farmers applied for a certain amount of water and the department distributed quotas according to the availability and the size of the plots. Black and coloured people were still not allowed to own land.

Liberalisation of the markets

During the 1980s and 1990s, agricultural markets were liberalised and agriculture was no longer subsidised by the government.

Production costs, as represented by the price for farm equipment, increased significantly. According to interviews with farmers, a combine harvester purchased for R250 000 in 1990 (R1.1 million in 2011 rand value) cost R3.5 million in 2011. On the other hand, until then, the selling prices of the main agricultural production were kept artificially stable by the state through marketing boards. Through liberalisation, prices started fluctuating, following the same trend as world commodity prices.

The increase in wages

The government elected at the end of apartheid established new labour rights through the Agricultural Labour Act of 1996, aimed at improving the wages and labour conditions of farm workers (Simbi & Aliber 2000). However, between 1970 and today, wages have increased only slightly. In 1970, farm workers were paid about

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R960 per month (in 2011 rands) (Simbi & Aliber 2000), whereas today the minimum wage for agricultural workers is R1 500/month.

Land and agrarian reform

The African National Congress-led government is implementing countrywide land and agrarian reforms, mainly through land restitution and redistribution programmes (see Chapter 2). Despite this, existing farms in the study area have been little affected by post-1994 land reform. Indeed, only 6 per cent of irrigated land has been transferred to black or coloured farmers to date; this figure is within the national average, which is 6.7 per cent. White farming still dominates the agricultural landscape and the ten land reform cases (four families and six groups) are not changing much of the overall landscape.

Various strategies to adapt to these changes

The above observations have led to several adaptation strategies as different types of farms were affected in different ways. Firstly, with labour costs increasing, investment in motorised irrigating centre pivots (the operation of which requires less labour compared to conventional mobile sprinklers) and the use of pivot irrigation systems has spread rapidly across the irrigation scheme, especially on the bigger irrigation farms. In addition, tractors can enter the fields, setting the rotation speed and facilitating sprinkler flow with ferti-irrigation and chemical products, further decreasing the number of employees needed.

The more extensive farms (presently two to four employees on 3 000 ha) are not directly affected by the wage increase. However, ranchers in the region have been significantly affected by the decline in the meat price since 1994. Indeed, related to the liberalisation of prices from 1989 to 1994, sheep and beef prices decreased by 30 and 40 per cent respectively.

Nowadays, many irrigated crops can be found in the irrigated scheme (Figure 8.8) but the most important remain maize, alfalfa and wheat.

Technical and economic characterisation of current production systems

The above-mentioned mechanisms of differentiation and the various farm trajectories allow us to identify different farm types. To better characterise this diversity, several production systems have been selected according to their means of production and their combination of crop and animal breeding. Figure 8.8 is a selection of the most important production systems.

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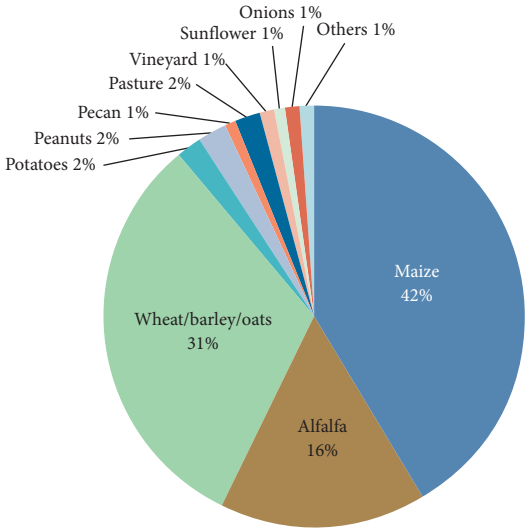
Figure 8.8 Irrigated crops in the irrigated scheme of Jacobsdal, 2011



Source: Orange–Riet Water User Association, 2011

Production systems on natural pastures without irrigation

PS1: Extensive breeding (surface area/family worker (FW) = 2 800 ha)

Outside the irrigated scheme there are cattle and sheep ranches on between 1 000 and 4 000 ha without irrigation. Livestock – Dorper sheep and mainly cattle of the Bonsmara breed – graze throughout the year. Young animals for fattening are complemented with alfalfa forage. The breeds are adapted to the barren conditions. Jackals are the main problem faced by sheep breeders. In order to mitigate the loss of lambs, farmers tend to switch to cattle farming.

Most of these farmers have a double activity. Farm income (FI) represents approximately 50 per cent of the total family income. Many farmers with less than 3 000 ha of grazing land have stopped their farming activity (Figure 8.9).

PS2: Game farms (surface area/FW = 6 000 ha)

Since the end of the 1980s, more and more investors and farmers with large surface areas (more than 5 000 ha) have converted their activities into breeding antelope and other wild animals for hunting. Areas below 5 000 ha are not sufficient to allow for hunting or bush farming. Game farms require a very significant initial investment to set up electrified fences and to purchase the first animals. However, this farming method drastically reduces the costs of labour and production. Common antelope are not more profitable than cattle or sheep, but exotic species such as buffalo, golden

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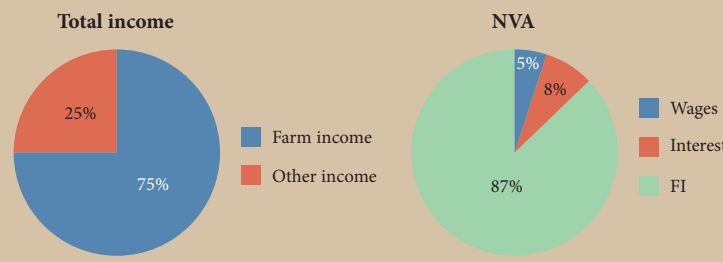
Figure 8.9 PS1: Extensive breeding

Surface area	2 800 ha non-irrigated — Surface area/worker = 933 ha
Property	Family property
Workforce	1 FW 2 permanent employees (salaries: R1 600/month)
Equipment	Fences 1 pick-up 1 kraal (for lambs at night) 10 wells + wind turbines
Work	Put the lamb in for the night (jackals) Maintenance of fences
Breeding	

	No.	Equiv. LSU	LSU
sheep	350	0.15	52.5
lambs	525	0.03	15.75
cows	100	1	100
calves	80	0.3	24
mortality 5%		LSU	192
		ha/LSU	15

complemented feeding (alfalfa)

Economic results (Rand)



GVA/ha = 288

NVA/worker = 242 423 — FI/FW = 648 061

Note: GVA = gross value added, NVA = net value added
Source: Authors

oryx and black impala, which are sold for breeding or hunted for trophies, can be sold at exorbitant prices (Figure 8.10).

PS3: Extensive breeding on small surface area (surface area/FW = 60 ha)

Concerning access to pastures in the study area, black and coloured people use communal lands or commonages belonging to the municipality and leased to farmers living in the locations. This concerns two major plots that were leased to white

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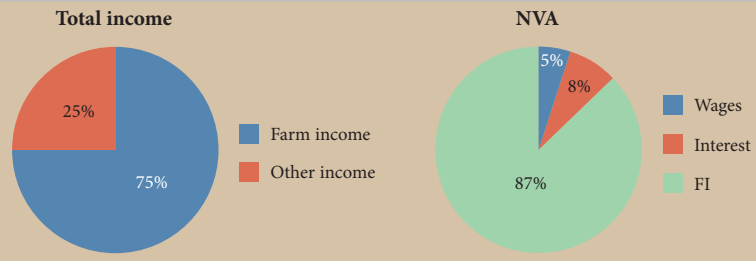
Figure 8.10 PS2: Game farms

Surface area	6 000 ha not irrigated — Surface area/worker = 1 200 ha
Property	Property of a South African investor
Workforce	1 manager 4 permanent employees
Equipment	High and electrified fences 1 pick-up truck Wells and windmills
Work	Maintenance of fences Capture of animals by helicopter
Breeding	

	No.	Equiv. LSU	LSU
sable	90	0.7	63
Arabian buck	50	0.3	15
oryx	120	0.5	60
impala	165	0.1	16.5
springbok	440	0.2	88
		LSU	242.5
		LSU/ha	24.7

Economic results (Rand)



GVA/ha = 332

NVA/worker = 374 533 FI/FW = 1 658

Note: GVA = gross value added, NVA = net value added
Source: Authors

farmers before 1994. Access to municipal lands can constitute, for some breeders, an intermediate step prior to accessing land through land reform programmes. The municipality takes part in the management of the land.

Commonages are divided into plots of 250–500 ha that are leased to several breeders. For example, a plot of 200–300 ha can be made available to four or five breeders who manage the land together (PS8). Each breeder has his or her own animals; cattle, sheep and goats graze together. Owing to the small areas held by breeders (about 60 ha/breeder), overloaded pastures are common and supplementary animal feeding is

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often necessary. As there are not enough plots for all breeders, those with the least cattle graze their animals in the location or on the adjacent municipal landfill.

Shepherds live on their plot to prevent the theft of animals, which, however, remains very common. The wages of shepherds are typically R1 000/month.

As FI is not sufficient to meet the needs of farmers and their families, family income comes mainly from social benefits (pensions and family allowances) and is generally complemented by the income of one of the family members who works in town (Figure 8.11).

Production systems under irrigation

This section presents the main irrigated production systems. All the crops are irrigated and animal feed is produced under irrigation or purchased. The area includes many farms with an area of natural pasture and an area under irrigation. In general, however, there are very few links between these two areas. On these types of farms, it is usually the irrigated section that generates the highest added value.

PS4: Irrigated maize/winter cereal and alfalfa (surface area/FW = 130 ha)

Farmers in this system are affected by decreasing margins and are adopting several strategies. First of all, they buy more land to reach 70–100 ha in total. Secondly, they invest in equipment such as combines and six-row drills, and are setting up centre pivots to reduce their labour cost.

As such, peanuts and cotton are being abandoned as they require too much labour. These farmers specialise in maize, under yearly rotation with winter cereals like wheat, oats or barley. In addition, Roundup's genetically modified maize has experienced success since it facilitates direct seeding after winter cereals and therefore allows farmers to have two cycles of crops per year. Corners of plots which are not under pivot irrigation are often seeded with alfalfa.

The production costs of these crops are high (seed, fertiliser and electricity for irrigation), so farmers take up seasonal credits from agricultural companies to spread their costs over the year. They sell their production to the agricultural company, which deducts R300/ton to be refunded. The interest paid represents 10 per cent of the net value added (NVA). On the other hand, the relatively low number of workers employed, coupled with the low wages paid (R1 600–R2 000/month), means that wages represent only 8 per cent of the NVA (Figure 8.12).

PS5: Irrigated alfalfa in rotation with maize (surface area/FW = 120 ha)

Many farmers in the region plant alfalfa, the price of which has been high since 2005 (R1 000–R1 500/ton in 2011 currency). This price is related to the high demand from neighbouring countries, and to its increasing value as an easily exportable

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Figure 8.11 PS3: Extensive breeding on small surface area

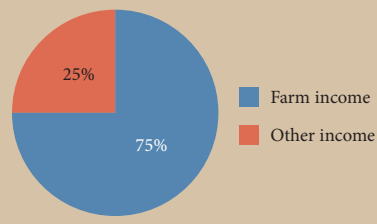
Surface area	300 ha for 5 breeders	Surface area/worker = 60 ha
Property	Land belonging to the municipality Rent: R16/ha (unpaid)	
Workforce	1 employee for 5 breeders Lives on the plot, salary: R1 000/month	
Equipment	1 well with 1 turbine 1 kraal 1 storage building Fences	at the expense of the municipality
	1 pick-up truck 1 time slot used	at the expense of the breeders
	1 employee for 5 breeders Lives on the plot, salary: R1 000/month	
Work	Employee: tries to prevent stealing/feeds animals The owner comes 2 to 5 times per week	
Breeding		

	No.	Equiv. LSU	LSU
sheep	50	0.15	7.5
lambs	60	0.03	1.8
cows	10	1	10
calves	8	0.3	2.4
goats	20	0.17	3.4
kids	30	0.09	2.7
		Total LSU	27.8
		ha/LSU	6.7

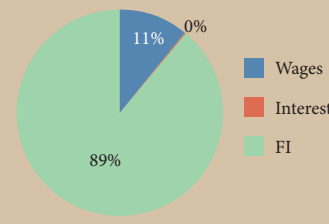
Complemented feeding (alfalfa)

Economic results (Rand)

Total income



NVA



GVA/ha = 321

NVA/worker = 15 768 FI/FW = 16 882

Note: GVA = gross value added, NVA = net value added
Source: Authors

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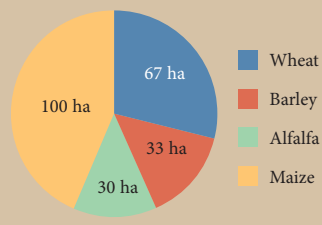
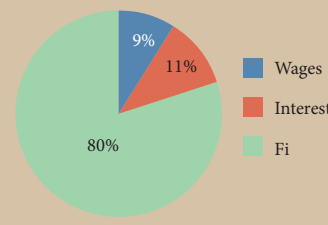
Figure 8.12 PS4: Irrigated maize/winter cereal and alfalfa

Surface area	130 ha irrigated	Surface area/worker = 26 ha
Equipment	1 combine harvester 4 tractors 2 seeders, discs Equipment to harvest alfalfa Irrigation system (1 pump/pivot) 2–4 pivots (150 ha) sprinklers (50 ha)	
Workforce	1 FW 4 permanent employees	
Work	Max. of work during the period of inter-crops	
Crops	Alfalfa in the corners not covered by pivots **GVA/ha = 12 615**	Rotation: Maize/wheat//maize/wheat//maize/barley **GVA/ha = 10 002**
	Maize: 13.5 tons/ha, sold R1 600/ton Wheat: 7.5 tons/ha, sold R2 000/ton	
Economic results (Rand)	 Credit with GWK R124 000 interest/year NVA/worker = 228 887	**NVA**  FI/FW = 916 433

Note: GVA = gross value added, GWK = Griekwaland-Wes Korporatief
Source: Authors

concentrate. In addition, producers from the study area have the advantage of being able to harvest eight cuts per year, thanks to a long, hot summer. Thus, alfalfa can reach very significant annual yields (20 tons of dry material/year). For these reasons, farmers refer to alfalfa as 'green gold'. Rotation is often done with maize, which benefits from the nitrogen fixed by alfalfa in previous cropping seasons.

However, this culture is very labour-intensive; each cut needs five days' work per ha/worker. This is why 22 per cent of the NVA is used for wages, and why these farmers invest in powerful farm equipment (e.g. large rakes, seven-metre mowers, rectangular 400 kg boot presses) in order to reduce their labour.

These farmers also build barns to store their production. This allows them to sell at the best price between periods of production. In addition, alfalfa generates income seven to nine months a year, allowing farmers to avoid taking up seasonal credits.

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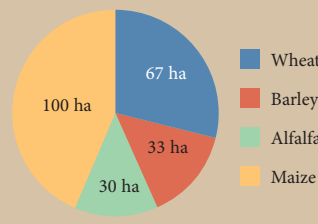
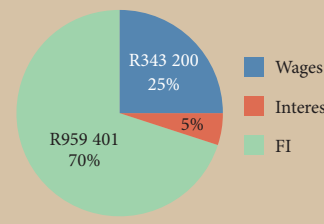
They can also be contracted for technical operations by other farmers who do not have equipment. Calculations of FI do not include the activity of contracting, since it is not farming itself. Farm income represents 50–70 per cent of total incomes (Figure 8.13).

PS6: Dairy cattle farming (surface area/FW = 50 ha)

Dairy farmers suffered a crisis during the 1990s as the price of milk decreased. Many of the smallest-scale farmers went bankrupt. A few remaining dairy farms borrowed from private banks to overcome this crisis and they still suffer the cost of this debt. Related to this, dairy farmers have tended to abandon the Holstein breed as the milk

Figure 8.13 PS5: Irrigated alfalfa in rotation with maize

Surface area	120 ha irrigated	Surface area/worker = 10 ha
Equipment	3 tractors 1 automatic mower 2 packing machines 1 tractor forklift 4 trailers (10 tons) 1 storage building Irrigation system: pivots, sprinklers	
Workforce	1 FW 12 permanent employees	
Work	7 cuts per year from October to April	
Crops	20 tons/ha/year Storage and sale in winter (gain R200/ton) Rotation: Lucerne//lucerne//lucerne//lucerne//lucerne//maize	
Economic results (Rand)	 **NVA**  FI = 70% of total income Other income (30%) buying selling/trading, service provision GVA/ha = 13 575 FI/FW = 959 401 NVA/worker = 105 185	

Note: GVA = gross value added
Source: Authors

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price per litre is lower (due to a lower fat content) than that of the milk from the Jersey breed.

Part of the feed for cows is produced on the farm; the rest is bought locally. Rations consist of maize, alfalfa, straw concentrate and maize silage. Even if the majority of the feed is produced on the farm, production costs per litre of milk are high (about R3.10/*l*, while milk is sold at R4.00/*l* – this remains a good price compared to world prices). Milking requires a significant workforce; 32 per cent of the NVA is intended for wages.

Owing to these high costs and because of a relatively small area per FW, dairy farmers earn low agricultural incomes in comparison to other farmers in the area (Figure 8.14).

PS7: Crops and cattle fattening (surface area/FW = 100 ha)

Other farmers have adopted a strategy of dividing risk among cereal crops, alfalfa and cattle farming. This type of production system developed particularly in 2005 when the price of maize was so low that farmers could barely cover the production costs. Subsequently, farmers bought cattle which they fatten with maize. As such, when the price of maize is low, farmers increase their livestock and feed their animals with a portion of the maize; when the price is high, they sell maize and keep fewer cattle to be fattened. This is also the case with alfalfa. Poor-quality alfalfa is given to cattle. Peanut straw, rich in fatty acids, is collected in winter and distributed to animals at times when the forage resource is scarce. Cattle manure is utilised on the land, but is not enough to fertilise the entire cultivated area.

To model this type, we have taken into account an average year. Steady income generated by alfalfa is used to finance the production of grain. These farmers, therefore, do not take on any credit: the part represented by interest in the distribution of the NVA is low. However, this production system requires both a high level of equipment and a relatively large workforce (Figure 8.15).

PS8: Alfalfa, vineyard, fattening pigs and small sheep and cattle ranching (surface area/FW = 6.5 ha)

This category includes irrigated farms that were redistributed through the Land Redistribution for Agricultural Development programme to groups of three to thirteen members. The surface area per beneficiary varies from 1.3–17 ha. These farms are generally underequipped. A number of land reform beneficiaries cannot cover the production costs for maize and cereals. These costs are high, as they need to contract most of the technical operations. In addition, agricultural companies do not give production credit to these farmers as they do not have accounting proof of solvency. As a result, these farmers often rent out their pivot(s) to farmers who have

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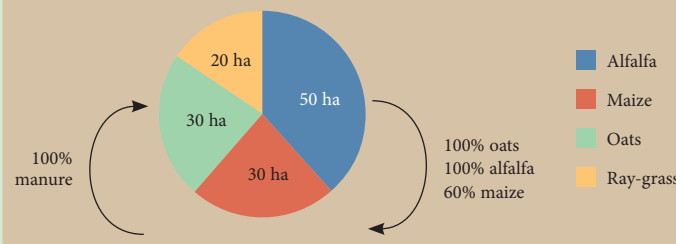
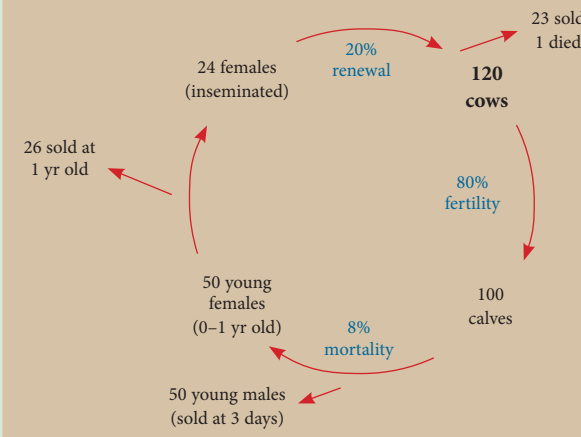
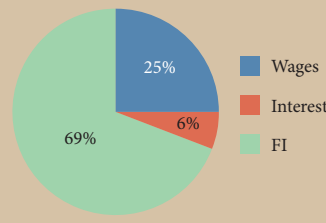
Figure 8.14 PS6: Dairy cattle farming

Surface area	50 ha irrigated Surface area/worker = 6.3 ha
Equipment	3 tractors Equipment for alfalfa 2 trailers (10 tons), 1 manure spreader 1 milking room (15 posts) 2 tanks (2 400*l*) Irrigation system (2 pumps, pivots, sprinklers)
Workforce	1 FW 8 permanent employees
Work	2 milkings/days (2 × 3 hours, 5 employees, 15 posts for milking)
Crops	
Breeding	 5 500*l*/cow/lactation, milk price: R4/*l*
Economic results (Rand)	**NVA**  NVA/worker = 92 523 FI/FW = 577 713

Source: Authors

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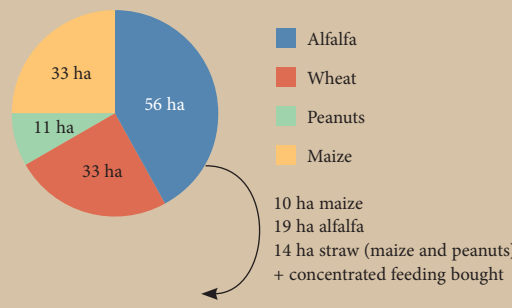
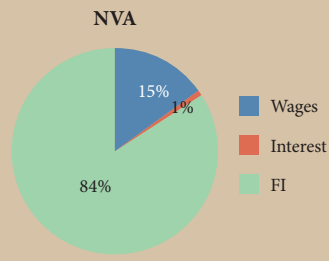
Figure 8.15 PS7: Crops and cattle fattening

Surface area	100 ha irrigated	Surface area/worker = 11 ha
Property	Owned by the farmer	
Equipment	2 tractors, 3 trailers (10 ton) 1 mill for feeding, 1 crusher Equipment for alfalfa, storage building Irrigation system (2–3 pivots, sprinklers, 3–4 pumps)	
Workforce	1 FW 7 permanent employees Seasonal work for peanuts: 10 workers for 2 weeks for 10 ha	
Crops		**GVA/ha = 12 150**
Breeding	200 Bonsmaras purchased at 160 kg (4 months old), and sold at 400 kg (9 months). 4 lots/year. Feeding with maize If price meat > R15/kg and price maize < R2 000/ton	**GVA/ha = 22 263**
Economic results (Rand)	 GVA/ha = 15 773 NVA/worker = 166 812 FI/FW = 1 109 298	

Note: GVA = gross value added
Source: Authors

both equipment and access to campaign credits. A pivot can be leased for R35 000/year for 30 ha with water quotas.

A wide variety of production systems characterise PS8, as shown by the following example: A farm has been redistributed to a group of thirteen individuals. Within the group, conflicts occur regularly. The irrigated surface area per beneficiary (or

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worker in this case) is 1.5 ha. Their starting capital was an additional state subsidy from the Comprehensive Agricultural Support Programme, which allowed them to buy a small tractor, a mower and a small packaging machine. They are thus able to harvest the alfalfa themselves. Alfalfa was chosen because it can be harvested with inexpensive equipment and irrigated by gravity and flooding, which requires little investment. Irrigation and harvesting require a large workforce because of the low level of equipment, but the thirteen members of the group are sufficient in number to perform this work on 4 ha. In addition, alfalfa is planted only once every seven years, which represents a lower cost compared to annual crops. Finally, with seven annual sales, alfalfa allows a steady income.

A plot has been planted with vines as part of a recent government project. The government subsidised the entire development of the 4 ha of vineyards. Once established, technical operations, including cutting and harvesting, can be performed by hand. The thirteen beneficiaries are able to do this work. Lastly, the non-irrigable lands of the farm, an area of 60 ha, are used to graze eighteen sheep.

This kind of farm can also diversify into pig breeding, which occupies little space and has relatively low costs. Pig breeding is labour intensive, however, as food must be prepared and given morning and night. The pigs are sold on an informal basis in the location.

Despite a high productivity per hectare, this production system, according to its low surface area/FW, generates very little income per beneficiary: R7 800 per year, which is less than South Africa's minimum wage and almost totally made up of subsidies. These beneficiaries thus have other sources of income, such as social benefits (pensions and family allowances) or the income of another member of the family. Some beneficiaries also work off-farm (Figure 8.16).

PS9: Crops and sheep fattening (surface area/FW = 20 ha)

Other farmers have benefited from the Pro-Active Land Acquisition Strategy (PLAS). Beneficiaries lease the land for five years, but do not own it. Additional equipment is received through the government's Recapitalisation and Development Programme. This kind of farm tends to follow the dominant trend of the area, with a four-year maize and wheat crop, rotating with a five-year alfalfa crop. Since the area of these farms is small, farmers intensify their production through sheep fattening.

The workforce is partly from the family. The level of equipment does not allow large farming operations, such as planting and harvesting. These operations are therefore realised under contract, thereby increasing production costs. However, gross value added (GVA) remains important.

Currently, 3 000 ha of the water quota are reserved for black farmers in the Northern Cape. Only 1 100 ha are actually used because quotas have not yet been distributed and a lack of infrastructure persists in the region (canals and pumps). Moreover,

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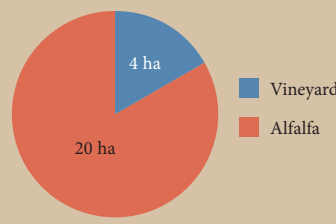
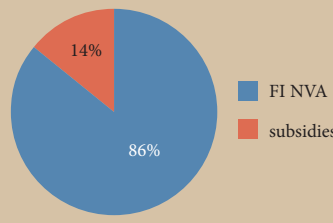
Figure 8.16 PS8: Alfalfa, vineyard, fattening pigs and small sheep and cattle ranching

Surface area	Irrigated surface: 24 ha Natural pasture: 60 ha	Surface area/worker = 6.5 ha
Property	Settlement/Land Acquisition Grant	
Equipment	1 pivot Irrigation system for the vineyard 1 tractor Small mower and packer for alfalfa	Bought with subsidies
Workforce	13 beneficiaries 0 permanent employees	
Work	1 beneficiary living on the farm	
Crops		GVA/ha (alfalfa) 12 200 GVA/ha (vineyard) 11 900
Breeding	5 sows, 1 boar 25 piglets sold/year	GVA/ha (pigs) 9 600
	18 ewes, 1 ram 27 lambs sold/year 16 ha/LSU	GVA/ha (sheep) 339
Economic results (Rand)	 Subsidies = R50 000 = 15% of FI	No wages, no interest NVA/worker = 21 968 FI/FW = 25 814

Note: GVA = gross value added
Source: Authors

access by black people to information remains problematic; very few are represented on the board of the Orange–Riet Water User Association.

In general, difficulties faced by these 'emerging farmers' are often compounded by the lack of follow-up and coordination action from the different government departments. In order to compensate for the lack of technical monitoring, the state has set up a mentorship programme. A white farmer monitors and advises some

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of the reform beneficiaries in exchange for financial compensation from the state. However, this system is inefficient, particularly because of the lack of trust between the white and black farmers, who are often in direct competition with each other. In addition, other forms of strategic partnerships are being established between these emerging and white farmers and/or agribusinesses. For example, dairy farmers would like to participate in the Worker Trust Fund: the state buys dairy cows that are given to the farm workers and the farmer leases each cow for R100/month via a common fund. He pays all fees, but keeps the milk and the calves. The number of cows in the herd owned by the employees remains constant and everything happens as if the employees had shares in the farm. These types of partnerships are often seen as a way to maintain the productivity of the land reform beneficiaries' activities. This being said, black farmers are not being empowered through these set-ups. On the contrary, some white farmers have entered into joint ventures with black farmers to gain access to additional water quotas (Figure 8.17).

PS10: Irrigated alfalfa and cattle fattening on small surfaces (surface area/FW = 10 ha)

Near the village of Ritchie, retirees or people working in Kimberley have settled on land divided by the government with the aim of creating small farms (less than 10 ha). They grow alfalfa irrigated by flooding or spraying, which they sell on-field to breeders or harvest themselves with old low-performance equipment. Their objective is to supplement their income or pension. Farm income covers up to 50 per cent of their total income. Sometimes, they fatten cattle or sheep with the alfalfa for a few months. In this case, they also have irrigated meadows and buy concentrates to supplement the animals' diet. The workforce is relatively important because the owner is not always present on the farm (Figures 8.18 and 8.19).

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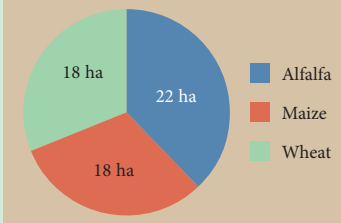
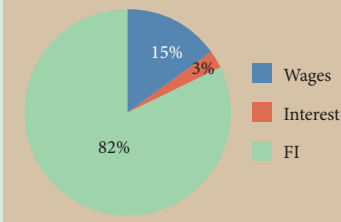
Economic results

Comparison of the NVA per worker

According to Figure 8.20, there is proportionality between the NVA/ha and the area/worker for extensive farms (PS1, PS2, PS10). These farm types generate the same GVA/ha, which corresponds to the virtual diagonal connecting these points.

At one extreme, small-scale goat, sheep and cattle extensive breeders (PS8), who have access to less than 100 ha/worker, have one of the lowest NVA/worker ratios, generating about R21 000/worker. This is attributable to the fact that these farms require more labour per hectare. At the other extreme, game farms have the highest NVA/worker, at R350 000/worker. This is attributable to the very profitable market price for game, while the number of employees per hectare is low. Indeed, game farms create relatively few jobs and are a low productive activity (the NVA created per hectare is smaller than for breeding activities).

Figure 8.17 PS9: Crops and sheep fattening

Surface area	40 ha irrigated	Surface area/worker = 10 ha
Property	PLAS programme	
Equipment	Low equipment level Need of service providers (planting/harvest)	
Workforce	2 family workers 2 permanent employees	
Crops	 **GVA/ha (crops)** **R10 785**	Rotation: Lucerne//lucerne//lucerne//lucerne//lucerne//maize/wheat//maize/wheat//maize/wheat//maize/wheat//
Breeding	120 sheep fattened/year (lamb price: R22/kg alive)	**GVA/ha (breeding)** **R11 368**
Economic results (Rand)	**NVA**  NVA/worker 92 946	Grants: 28 200 FI/FW: 164 392

Source: Authors

Owing to large area per worker differences, the irrigated systems are presented separately in Figure 8.21.

At first sight, the NVA/worker depends on the area per worker. From Figure 8.21, we can see that production systems including cereals (corn, wheat and barley) are those which have the highest NVA/worker, despite being low GVA/ha crop systems. These production systems require few workers/ha. In general, the weakness of the NVA/worker for small areas per workers is due to the higher costs. Because of the small investment capacity, subcontracting of other farmers – with proper equipment to do technical operations, such as harvesting – is needed.

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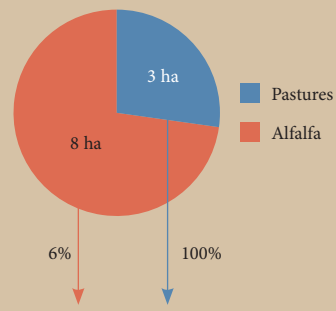
Figure 8.18 PS10: Irrigated alfalfa and cattle fattening on small surfaces

Surface area	10 ha irrigated		Surface area/worker = 3.3 ha
Property	Municipal land, with owner having several activities		
Equipment	1 tractor Equipment for alfalfa Irrigation system (1 pump, sprinklers)		
Workforce	1 FW 2 permanent employees		
Work	Maximum work at each alfalfa harvest (8 ×/year)		
Crops			Rotation: Lucerne//lucerne//lucerne//lucerne//lucerne//lucerne//ray grass//ray grass **GVA/ha = 11 867**
Breeding	8 cattle fattened for 4–8 months depending on the meat price	+ feeding bought	**GVA/ha** **= 60 148**
Economic results (Rand)	NVA/ha = 11 020		Other income: at least 50% of the total
	NVA/worker = 32 362		FI/FW = 49 086

Source: Authors

Comparison of FIs

Although small-scale sheep, goat and cattle extensive breeders (PS8) have comparable GVA/ha to other extensive breeders, they have a much lower breeder area (Figure 8.22). For this reason, smallholders' income is close to the (minimum) wage of labourers (R18 000/year). According to the survey, this is the reason why there are few young farmers on the commonages. Despite the risks of unemployment, young people prefer trying to find better-paying jobs in towns. Farmers on commonages are mostly retirees who receive social grants.

Furthermore, game farms that require little labour and little farm equipment apart from the fences have a high agricultural income. This is also the case for partly irrigated production systems (PS3). This is attributable to a high GVA/ha for the crop systems and low salaries.

Among the irrigated production systems, PS5 has the highest FIs for FWs (Figure 8.23).

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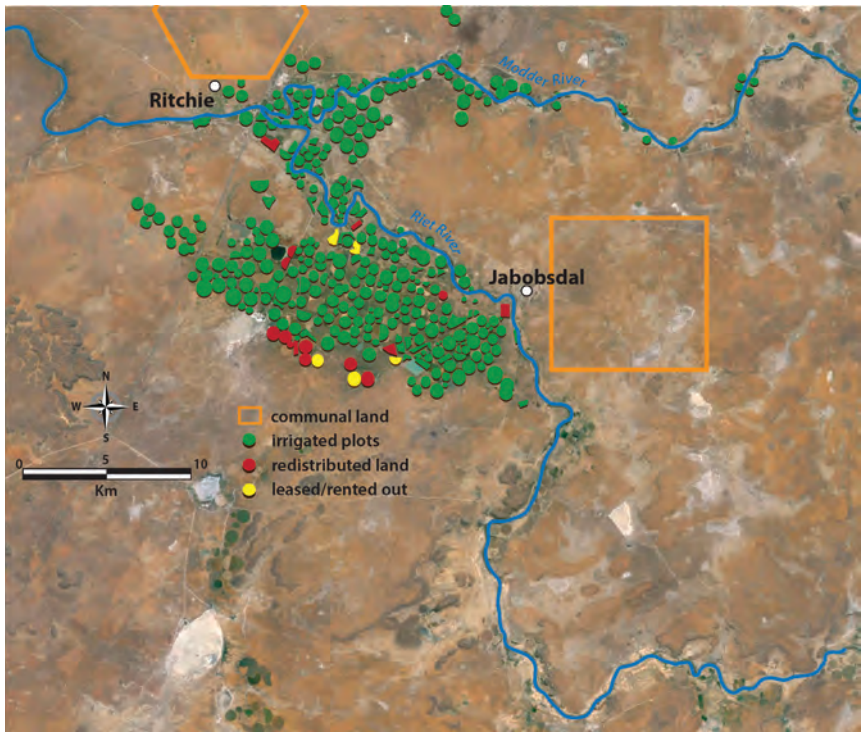
Figure 8.19 Map of the area showing the redistributed land and communal lands



Source: Authors, based on survey

In comparison:

- Cereal farmers (PS4), creating smaller GVA/ha, need larger areas to achieve a similar FI. Production systems with alfalfa as the main crop (PS5) have lower FI/worker, despite higher crop in GVA/ha systems. This is explained by the significant labour required for the production of alfalfa. The same is true for dairy farmers and sheep farmers that have a lower NVA/worker, as their production systems are more labour-intensive.
- PS7, irrigated crops and cattle fattening, has a high GVA/ha and a high FI/ha, mainly attributable to the diversity of production and the strong interactions between them (manure for crops and remains of crops for animals). In addition, this system is less labour intensive, lowering the costs even more.
- Small-scale farmers (PS8) have the lowest FI/worker. Their production system does not use much labour, but area/FW is very low.
- The crops and sheep fattening (PS9) production system has a low NVA/ha, as the GVA/ha of the system is low owing to the additional costs generated by the need for labour and services.
- Finally, the dairy farms (PS6) allow for the generation of relatively high

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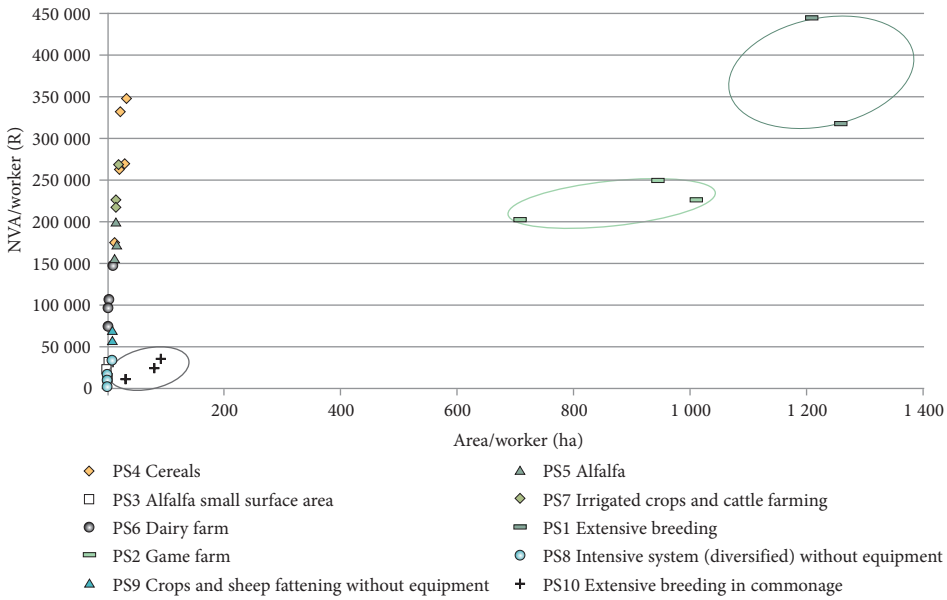
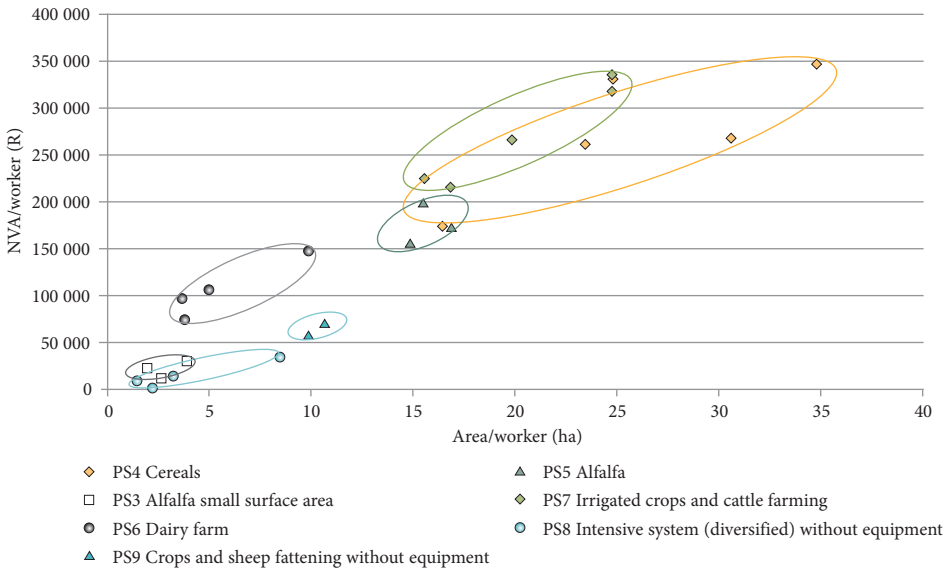
Figure 8.20 NVA/worker based on the land surface/worker



Note: worker = permanent employees plus owner working on farm
Source: Authors

Figure 8.21 NVA/worker based on the area/worker for irrigated production systems



Note: worker = permanent employees plus owner working on farm
Source: Authors

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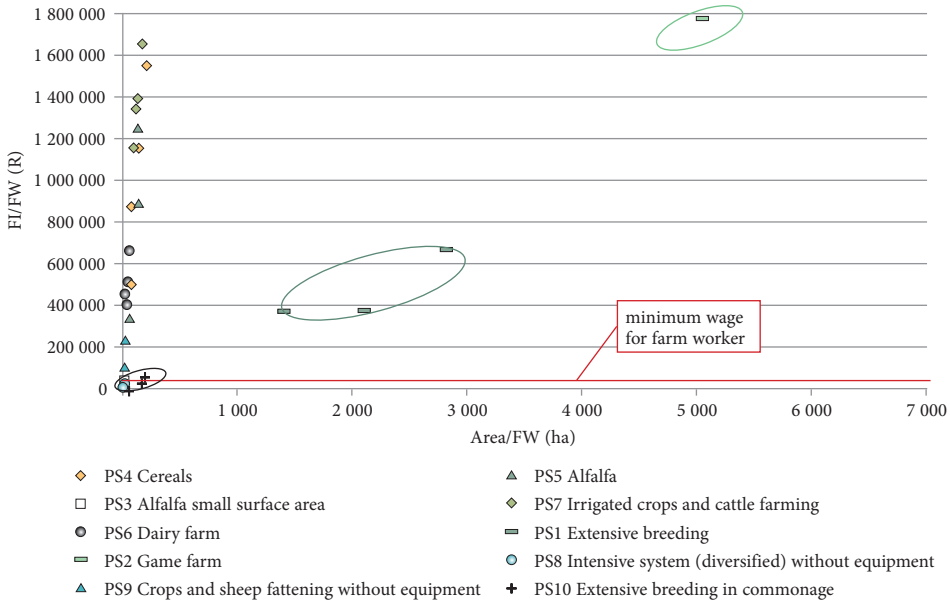
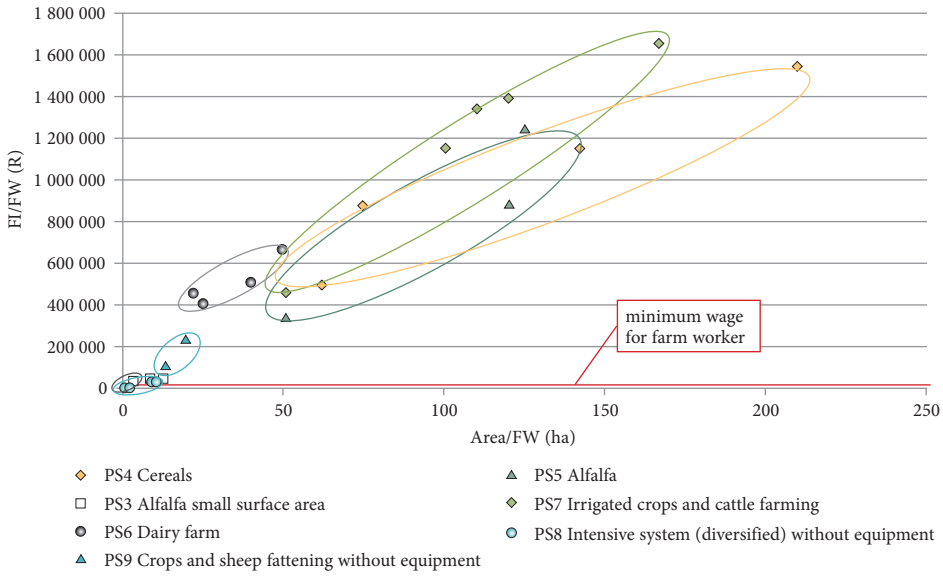
Figure 8.22 FI/FW based on the area/FW



Source: Authors

Figure 8.23 FI/FW based on the area/FW for irrigated systems



Source: Authors

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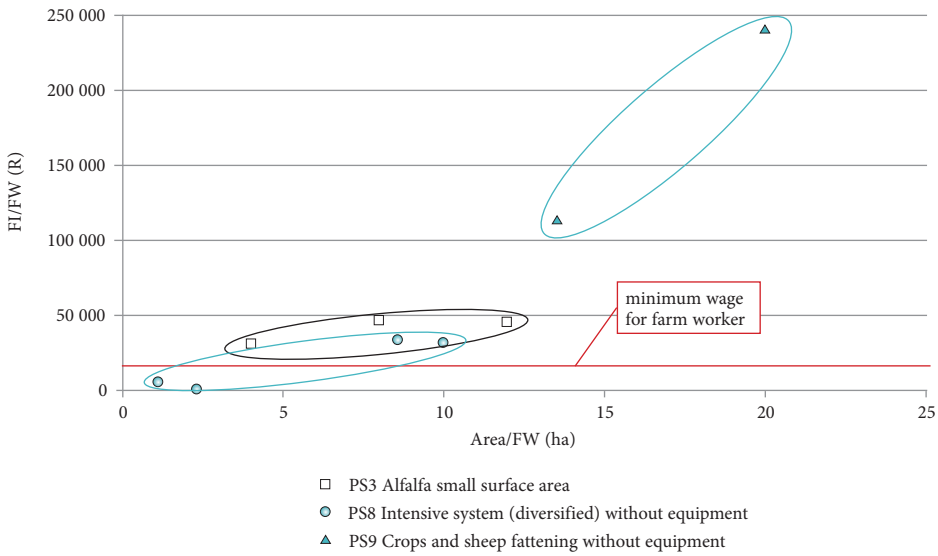
incomes from small areas. However, the level of agricultural income is among the lowest. This is attributable to the large number of permanent employees and the costly equipment needed for milking and for crops.

For the same area/FW, the incomes are very similar for PS3 and PS8. However, PS8 has a better FI because of larger land area, whereas the FI in PS3 is not the main source of income (Figure 8.24).

Groups that have acquired their lands through land reform have very low agricultural incomes as the area/workers is low (1.3–10 ha irrigated/FW). In general, it is very difficult to generate sufficient income in South Africa with a small area of land. It is extremely difficult to generate sufficient added value, with margins being low. This is explained in part by the lack of opportunities other than selling to supermarkets, where prices are lower than those that can be accommodated by small-scale retailers and small-scale farmers (Louw et al. 2008). Supermarkets play a key role in the South African agrifood sectors and form an oligopoly. Six supermarkets enjoy 93.8 per cent of the market share of retail sales. Short marketing channels have not been developed in the study area, and although local sales (including informally) are not impossible, they remain very inconsistent.

Figure 8.24 FI/FW based on the area/FW for types that have areas less than 20 ha/FW



Source: Authors

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Conclusion: Impasses faced by South Africa's agrarian reform

Since 1990, farmers in the irrigated scheme of Jacobsdal have experienced many changes related to the country's liberalisation of agricultural markets.

The existing (white) farmers have faced a deregulated agricultural market and a steady increase in costs. Results show that it is presently difficult to develop a profitable farm on less than 20 ha of irrigated land per worker. To increase the added values, different strategies have been implemented. The majority have expanded and/or intensified, mainly to offset decreasing margins and a loss of profits. Presently, farms are between 25 and 500 ha/worker for irrigated land and even more than 5 000 ha for game farms. Some owners have several farms, which are then run by managers. Others have developed storage facilities for alfalfa or grain, as well as sorting, packaging and processing facilities. But again, this is only accessible to the largest-scale and capital-rich farmers.

At the same time, reforms have been implemented to reduce social inequalities inherited from decades of racial segregation policies. A few farms on the perimeter were therefore redistributed to black or coloured people. Since many people have applied for land, the government has decided to install several beneficiaries per farm. Thus, in the irrigated scheme, many beneficiaries have access only to 5 ha of irrigation. This explains the difficulties encountered by these beneficiaries in achieving a decent FI. Although the GVA/ha generated by their production systems is similar to systems set up by white farmers, agricultural income per farmer is significantly lower. It is therefore difficult to reinvest into the farm, intensify or even grow. On smaller areas, beneficiaries produce crops with high added value, reduce production costs and intensify labour. But their produce is always in competition with large-scale farmers who take advantage of significant economies of scale. These small-scale farmers are obviously not competitive from an economic point of view.

These are the major impasses faced by the country's agrarian reform, representing an incompatibility between agrarian reform and the methods chosen to implement liberalisation. On the one hand, the beneficiaries of land reform fail to generate decent agricultural incomes and they continue to live on social grants. This is a double cost for the country, which is presently affected by economic stagnation and extreme employment crises. On the other hand, land reform is still very hesitant and partial; it does not change the production systems in place. Indeed, these reform projects are based on the very same production model as their large-scale counterparts, although characterised by significant differences and obvious inconsistencies.

In a country where water is scarce and where unemployment is an important issue, the agriculture which is in the process of being developed is excessive in water use and employs few people.

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Notes

1 An LSU corresponds to a cow of 600 kg producing 3 000 litres of milk per year.

2 Equivalent of townships for rural areas.

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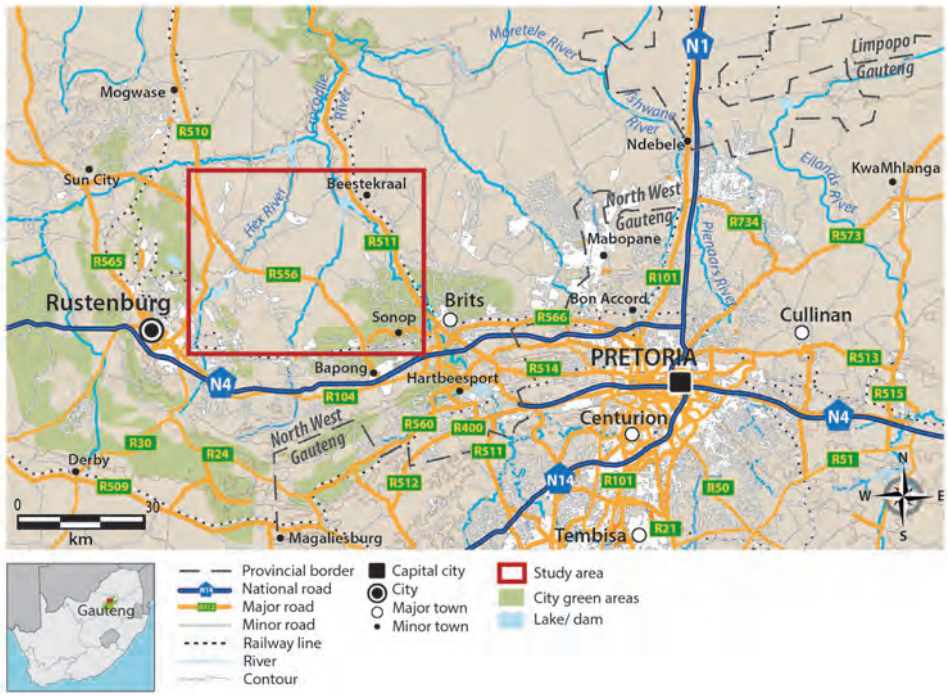
9 *Brits' irrigated areas and neighbouring communities (the Madibeng and Rustenburg municipalities, North West province)*

Alice Clerc and Clémentine Rémy

The agricultural region of Brits (Figure 9.1) is made up of an irrigated area surrounded by non-irrigated lands. The water supplying the irrigated area comes from the Hartbeespoort Dam which was built on the Crocodile River at the beginning of the 20th century. The surrounding non-irrigated lands correspond to the former bantustan of Bophuthatswana, established by the South African government in the 1950s. Despite a comparable natural environment on either side of the former borders, the fact that water, land and market access between

Figure 9.1 Location of the area under study



Source: Authors, adapted from Google Maps

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the two zones has been unequal has led to the development of completely different farming industries.

Presentation of the study area

Agro-ecological characterisation of the study area

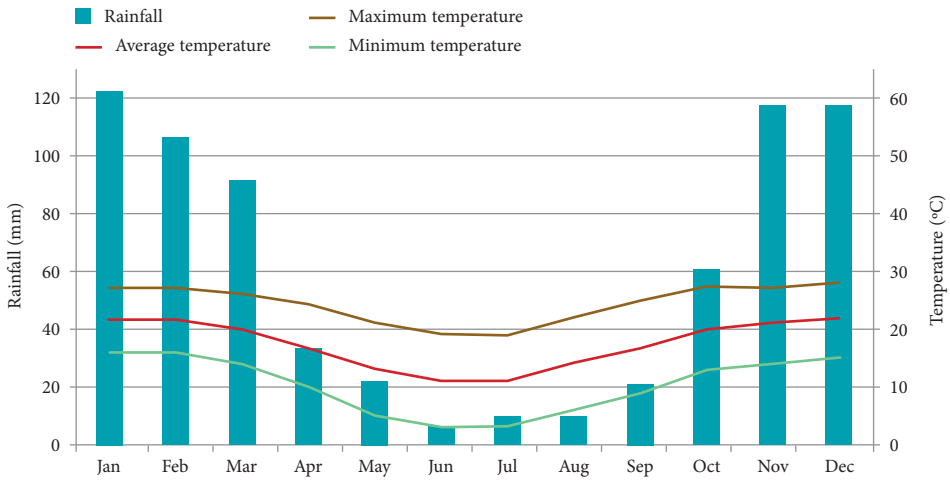
A dry subtropical climate tempered by altitude

The study area, situated between 1 000 and 1 500 m above sea level, is characterised by a dry subtropical climate, tempered by altitude (Figure 9.2). Annual temperatures vary between 0 and 35°C, and annual rainfall between 500 and 700 mm. Summers, from September to March, are hot and humid, and winters, from May to August, are cold and dry.

Since most rainfall occurs in summer, rainwater is recovered when temperatures are at their highest. However, an important portion of this water is lost through high evaporation owing to sunlight. Moreover, the inter-annual variability of precipitation is very high, with years of drought (1982–1985 and 1991–1995) and floods (2010) leading to significant agricultural losses. In this context, access to irrigation for cultivation and to streams for drinking water for animals, as well as the draining qualities of the soils, play an essential role.

Under irrigated conditions, temperatures are sufficiently high to cultivate throughout the year. The agricultural area of Brits benefits in fact from a few degrees more in temperature than the Pretoria and Johannesburg regions. Indeed, it is situated at a

Figure 9.2 Ombrothermic diagram of the Pretoria region



Source: Authors

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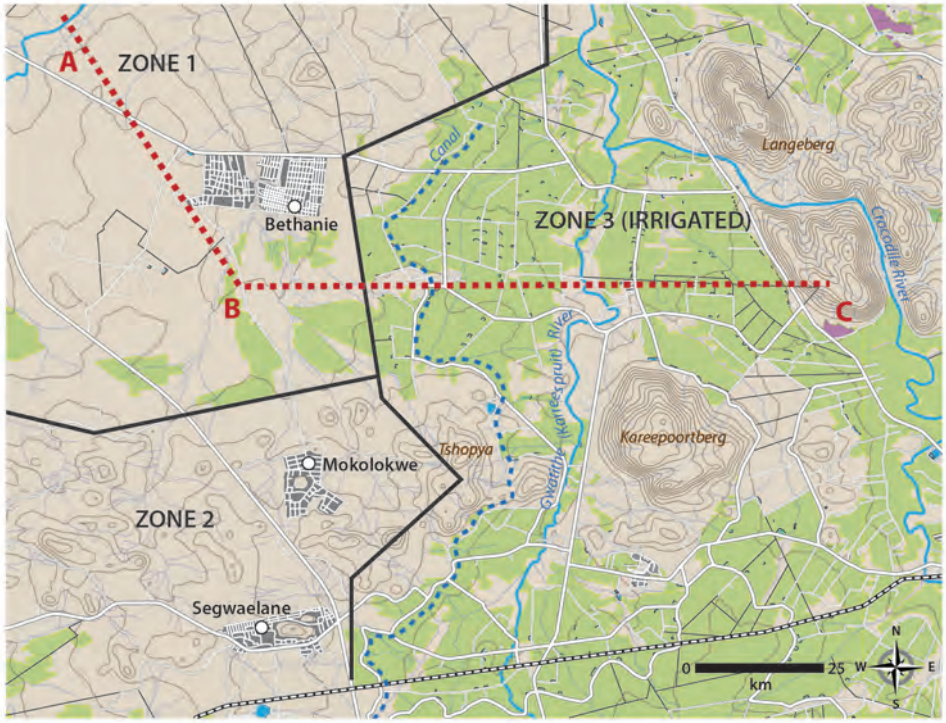
lower altitude and is separated by the Magaliesberg mountain range, blocking the cold air masses from the south. This limits the risk of frost and favours market-oriented horticultural production in winter, with some farmers producing onions during the low temperature season and thus benefiting from high prices.

Landscape and river system

Situated at around 1 000 m above sea level, the study area is structured by two mountain ranges reaching 1 445 m above sea level, on average: the Landberg range in the east and a pyramid gabbro-norite range of east–west orientation in the south of the area. Between these ranges, the relief consists of an alternation of rivers and interfluves of north–south orientation, with a much denser river system in the east. This river system is reinforced by an important network of irrigation canals coming from Hartbeespoort Dam (Figure 9.3).

Figure 9.3 Map of the area under study



Source: Authors

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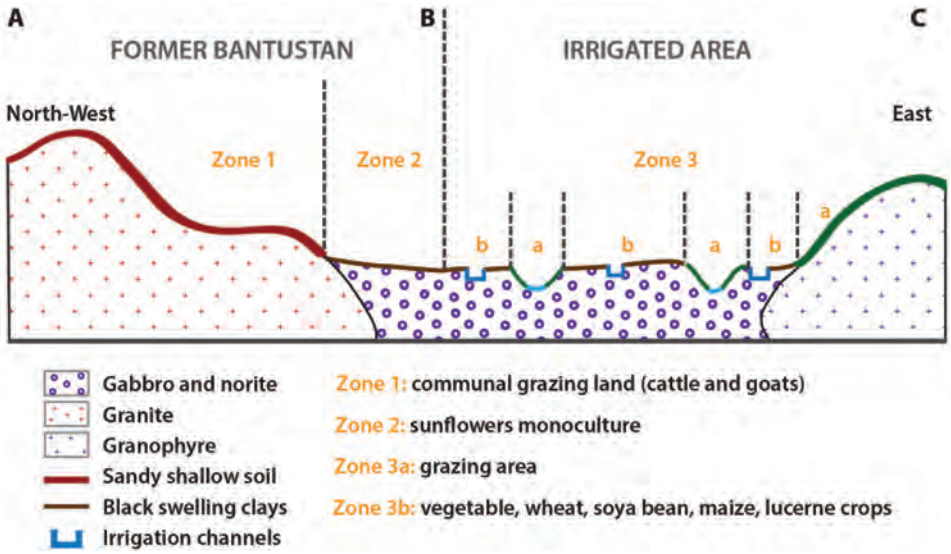
The entire area under study is made up of intrusive igneous subsoil: igneous grained rocks gabbro and norite in the southern section and granite in the north-west section (Figure 9.4).

Soils developed on gabbro and norite contain an important quantity of swelling clay and are black due to their high organic-matter content. These soils are potentially very fertile. However, they can quickly become flooded during the rainfall season in summer (November to February), and dried out during the dry season in winter (May to July). This requires farmers to control the water situation throughout the year in order to exploit soils, through drainage during the rainfall season and irrigation during the dry season. On the other hand, soils in the granite zone are sandy and very shallow, with many occurrences of granite outcrops.

Based on the various pedogeological and hydrographical characteristics of the study area, we identified three zones with different developments (Figure 9.3). The granite zone (Zone 1), situated in the north-west, is used for communal grazing owing to its shallow soils and the many granite outcrops which prevent any form of ploughing. This zone is characterised by access to communal land, managed by the Bakwena Ba Mogopa community.

The zone of non-irrigated swelling clays (Zone 2), situated south of Bethanie, is used for rain-fed sunflower monoculture. As with the granite zone, this zone is characterised by access to communal land.

Figure 9.4 The AB and BC line transects (Figure 9.3) of the study area highlighting the different sections of the ecosystem



Source: Authors

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The zone of irrigated swelling clays, situated in the east (Zone 3), is subdivided into two sub-zones: the valleys and lower slopes of mountains (Zone 3a) which are used for grazing (veld and grazing lands), and the interfluves (Zone 3b) which are used for the irrigated cultivation of vegetables, wheat, soya beans, maize and alfalfa (Figure 9.4). In this zone, access to land is private following the eviction of black communities at the beginning of the 20th century, although recent restitutions have introduced areas of communally managed lands.

Water and market access conditions

Unequal access to water

The Brits region is organised around the Crocodile River which flows from the south-east to the north-west. The Hartbeespoort Dam (constructed during the 1920s) and the irrigation network on either side of the Crocodile River constitute a very strong advantage for the farmers benefiting from them (Figure 9.3).

In the irrigated area, farmers presently benefit from free water quotas and only pay a tax for the maintenance and management of the network. However, thanks to the quantities of available water, quotas can be exceeded with a view to cultivating several productions per year on the same parcel. The distribution of water to farms relies on gravity.

Water quality is an important issue in the region. Two-thirds of the water in the Hartbeespoort Dam comes from effluent from urban, industrial and mining areas upstream (from Johannesburg, mainly). The treatment of these effluents with chlorine and the resulting pollution have been partly responsible for stopping the production of tobacco, which was the main industry in the region up until the 1980s. Likewise, the high rates of phosphate, nitrate and heavy metals in the water could be detrimental to vegetable producers. Moreover, eutrophication leads to the development of algae (*Cladophora*) and water hyacinth that blocks irrigation canals.

Proximity to many diversified markets

The town of Brits houses many agricultural service companies and constitutes the closest market for agricultural goods and services for farmers. The former MGK cooperative (Magaliesberg Graan Koöperasie – Magaliesberg Grain Cooperative), which was created by the farmers in the irrigated area at the beginning of the 1920s and transformed into a private company in 1998, is the main buyer of cereals (wheat, maize and sorghum) and oleaginous plants (soya and sunflower) in the region. Its various subsidiaries also sell inputs and offer financial, computer and technical advisory services.

In addition, the road network gives access to various markets within a radius of 80 km from Brits. The sale of vegetables is favoured by the proximity of Pretoria and Johannesburg where two major wholesale markets are found, as well as distribution

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branches of South African hypermarkets. The many townships around Pretoria and Johannesburg also attract an important portion of the vegetable production of the region of Brits through hawkers who buy locally. The development of mines, which are interested in mass catering services, represents an outlet for vegetables as well. Furthermore, cattle auctions are regularly organised in Beestekraal. Finally, the development of game farming for hunting purposes in the north of the area, and the riding schools of Gauteng, constitute important outlets for the production of alfalfa.

Abundance of cheap labour

The important flow of labour from the north of the country, Limpopo province in particular, as well as from the neighbouring countries of Mozambique and Zimbabwe, contributes to the maintenance of cheap labour used for temporary employment. Farm labourers often leave the region after a few months to go to Pretoria or Johannesburg to search for work. Consequently, this labour pool is regularly renewed.

Growing mining development in the region

The region of Brits is also characterised by strong mining development for minerals (vanadium, platinum and ferrochrome) and rock (norite). These mines compete with farming as far as land and labour are concerned. A portion of the farmland of the irrigated area of Brits might be requisitioned by the state for platinum extraction within twenty years. Water pollution due to heavy metals because of mining developments could increasingly create problems for irrigated agriculture.

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Agrarian history of the Brits region

From the year 1000 to the end of the 19th century: Population in the study area

The area around the Magaliesberg Mountains was occupied by communities of hunter-gatherers for thousands of years. Shortly after the year 1000 (i.e., the middle of the Iron Age), these communities began agriculture and animal farming, while developing the use of iron and copper (Liebenberg 2006). According to research conducted by the Bakwena Ba Mogopa during the establishment of the land restitution file, the Bakwena community was already present north of the Magaliesberg in the 17th century, on the banks of the Crocodile River and in the surrounding mountains.

In 1837, the Voortrekkers conquered these lands in search of fertile farmland and white farmers settled there. According to certain elderly farmers interviewed, each migrant family then acquired plots of several hundred hectares, positioned perpendicularly to the rivers. As such, land parcels that were close to the water

could be irrigated, while the more distant parcels could be dedicated to grazing for draught animals.

As a result of the pressure exerted by the settlers to gain access to a cheap labour force, Chief Mamogale and his followers fled for Basutoland between 1840 and 1845. It was only in 1868 that Chief Mamogale and his followers returned to settle in the region (Native Affairs Department 1905).

In the meantime, the first German Lutheran missionary, HW Behrens, named the mushrooming town Bethanie in 1864, and organised a town plan in straight lines, as well as the construction of a church and a school. The organisation of agriculture was then modified. Common pastures were grouped together in the north of the town on granite soils, and cultivation took place in the south on deep, clayey soils. Moreover, the missionaries helped the Bakwena Ba Mogopa to register the lands belonging to them around the Crocodile River (around 40 000 ha) with the Afrikaner authorities.

The agricultural situation at the beginning of the 20th century: Two already distinct farming methods

According to the survey, which included questions on the history of the region, as well as consultation of the land restitution file, two different production systems supposedly coexisted in the region in 1900.

The white farmers who were settled along the Crocodile River irrigated their crops by gravity. They dug furrows with spades and the water was then transported by canals in the ground, which were built between 1880 and 1900 to divert part of the water from the river (DWAF 1991). According to our interviews on the history of the region, these farmers then practised mixed crop–livestock farming. They had draught animals (cattle and donkeys) grazing on non-irrigable fields, as well as pigs, sheep, goats and poultry, among others. They consumed their own milk and meat produce, but sold the leather. As regards irrigated crops, they cultivated maize, wheat and vegetables for their own consumption, forage crops for the animals, and tobacco for their own consumption and to sell to miners.

According to the German missionaries' registration of lands belonging to the Bakwena Ba Mogopa community, we can certify that, in those days, black farmers cultivated in places which today are named Geluk, Losperfontein, Wolvekraal, Kareepoort and Leeuwkop (Figure 9.5). The majority of the Bakwena resided on black clayey soils that were used mainly to cultivate maize and sorghum (Geluk, Losperfontein, Wolvekraal, Kareepoort and Leeuwkop), and one individual from the family, usually a young man, resided on the pasture areas (Waaikraal and Beestekraal) to look after the family herd.

All farmers at the time ploughed the soil by means of animal traction and metal ploughs. Harvesting and threshing cereals was carried out with hand tools.

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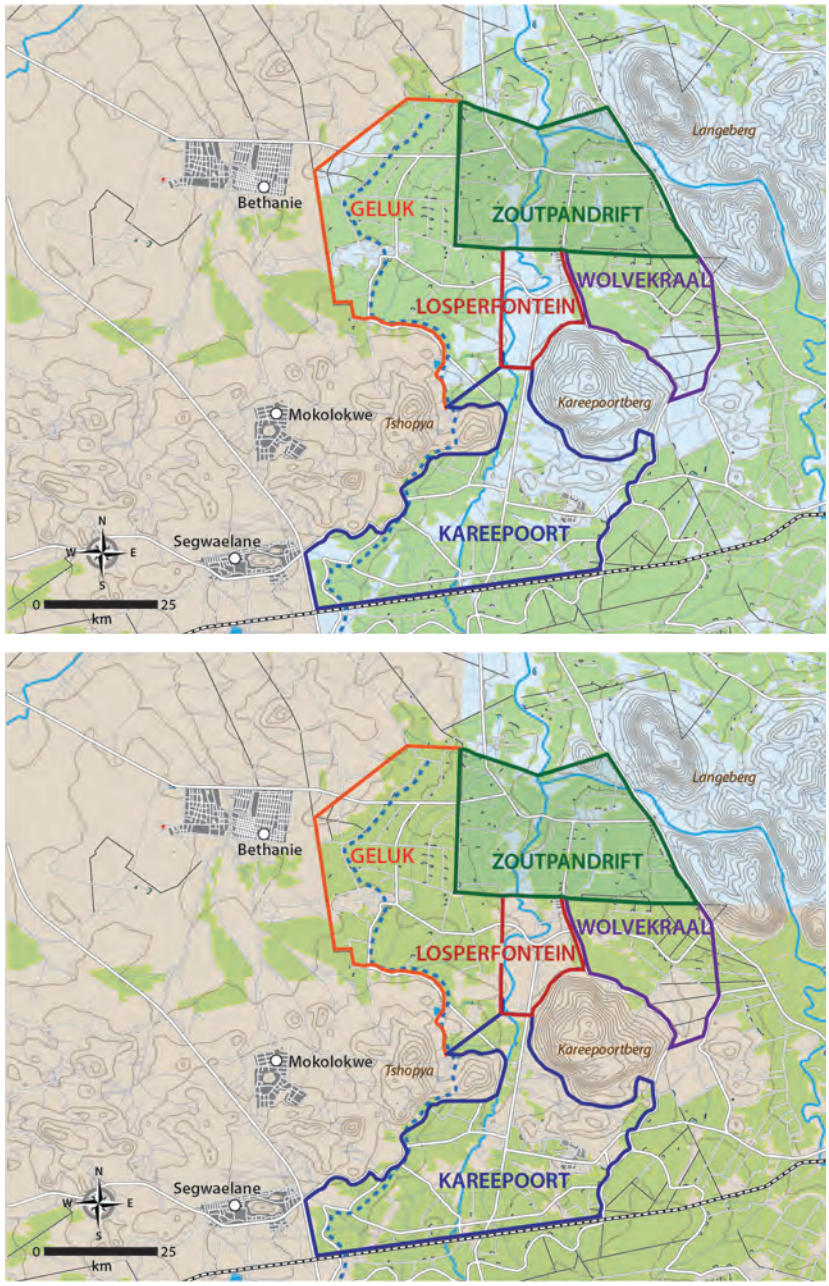
Figure 9.5 The construction of the irrigated area of Hartbeespoort and the eviction of the black populations (before, top, and after, bottom, 1924)



Note : The blue areas indicate lands occupied by white people.
Source: Authors

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1910–1940: Formalisation of spatial segregation and differential development between white and black farmers

At the beginning of the 1910s, the project for the construction of the Hartbeespoort irrigation dam on the Crocodile River, at the level of the Magaliesberg Mountains, was established by the government. It is in this context, in 1914, that the Hartbeespoort Irrigation Scheme Act No. 32 organised the movement of the black populations and as such implemented the spatial segregation provided for by the Native Land Act (Figure 9.5).

The network of irrigation canals from the Hartbeespoort Dam was commissioned in 1925 (DWAF 1991) and was progressively extended until 1933. The dam has a height of 57 m, a capacity of 160 million m^3 and a maximum flow rate of 2 700 m^3/second, which made gravity irrigation possible over a perimeter of close to 14 000 ha. Irrigable lands were divided into farms of an average surface area of around 10 ha, associated with a quota of irrigation water of 6 200 m^3/ha, and were allocated to white people. In addition to an irrigated plot, each farmer possessed a grazing area for cattle on non-irrigable lands. These pastures were in some places contiguous to the remainder of the farm, and in other places were dissociated and remote, depending on the location of the irrigated plot.

The white farmers who were originally present on these lands kept their lands and irrigation rights based on the old canals, but their plots were also developed by the state, as were others. As a result, these farmers had access to the water from the river not only through the old canals, but also through those of the Hartbeespoort network. Owing to successive inheritances, the lands of these families were subdivided into farms with sizes comparable to the farms established in the irrigated area.

As a result, the territory was divided into two: the irrigated area, exclusively reserved for white farmers and subdivided into plots of around 10 ha, and the black 'reserve' where the Bakwena Ba Mogopa community lived.

In the irrigated area, white farmers benefited not only from free access to water, but also from the presence of two new cooperatives: the MGK in Brits for wheat, maize and sorghum, and the Magaliesberg Koöperatiewe Tabak Vereniging (Tobacco Cooperative Association) in Rustenburg for tobacco. These cooperatives allowed them to benefit from stable prices as well as access farm inputs, which they could obtain on credit. As such, they were real financial intermediaries through which the government supplied subsidies via the Land Bank (Ortmann & King 2007).

The establishment of unequal agricultural and social policies led to the development of differential farming between white and black populations. Indeed, while the number of black farmers diminished and their means of production barely evolved, white farmers developed an irrigated agriculture that resorted to a paid labour force, which was being increasingly capitalised by public financial support and had turned to supplying both the internal and export markets.

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Agricultural situation in the study area between the 1930s and the 1950s

Agricultural situation in the black reserve between 1930 and 1950

According to our interviews on the history of the region and the 1953 report of the Department of Native Affairs, only the wealthiest families of the Bakwena Ba Mogopa community were able to cultivate their own lands. These were the families from which one member, often a man, had the opportunity to go and work in the mines, in a factory or as a domestic employee in town. The external salary then made it possible for the family to acquire, maintain and renew the cattle needed for ploughing, which not all families could afford. The poorest among them worked either for the white farmers in the irrigated area, who offered salaries that were clearly less than those paid for employment in town, or with their neighbours. In the latter case, they took part in the weeding, harvesting and threshing activities and, in return, obtained a portion of the harvest. The men who worked off-farm usually came back for a fortnight between November and December, at the beginning of the rainy season, to do the ploughing with animal traction. The remainder of the farming activities, cereal harvesting in particular, was carried out by the women and the children. Cattle were looked after by the young boys.

The farmland belonged to the community and its allocation was managed by the local authorities. These authorities allocated a twelve-acre plot (4.8 ha) to each family at the time of its establishment. Each household could subsequently acquire additional plots if it had the means to cultivate more.

All these farmers practised mixed crop–livestock farming for home consumption. The census conducted by the Department of Native Affairs in 1950 registered a cultivated surface area of 2 906 morgen (about 2 500 ha) for the entire Bakwena Ba Mogopa community, which then included 4 800 inhabitants. All the cultivated lands were located on the clay zone. The crops registered were maize, sorghum and fruit trees. Other plants were cultivated in lesser quantities: mung beans (*Vigna radiata*), marrows, melons, watermelons and sugar cane, among others. Since they did not have access to irrigation, all the crops were cultivated during the rainy season, from November to March. On average, maize and sorghum yields were 225 kg/ha. With a view to renewing the fertility of their own soils, white farmers in the irrigated area helped themselves to the manure from the black farmers' cattle enclosures (certain farmers said this was in exchange for a bag of citrus fruit). According to interviewees, black farmers did not have the workforce or the means of transport needed (ox wagon) to collect and use this manure in their own fields, since cultivated plots were rarely close to cattle enclosures.

Concerning livestock farming, only certain families owned cattle, with a maximum of twenty to thirty head. Some families also owned other types of livestock, such as pigs, poultry and goats. The animals grazed on the communal grazing areas situated north of Bethanie, and were looked after by one or several young men from the

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families. There were no fixed rules for accessing communal grazing areas or for limiting the grazing load, each community member being able to access it freely. The families with cattle had an enclosure on the communal grazing area where they could milk the cows and group them together. During the dry season, from May to the beginning of September, the animals were under common grazing on maize and sorghum stubble. Cattle were used to transport water and wood and as draught animals for ploughing. Males were slaughtered on the occasion of marriages and religious celebrations.

Agricultural situation in the irrigated lands between 1930 and 1950

In the irrigated area, each farmer owned his or her land (10–20 ha) in a private capacity, and exploited it through a mixed crop–livestock production system, based mainly on the irrigated cultivation of tobacco and wheat and marketed through the cooperatives. Wheat was cultivated in winter, sown from mid-May to mid-June, and harvested until 25 October. Tobacco was then cultivated in summer during the rainy season and transplanted from September to December, in order to spread the crop from December to mid-May. Once harvested, it was dried for one week in wood-heated dryers. The tobacco was then sorted and stored on the farm. It was finally sold throughout the year to guarantee a constant cash flow. In addition to tobacco and wheat, farmers also cultivated fodder plants such as alfalfa and oats. For irrigation, furrows were dug with spades, which required much labour. Farmers enhanced the fertility of their land by spreading manure from their own cattle and that taken from the enclosures of black farmers. They employed black farm labourers, some of whom were originally from Bethanie. The labour force was often lodged and fed on the farm and paid a very low salary. According to the survey, a farmer employed three to four workers on average, in addition to working family members. Children helped to milk cows and look after the cattle after school and during holidays.

Up until the 1950s, there was progressive mechanisation, with the appearance of reapers and then self-binders. During the 1945 to 1950 period, some farmers bought a tractor and a truck to transport the harvest, and sometimes a combine harvester. The farmers who had settled first in the region had time to accumulate more capital. On the other hand, producers who had enough capital to buy trucks and a combine harvester became agricultural entrepreneurs: they harvested and transported the produce of those who did not have the means to mechanise.

Concerning livestock farming, white farmers owned draught animals (cattle and donkeys) that grazed in non-irrigable fields, as well as other animals that remained close to the dwellings, such as milk cows, goats, pigs and poultry. Animal produce (meat and milk) was consumed mainly on the farm and used to feed farm workers.

Certain black farmers of Bethanie bought lands in the irrigated area in a private capacity. However, we have very little information on the subject. It seems that such transactions were special cases involving wealthy people who had privileged

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relationships with white farmers. According to the survey, these farmers supposedly implemented cropping systems similar to those of white farmers and kept their cattle on the communal grazing areas of Bethanie.

1950–1970: Motomechanisation and renovation of the irrigation network

The progressive development of motomechanisation, with the use of tractors and combine harvesters in particular, led to a change in the organisation of the labour force (De Klerk 1984). White farmers employed an increasing number of temporary labourers during peak periods when transplanting, harvesting, drying and sorting out tobacco. Owing to work casualisation, farmers employed more vulnerable workers, such as migrants, women and children (Marcus 1989). This led to a decrease in the number of Bakwena being employed by white farmers, many of whom went to work in towns, mainly Pretoria and Johannesburg. They earned salaries that progressively enabled their families to survive without having to carry out any farming activities. The number of farmers in Bethanie gradually decreased and, among the rare farmers who managed to stay, the wealthiest (those who had a family member working in town as early as 1920) bought a tractor, thanks to the accumulated external capital. They also ploughed the fields of other neighbouring farmers and animal traction disappeared. As far as cereal crops were concerned, they increasingly called on white entrepreneurs with combine harvesters.

Irrigation canals, previously dug into the bare ground, were cemented in 1953. We can suppose that this led to an increase in the efficiency of the canals and in the quantity of water available. In this context, this was the beginning of the expansion of white farms and their specialisation in wheat and tobacco cultivation. In 1960, the largest of these farms had surface areas of between 30 and 50 ha.

1970–1990: The 'independence' of Bophuthatswana and the tobacco farming crisis

The independence of Bophuthatswana and the establishment of the sunflower project

The South African government declared Bophuthatswana an 'independent black state' in 1977. At the time, the number of farmers in this bantustan had seriously decreased and much of the land that was good for cultivation was lying fallow. The puppet government of Bophuthatswana, influenced by the apartheid government, encouraged the development of large-scale motorised commercial farming, following the example of 'white' farming in the irrigated area. The government then subsidised the clearing of 3 300 ha and the creation of roads for tractors to cultivate the cleared lands. Within the framework of this project, thirty-three members of the Bakwena Ba Mogopa community were selected according to the seed money they had. These farmers then received 100 ha in exchange for a rent of R500/year paid to the community. The government set up a specific cooperative (Agricor) for

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storing, marketing and supplying equipment on credit. The cooperative decided to encourage the cultivation of sunflowers, which then became a rain-fed monoculture. The harvest was entrusted to equipped farmers from the irrigated area. The low yields, attributable to the fact that this was a rain-fed crop and that the equipment supplied on credit by the government had to be paid for, made the production of sunflowers non-viable for the farmers. Production then became all the more difficult with the droughts experienced in the 1980s. Out of the thirty-three initial sunflower producers, only three are still cultivating this crop today. On the whole, not only had the Bophuthatswana-based farming project established a cropping system that was little adapted to the climatic conditions of the region, it also resulted in black farmers becoming totally dependent on the cooperative and on white farmers.

Furthermore, the farmers that did not have access to the 3 300 ha of cleared land practised cattle or goat farming, sometimes in association with vegetable gardening. The milk, meat and vegetables produced were dedicated to home consumption. These farmers had their cattle grazing in the communal grazing lands north of the area. Some of them benefited from wells established by the government of Bophuthatswana, providing drinking water for animals.

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White tobacco farming crisis of the 1980s

The 'golden age' of tobacco in the region came to an end during the 1980s. Overproduction together with international sanctions against the apartheid regime brought prices down, and led to the establishment of quotas by the Rustenburg-based cooperative. Moreover, the fact that the water coming from Johannesburg was being increasingly treated chemically, led to irrigation water containing more chlorine. While chlorine is easily absorbed by the tobacco plant, it also contributes to reducing the quality and therefore the selling price of tobacco, thereby limiting the viability of tobacco production in the irrigated area.

In this context, the white farmers who were the most dependent on the cultivation of tobacco became unable to reimburse their debts to the cooperative and went bankrupt. Producers who had invested in cattle and those whose debts in the tobacco industry were less important, converted to market-oriented horticultural production as early as the 1980s. This activity benefited from favourable conditions thanks to the proximity of the fresh-produce markets in Pretoria and Johannesburg, the quality of the soils, irrigation possibilities and the availability of cheap labour.

1990–2010: End of the apartheid and post-apartheid policies

Agricultural support policies to black farmers

In the study area, 9 000 ha have been claimed by the community of the Bakwena Ba Mogopa who were evicted after the construction of the Hartbeespoort irrigation dam in 1924. Since 2006, 4 000 ha have been returned to the community. The land

was then redistributed to certain members of the community. Only very few of these beneficiaries manage to exploit the land successfully due to lack of farming skills and capital to invest in production means. As a result, most of the land that was returned is lying fallow. Among the land returned and currently exploited by beneficiaries of the land restitution process, some (non-irrigated) plots are being exploited for cattle grazing while other (irrigated) plots are being used for wheat and soya cultivation. A few restituted farms have been rented out to white farmers who have the means to exploit them.

Within the framework of the AgriBEE programme, the MGK company (formerly a cooperative) created a subsidiary, Temo Agri Services (hereafter referred to as TEMO), in 2003, which aims at assisting so-called 'emerging farmers'. From 2006 to 2008, TEMO benefited from government subsidies and today has access to annual government loans with subsidised interest rates, with a view to supplying agricultural inputs on credit to emerging farmers. TEMO can obtain a maximum of R500 000 per assisted farmer from the government, which it then lends to farmers at 8 per cent interest.

When TEMO was created, the arable lands of the former Bophuthatswana state were almost no longer exploited, since the sunflower production system was little adapted to the climatic conditions. However, despite the failure of the previous project, TEMO reinitiated the production of sunflowers by giving farmers of the community access to inputs and contract work (seedling and crop) on credit. Still unable to start an agricultural activity without financial support, farmers who want to farm have no other choice but to cultivate sunflowers.

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New dynamic of return to the land in the study area in the 1990/2000s

At the end of apartheid, many people, white and black alike, who had gone to work in town, returned to the study area to dedicate themselves to farming on a full-time basis. There are many reasons for this return dynamic.

On the one hand, because of the establishment of quotas favouring black employment in companies, some white people feared that their children would not find employment in town, and decided to come back to the family farm to ensure their children's future. In so doing, they took their pension and invested it in the family farm. Certain vegetable-growing farms expanded their working areas, invested in pivoting irrigation and set up motomechanised packing stations. Motomechanisation was also a consequence of the increase in farm-worker salaries, reaching around R50/day.

On the other hand, the Bakwena Ba Mogopa who had a job in town and whose salaries increased, came back to invest in the community. Some also invested their pension packages in farming. However, their pensions are commensurate with their salaries, and as such remain much lower than that of white people. According to

our survey, the Bakwena Ba Mogopa who came back during that period invested either in cattle which they sent grazing on communal grazing areas, or in sunflower production with the support of TEMO. Of note is the fact that, with access to new sales methods (e.g. auctions and butcheries), cattle farmers marketed their production by selling mainly calves and cows. Moreover, MGK subsidiary Obaro, which supplied farm inputs and was interested in cattle farming, encouraged cattle farmers to fatten up their calves and develop feedlots.

Finally, with the mining developments around Brits in the 2000s and the resulting rise in land value, an increasing number of city dwellers came to settle in the region of Brits and bought property at a lower price. Sometimes they started an agricultural activity on a part-time basis on the plot that came with the purchased property. This led to the development of low-intensity alfalfa production and various types of livestock farming in the region.

Characterisation of the production systems

The current farming characteristics in the study area result from the unequal relations that existed between white and black populations for more than a century. Indeed, unequal agricultural and social policies led to a differential agricultural development between white and black farmers. Differentiation between the various production systems is mainly attributable to inequalities in accessing land, water, capital and markets. As such, we can today differentiate four main groups of farmers:

- farmers who breed cattle on the communal grazing areas of the former bantustan and sometimes on private restituted lands;
- farmers who grow vegetables in the irrigated area of Hartbeespoort and who implement intensive production systems as far as labour, capital and inputs are concerned, thanks to the financial support from which they benefited under apartheid;
- farmers who benefited from the land restitution process, among whom very few manage to cultivate their plots in the irrigated area. Those who succeed cultivate wheat and soya through agricultural entrepreneurs;
- farmers who produce sunflowers on the cultivation lands of the former bantustan. These producers have no capital and therefore produce with the support of TEMO.

These main production systems can include several subsystems. Other systems have also been identified (producers of alfalfa together with various types of livestock farming in the irrigated area; vegetable gardens and goat farmers in the towns of the former bantustan), but will not be detailed here considering their low representativeness.

In the next section, each system is described and its economic results analysed.

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Production systems relying on cattle breeding

Three types of cattle breeders have been identified in the study area. These breeders, members of the Bakwena Ba Mogopa community, graze their cattle in the communal grazing areas of the former bantustan, on lands that are unsuitable for cultivation. These lands are situated in the north-west of the Brits region (Zone 1, non-irrigated on granite substratum). These producers are often part-time farmers or old age pensioners who employ a cowhand to look after the cattle. These systems produce Brahman-cross calves that are sold mostly at local auctions (situated in Beestekraal, Figure 9.1). Heifers are usually kept to increase the herd and therefore add to the number of calves per year. This system is used by farmers as a means of investing in easily mobilisable productive capital. They first invest in heifers, increasing their herd, then sell part of it when they need money. Among these production systems, we have identified three investment levels that make feeding, reproduction and health more or less easy to control, and involve different livestock-farming practices. In order to characterise each one of these systems and estimate a farm income, we have hypothesised a stable number of breeding cows from one year to the next. Based on this hypothetically stable system, it is then possible to calculate the growth capacity of the herd.

Cattle breeders who are established on community lands, but who do not have a bull (PS1)

At the lowest level of investment, farmers use communal grazing areas to which they have free access. Although they employ a cowhand, they are exposed to uncontrolled cross-breeding, theft and diseases, which are transmitted more easily when cows of different herds graze together. Moreover, according to some farmers, there is competition for the forage crop owing to the absence of concerted management. This apparently leads to overgrazing, during winter in particular. These farmers own between one and twenty cows and share with others the labour force, equipment and infrastructure (enclosures, troughs and accommodation for the cowhand), as well as the bulls. The only time they complement the diet of their cattle with alfalfa hay purchased from the irrigated area is during the dry season, in winter (May, June and July). These farmers often wait for ten to twelve months before selling their 200 kg calves (alive). At this level of investment, farmers experience significant losses (cows run over by vehicles, thefts and diseases) and have low control over reproduction. First-calving age is late and the number of calves per cow is low. Moreover, calving takes place throughout the year, which is not always conducive to good feeding for the calves owing to the low winter forage. It is also not conducive to benefiting from the best selling prices. In the event of a stable herd, these farmers obtain a net value added (NVA) per breeding cow of R740–R980. In addition, their herd has a growth capacity of 10 per cent (Figure 9.6).

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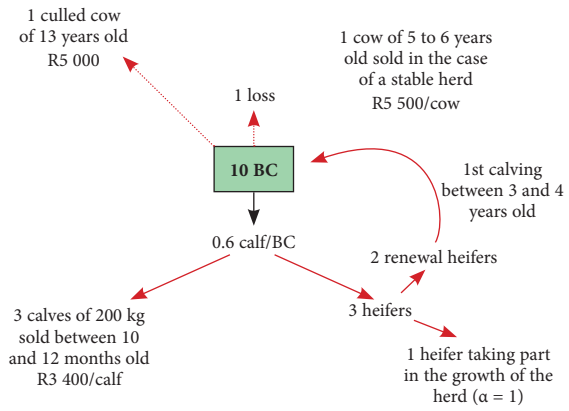
Figure 9.6 Diagram of the production system of cattle breeders who are established on community lands and who do not have a bull

Breeding cows = 1–20
Brahman cross
Zone 1
Communal grazing areas
Family labourers = 1
Pensioner or multiple job holder
Labour force = 0–1 shared
Surface water: rivers

Equipment
Enclosure
Troughs
Cowhand accommodation

No bull

Zootechnic diagram
In the event of a stable herd



Marketing
Direct sale
Auction

Economic results
GP/BC = R2 070
IC/BC = R885
GVA/BC = R1 185

NVA/labourer = R700–R9 740
FAI/family labourer = R690–R18 480
ExtI/family labourer = R48 000–R96 000

Note: BC = breeding cow, GP = gross product, IC = intermediate consumption or costs, FAI = family agricultural income, ExtI = external income (= non-farm income), GVE = gross value added
Source: Authors

Cattle breeders who are established on community lands and who have a bull (PS2)

At the intermediary investment level, farmers have between fifteen and forty-five cows, as well as their own bull. As for the breeders in the previous system, their cattle graze on community lands. As with PS1 farmers, they employ a cowhand to look after the herd to reduce the risks of cross-breeding and loss. They also have their own equipment and infrastructure (enclosures, troughs and cowhand accommodation). These farmers often have access to underground water that carries less disease than the river, but that requires additional equipment such as wells, boreholes and watering places. Finally, they supplement the diet of their cows throughout the year. As a result, these breeders have a better reproduction rate with cows calving as early as two years old and with an average of 0.8 calves/year. They sell their calves younger (between eight and ten months) at the same weight (200 kg), and their cows for a

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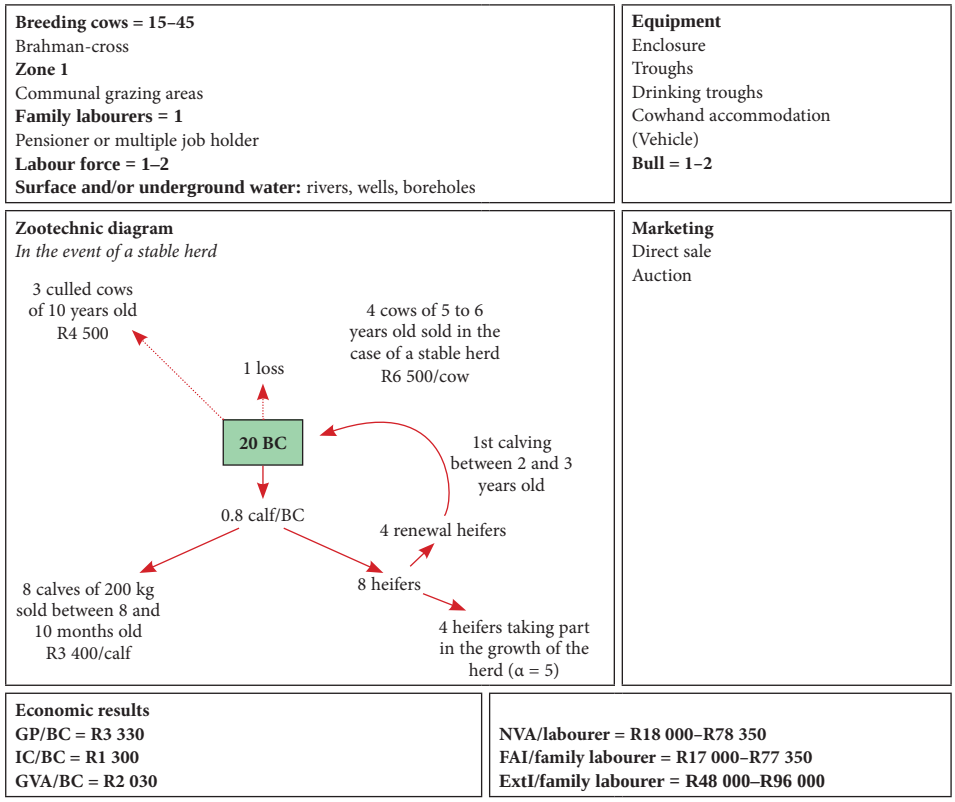
better price (Figure 9.7). Their NVA per breeding cow is higher than that of PS1, between R1 270 and R1 790, and they have a growth capacity of 20 per cent.

Cattle breeders who are established on private lands and who have a bull (PS3)

At the highest level of investment, these farmers usually have twenty-five to forty-five breeding cows and own private land. This prevents cross-breeding and the transmission of diseases between livestock. Also, overgrazing and theft risks are reduced. The farmers can compartmentalise their land with a view to monitoring grazing, and can build enclosures to isolate certain plots, monitor reproduction better and fatten up certain animals. However, this is quite rare given the cost of installing this type of infrastructure (around R20 000). Most farmers in this category are the recent beneficiaries of family land restitutions. As such, their production systems are

Figure 9.7 Diagram of the production system of cattle breeders who are established on community lands and who have a bull



Note: BC = breeding cow, GP = gross product, IC = intermediate consumption or cost, FAI = family agricultural income, ExtI = external income (= non-farm income), GVA = gross value added

Source: Authors

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transitional and not yet very stable. With this system, farmers can sell 200 kg calves as early as six months old (Figure 9.8), but the NVA per breeding cow obtained is less than that of PS2, owing to the level of investment and the maintenance costs for the herd, which are both much higher. The NVA/breeding cow ranges between R810 and R1 100, and they have a growth capacity of 27 per cent.

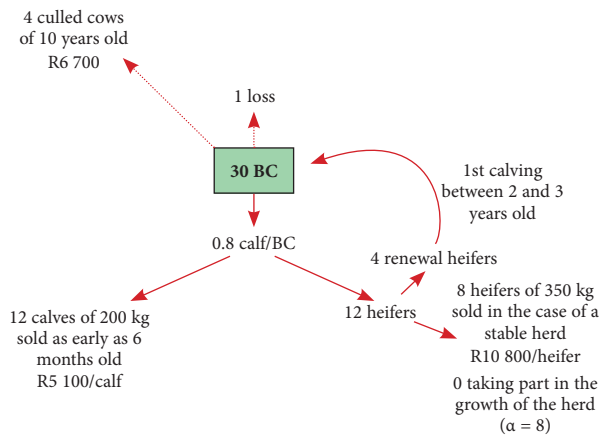
These different levels of investment sometimes represent the different stages of development of the same production system. For breeders, the objective of the first level of investment is to increase the number of cows with a minimum investment and production cost. Then, the objective is no longer to increase the size of the herd but to increase the reproduction rate, while keeping an eye on feeding and health to reduce losses and sell at a better price. More rarely, when the farmer has access to private land, breeding and fattening up become possible.

Figure 9.8 Diagram of the production system of cattle breeders who are established on private land and who have a bull

Breeding cows = 25–45
Brahman-cross
Zone 1
Restituted land
Family labourers = 1
Pensioner or multiple job holder
Labour force = 2
Surface and underground water: rivers, wells, boreholes

Equipment
Fencing
Enclosure
Troughs
Drinking troughs
Cowhand accommodation
Vehicle
Bull: 1–2

Zootechnic diagram
In the event of a stable herd



Marketing
Direct sale
Auction

Economic results
GP/BC = R3 480
IC/BC = R1 600
GVA/BC = R1 880

NVA/labourer = R30 290–R67 290
FAI/family labourer = R28 290–R65 290
ExtI/family labourer = R48 000–R96 000

Note: BC = breeding cow, GP = gross product, IC = intermediate consumption or costs, FAI = family agricultural income, ExtI = external income (= non-farm income), GVA = gross value added
Source: Authors

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Sunflower producers on the rain-fed lands of the former bantustan (PS4)

Sunflower producers are all located in the non-irrigated swelling clay area of the former bantustan of Bophuthatswana (Zone 2, Figure 9.3). While they do not have access to irrigation, they only produce rain-fed crops, from December to May. These Bakwena Ba Mogopa producers benefit from access to communal lands for R5/ha/year. They cultivate areas between 80 and 300 ha, with only one family labourer. Of note is the fact that these farmers are all pensioners who used to have a different occupation and who ended up investing their pension in farming.

The majority of these farmers have annual contracts with TEMO. Because the farmers live and cultivate on communal lands, they do not have access to credit. As such, they are dependent on TEMO to access inputs on credit for cultivating sunflowers. This is later deducted from the crop yield and is why all the arable communal lands situated in the non-irrigated area are used for sunflower monoculture. By working with TEMO, the farmers undertake to make all decisions concerning their crops in conjunction with a mentor – a person who TEMO recognises as having experience and who is remunerated for passing his or her knowledge on to emerging farmers through advice.[1] The production process is thus imposed by TEMO.

Yields are low – from 0.6–1.2 tons/ha, with an average of 0.8 tons/ha – and vary considerably according to the quantity and regularity of the rainfall during the rainy season. It might happen that the gross product is not sufficient to cover all the costs advanced by TEMO, in which case the farmers undertake to continue cultivating sunflowers under contract with TEMO during the following years, until they can reimburse their debts. In the event of a yield of 0.8 tons/ha, the NVA obtained is around R1 000/ha (Figure 9.9).

Producers of wheat/soya who are beneficiaries of the land restitution process (PS5)

The producers of wheat and soya in the region are, for the most part, beneficiaries of the community land restitution process which has been ongoing in the irrigated area of Hartbeespoort. They cultivate the clayey interfluves of the irrigated area (Zone 3, Figure 9.3). However, they are not representative of most land restitution beneficiaries, around 95 per cent of whom cannot cultivate their land for lack of investment capital.

These farmers cultivate 10–20 ha under irrigation. They are characterised by a low investment capacity, which prevents them from purchasing their own irrigation and cultivation equipment. For that reason, cultivation operations are carried out by agricultural entrepreneurs, and the money required for production is advanced by an MGK subsidiary, Prodsure, which buys their harvest from them. They benefit from government aid in the form of a degressive subsidy over five years, to pay for irrigation water. In the first year, 100 per cent of the water is paid for, then 80,

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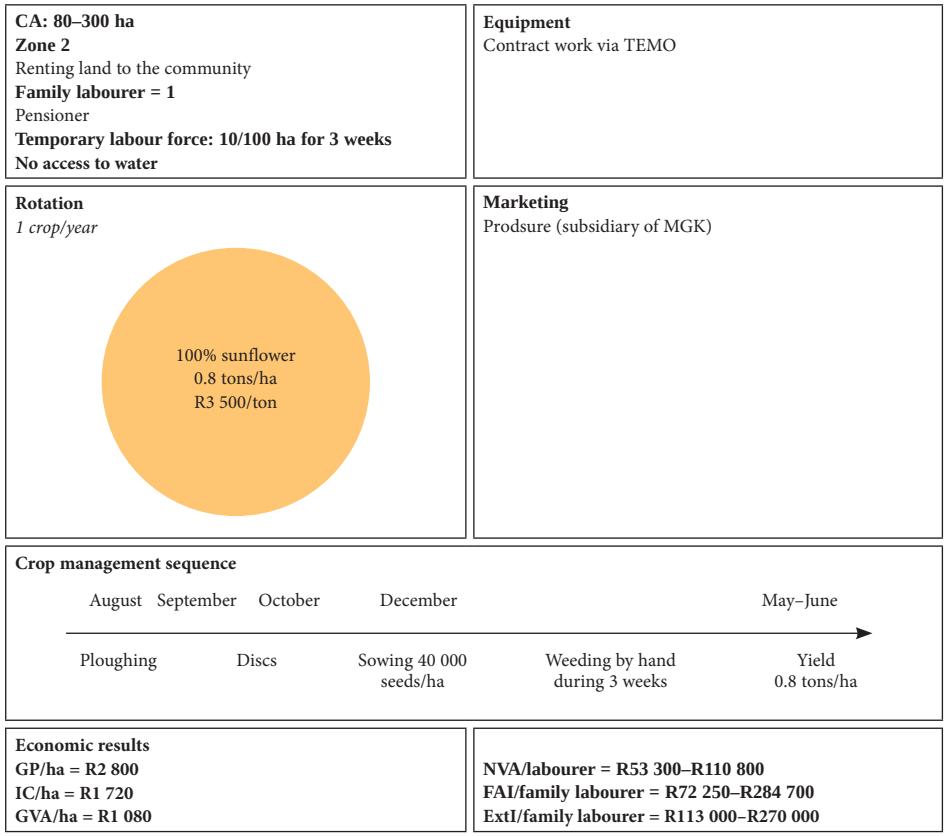
Figure 9.9 Diagram of the production system of sunflower producers on the rain-fed lands of the former bantustan



Note: CA = cultivated area, BC = breeding cow, GP = gross product, IC = intermediate consumption or costs, FAI = family agricultural income, ExtI = external income (= non-farm income), GVA = gross value added
Source: Authors

60, 40 and 20 per cent in succeeding years. Irrigation relies on gravity through furrows dug into the plots. The water is guided with shovels, for which two to four permanent employees are required. These farmers obtain an NVA per hectare of between R5 560 and R7 000. Some farmers benefit from plots where former owners had pivoting irrigation systems, which the current farmers can use. This leads to reduced workforces and greater yields, but requires electricity. They then produce higher NVAs, reaching between R8 080 and R10 380. These farmers are sometimes 'promoted' by former white farmers who give them advice and take on the sale of their production on the Johannesburg market (Figure 9.10).

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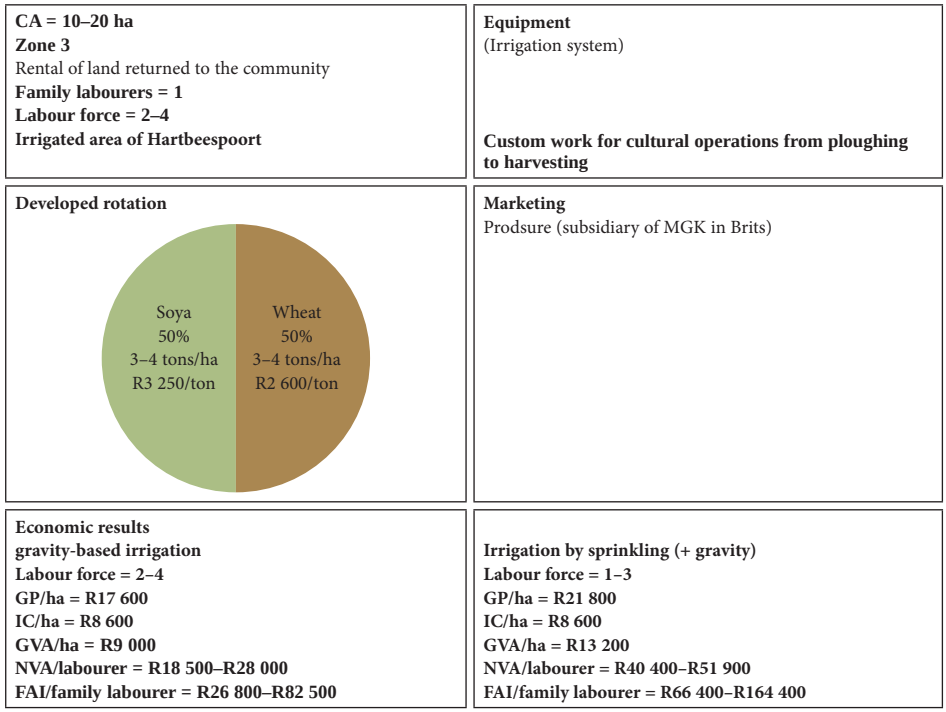
Figure 9.10 Diagram of the production system of wheat/soya producers who are beneficiaries of the land restitution process



Note: CA = cultivated area, GP = gross product, IC = intermediate consumption or costs, FAI = family agricultural income, GVA = gross value added
Source: Authors

Irrigated market garden production systems

All the vegetable-growing farms identified are located in Zone 3 (irrigated area, deep clayey soils; Figure 9.3). Their common characteristic is the fact that they have access to irrigation which enables them to cultivate vegetables throughout the year and to carry out up to two cropping cycles per year. Historically, these are the wheat and tobacco production systems in the irrigated area which ended up being converted into market-oriented horticultural production from the 1980s to the 1990s.

These production systems are very intensive as far as labour is concerned and employ a workforce for relatively long periods. Despite the recent salary increases, the minimum compulsory remuneration remains low (R50–R60/day). Moreover, the recent waves of immigration from Zimbabwe and Mozambique have increased the labour force available for farming. Some producers can afford to employ workers on a daily basis throughout the year. Market-oriented horticultural producers differ mainly in their marketing methods, leading to different strategies in terms of production, workforce management and equipment level. Of note is that the market-

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garden productions detailed below vary according to the market and can change from one year to the next.

Market-oriented horticultural producers with a sales contract (PS6)

Among the market-garden production systems identified, some sell the majority of their produce through a contract with hypermarkets or with mass catering franchises that impose the condition and packaging of the vegetables on the farm. The main advantage of a contract for a farmer is having outlet security and a stable price determined in advance for each season. This way, farmers can obtain a price which is higher than the market price during periods when production is high, as in summer when prices are low. On the other hand, the market-oriented horticultural producer under contract obtains prices that are not as good as the market prices in winter and during the festive season, when vegetable prices are at their highest. This is due to the high demand in the festive season and to the low production in winter because of drought and cold in the rest of the country.

The sales contracts typically stipulate constant production throughout the year to supply supermarkets or mass catering. As a result, this type of farmer cultivates vegetables so as to be able to harvest them throughout the year. Two types of vegetables are produced throughout the year: beetroots and carrots, which are not easily damaged by hail, and cabbages and spinach, which are sensitive to hail. These four productions represent two-thirds of the entire planted surface area during the year, distributed in such a way as to spread out potential losses due to hail. For agricultural areas of 70–150 ha, they employ between thirty-five and seventy-five permanent workers (i.e., one permanent worker on average for 2 ha). Permanent workers look after the irrigation, drive tractors and see to the harvesting and packaging of the four productions.

Moreover, the sales contracts give farmers an opportunity to diversify production, unless it is imposed upon them. As such, one-sixth of the planted area is dedicated to produce that can be varied extensively, depending on the farmer: onions, sweet potatoes, tomatoes, green mielies, marrows, green peppers, green beans, lettuce, broccoli and cauliflower, among others. The harvesting, conditioning and packaging of this produce represents the busiest time in the year. Temporary workers are then employed on a daily basis. Between twenty and forty-five temporary workers are employed for nine months of the year for these types of produce.

Finally, the rest of the area is cultivated with wheat so as to establish a rotation with the vegetables and to limit diseases. Considering that only a small area of the farm is used for the cultivation of cereals, these producers do not usually own a combine harvester and have the wheat harvested by a third party. On the other hand, they have all the equipment needed for cultivating with mechanised tools, sowing vegetables and irrigating with sprinklers. How much equipment they have depends on the cultivated area, for example, four tractors are needed for 100 ha.

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Farmers must deliver their produce daily to Pretoria or Johannesburg, which are around 80–90 km from Magaliesberg. This implies that they own one or more trucks, depending on their production volume. Since a sales contract often lays down hygiene and quality standards, farmers must invest in a packing station which is up to standard and must sometimes be GlobalGap-certified,[2] in order to sell to certain supermarkets. These standards represent one of the largest constraints for these farmers, particularly with the 2011 Consumer Protection Act, which enforces traceability and labelling. Many farmers are worried that they will be sanctioned because of the potential presence of heavy metals in the irrigation water, caused by the proximity of the mines and the pollution of the dam.

In situations of high demand or when there are weather issues, farmers sometimes buy a portion of the production of neighbouring market-oriented horticultural producers who do not benefit from a sales contract, in order to honour theirs. However, since they are contracted to sell only prime-quality vegetables, they must find other marketing circuits to sell their produce to, such as wholesale markets or hawkers. This means that they compete with other producers owing to their large, cultivated areas and to the stability afforded by the contracts.

This type of farmer produces irrigated market-garden crops with several cycles a year. The crops are sold at high prices, thanks to a sales contract. As a result of these advantages, these production systems benefit from a high NVA per hectare (R117 000–R121 000/ha). Labour productivity (NVA/labourer) reaches a high level, in the region of R140 000–R150 000/labourer/year. Considering the very unequal distribution of value added between the workers, who are paid little, and the management, the income of the market-oriented horticultural producer (i.e., remuneration for managerial work and invested capital) can be very high, in the region of R3.5–R8 million/family labourer (Figure 9.11). Economic results are detailed in Table 9.1.

Market-oriented horticultural producers selling at the wholesale market (PS7)

Other producers of vegetables sell their produce on the wholesale market where prices fluctuate considerably according to the season. These farmers focus on a few vegetable crops only, such as onions in winter, with a view to maximising their selling price by producing during periods of high demand or low production in the rest of the country. Moreover, a less diversified production gives them an opportunity to produce large volumes, so allowing them to negotiate or influence selling prices. These farmers usually dedicate half of the planted area to carrots and/or beetroots, which are not easily damaged by hail, and onions. While they do not have access to a reliable outlet when marketing their vegetables, they limit their risks by cultivating slightly more than a third of the planted area with wheat in winter, then with soya or maize in summer, depending on market prices. They sell this produce mainly to MGK in Brits. Since they cultivate a greater area with cereals and

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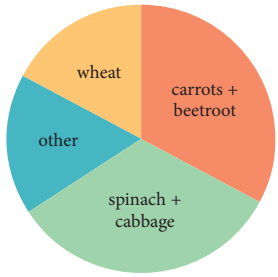
Figure 9.11 Diagram of the production system of market-oriented horticultural producers with a sales contract

CA = 70–150 ha
Zone 3
Private property
Family labourers = 2
Permanent workforce = 35–75
Temporary workforce = 20–45
Water from Hartbeespoort Dam and underground water

Equipment
Irrigation equipment (sprinklers and pumps)
Cultivation equipment
Vegetable drill
Tractors (45–90 kW)
More or less mechanised packing station
Delivery truck

Rotation of developed areas
with 1.5 crops/year

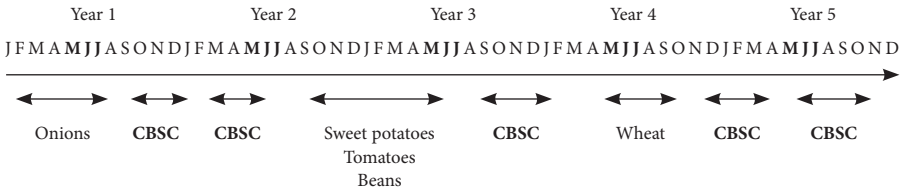


Other (minor) crops: sweet potatoes, onions, tomatoes, marrows, green peppers, green beans, lettuce, broccoli, cauliflower, green mielies

Marketing
Vegetables sold under contract, surplus sold at the wholesale market and to hawkers

Wheat sold via cooperative

Example of cropping calendar



Economic results
GVA/ha = R129 300

NVA/labourer = R141 600–R149 000
FAI/family labourer = R3.5–R8 million

Note: CA = cultivated area; FAI = family agricultural income; CBSC = carrots, beetroot, spinach, cabbage; GVA = gross value added
Source: Authors

oleaginous plants which are less labour intensive, their production system requires a smaller workforce. On the other hand, they are well equipped: grain drill, combine harvester for harvesting wheat and soya, and pivoting irrigation (from three to five booms of 50 m).

The system is based on the daily employment of workers on a part-time basis. The number of workers employed each day is decided according to needs, for example no workers are employed when it rains and during the following days since the soils, which are already too clayey, become unworkable. For areas of 200–350 ha,

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Table 9.1 Simplified economic results of vegetable-growing farms with a sales contract (PS6)

	Carrots (ton)	Beets (ton)	Spinach (bunch)	Cabbages (units)	Wheat (ton)	Other vegetables
Average yield (/ha)	50.25	29.25	36 000	20 250	6	/
Average price (R)	3 495	3 198	413	323	2 600	/
Gross product/ha	175 624	93 542	148 800	65 408	15 600	/
Intermediary costs (IC) seeds/plants (R/ha)	8 000	3 000	8 660	6 165	1 720	/
IC fertilisers and micro-elements (R/ha)	6 200	6 200	8 000	5 700	2 645	/
IC phyto-sanitary treatments (R/ha)	575	1 000	670	730	250	/
IC packaging	9 320	3 229	240	–	–	/
IC commission fresh-produce market (R/ha)	7 460	4 480	6 930	3 431	–	/
IC transport (R/ha)	–	–	–	–	288	/
IC/ha (R/ha)	31 555	17 909	24 500	16 026	4 903	/
GVA/ha (R/ha)	144 069	75 633	124 300	49 382	10 697	100 000
	Surface: 100 ha 2 family labourers 50 permanent workers and 30 temporary workers					
GVA (R)						12 601 514
Depreciations (R)						298 033
General costs (R)						682 480
NVA (R)						11 621 001
NVA/worker (R)						141 720
NVA/ha (R/ha)						116 210
Labour (R)						1 067 850
Interest (R)						383 231
Rent (R)						40 000
FAI/family labourer (R)						5 064 960

Source: Authors

they employ between sixty and one hundred and twenty workers to look after the irrigation system, and fifty to eighty-five temporary workers for three months in winter to harvest onions, with two managers to supervise the work.

As for the previous category of farmers, these farmers must pack their produce and deliver it to the wholesale market in Pretoria or Johannesburg. This means that they usually own a packing station which is more or less mechanised, or rely on a packing station shared by several farmers. The quality of the packaging plays a major role in competing with the other producers.

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However, it must be noted that, in order to sell at the wholesale market, it is necessary to have an agent and therefore access to a network of people. A commission of 15 per cent is deducted from all produce sold to reimburse the agent and for the hygiene costs.

At times, these farmers help PS6 farmers to fulfil their contracts. However, during periods of overproduction, both types of farmers compete to access the wholesale market. They also encounter difficulties as far as the traceability of their production is concerned, which is compulsory for sales at the wholesale market. Finally, they sell their second-quality production to hawkers, thereby competing with the PS8 farmers.

This type of farming benefits from an NVA/ha which is less important than in the PS6 type. Indeed, these farmers sometimes obtain lower selling prices for their vegetables, cultivate a greater portion of cereals (with a lower NVA/ha than for vegetables) and, above all, own more farming equipment which depreciates in capital. Their NVA/ha reaches R72 600–R76 400/ha (i.e., around €7 260–€7 640/ha). Labour productivity (NVA/labourer) is also not as high, in the region of R80 000–R90 000/labourer/year. On the other hand, the income of these market-oriented horticultural producers (i.e., remuneration for their managerial work and their invested capital) is very high and can reach R5–R11 million/family labourer (Figure 9.12). Economic results are detailed in Table 9.2.

Market-oriented horticultural producers selling to hawkers (PS8)

This category includes those market-oriented horticultural producers who sell their produce only through hawkers who buy vegetables directly from them on the farm or at collection points, and resell them in the townships. Farmers who market their produce in this way do not have to make deliveries (or if they do, it's to the nearest collection point) and do not require transport. However, only those who are located along a major trunk road can benefit from this selling method. Despite various advantages, such as the fact that these producers are not subject to traceability, their produce does not require packaging and they do not have to pay a commission, this selling method is never assured because hawkers might decide to stop buying from them from one day to the next.

The planting areas (10–20 ha) of these producers are far smaller than those of the two previous types, which means that producers only employ between ten and twenty permanent workers. Given that they compete with the other market-oriented horticultural producers who also sell their second-rate produce to hawkers, and in order to always have a market, they produce vegetables for which there is a high demand throughout the year: spinach, tomatoes, sweet potatoes and beetroot, among others. Since these producers have smaller cash flows, it is difficult for them to produce vegetables with expensive inputs, such as carrots or onions. As with PS7 market-oriented horticultural producers, they sometimes also sell their produce to PS6 producers who cannot fulfil their contract.

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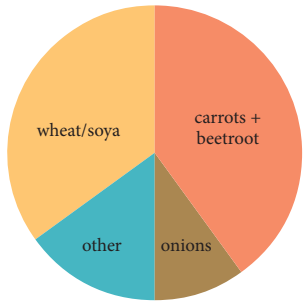
Figure 9.12 Diagram of the production system of market-oriented horticultural producers selling at the wholesale market

CA = 200–350 ha
Zone 3
Private property
Family labourers = 2
Permanent workforce = 120–210 (part time)
Temporary workforce = 50–85
Water from Hartbeespoort Dam and underground water

Equipment
Irrigation equipment (sprinklers and pumps)
Cultivation equipment
Vegetable drill
Tractors (45–90 kW)
More or less mechanised packing station
Combine harvester
Delivery truck

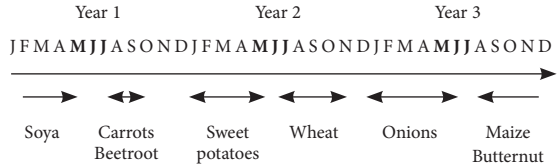
Rotation of developed areas
with 1.7 crops/year



Other (minor) crops: sweet potatoes, marrows

Marketing
Vegetables sold at the wholesale market (surplus sometimes sold to hawkers)
They sometimes help PS6 market-oriented horticultural producers to fulfil their contract for the supply of vegetables
Wheat and soya sold via cooperative

Example of cropping calendar



Economic results
GP/ha = R128 000
IC/ha = R40 700
GVA/ha = R88 200

NVA/labourer = R83 300–R88 300
FAI/family labourer = R5.75–R11 million

Note: CA = cultivated area, GP = gross product, IC = intermediate consumption or costs, FAI = family agricultural income, GVA = gross value added
Source: Authors

The equipment requirements of this type of farmer are far less than those of the two previous types. These market-oriented horticultural producers own a tractor and cultivation equipment, and irrigation is carried out either with sprinklers or by gravity (in furrows or by immersion). Owing to the smaller number of crops per year and to the lower selling prices, this type of farming operation obtains a smaller NVA/ha (R45 900–R55 800/ha) than the two previous types (Figure 9.13). Labour productivity (NVA/labourer) is not as high and is in the region of R65 000–R80 000/labourer/year. The income of this type of market-oriented horticultural producer reaches R600 000–R1.4 million/family labourer (Figure 9.13). Economic results are detailed in Table 9.3.

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Table 9.2 Simplified economic results of vegetable-growing farms selling at the wholesale market (PS7)

	Carrots	Beets	Onions	Sweet Potato	Marrow/ Butternut	Maize	Wheat	Soya
Average yield (t/ha)	50.25	29.25	45	40	30	12	6	4
Average price (R/t)	2 799	2 296	3 100	2 000	2 000	1 300	2 600	3 250
Gross product/ha	140 650	67 158	139 500	80 000	60 000	15 600	15 600	13 000
Intermediary costs (IC) seeds/plants (R/ha)	8 000	3 000	10 000	–	5 712	2 000	1 720	1 015
IC fertilisers and micro-elements (R/ha)	6 200	6 200	6 400	6 200	5 625	5 500	2 645	–
IC phyto-sanitary treatments (R/ha)	575	1 000	3 170	1 330	–	1 000	250	500
IC packaging	9 320	60	6 750	3 000	3 000	–	–	–
IC commission fresh-produce market (R/ha)	21 094	10 074	20 925	12 000	9 000	–	–	–
IC transport (R/ha)							288	192
IC/ha (R/ha)	45 189	20 334	47 245	22 530	23 337	8 500	4 903	1 707
GVA/ha (R/ha)	95 461	46 824	92 255	57 470	36 663	7 100	10 687	11 293
Surface: 200 ha 2 family labourers 120 permanent workers and 50 temporary workers								
GVA (R)								17 497 851
Depreciations (R)								875 591
General costs (R)								2 236 050
NVA (R)								14 368 209
NVA/worker (R)								83 536
NVA/ha (R/ha)								71 841
Labour (R)								2 086 812
Interest (R)								766 462
FAI/family labourer (R)								5 757 467

Source: Authors

Comparison of the different production systems

Labour productivity and income

Figure 9.14 contains the results of the various production systems examined in this chapter, in terms of NVA/labourer. For each production system, the minimum and maximum values calculated (and reported on in the figures illustrating each production system) have been indicated with a view to illustrating possible differences in results within a given farm type. These differences are particularly

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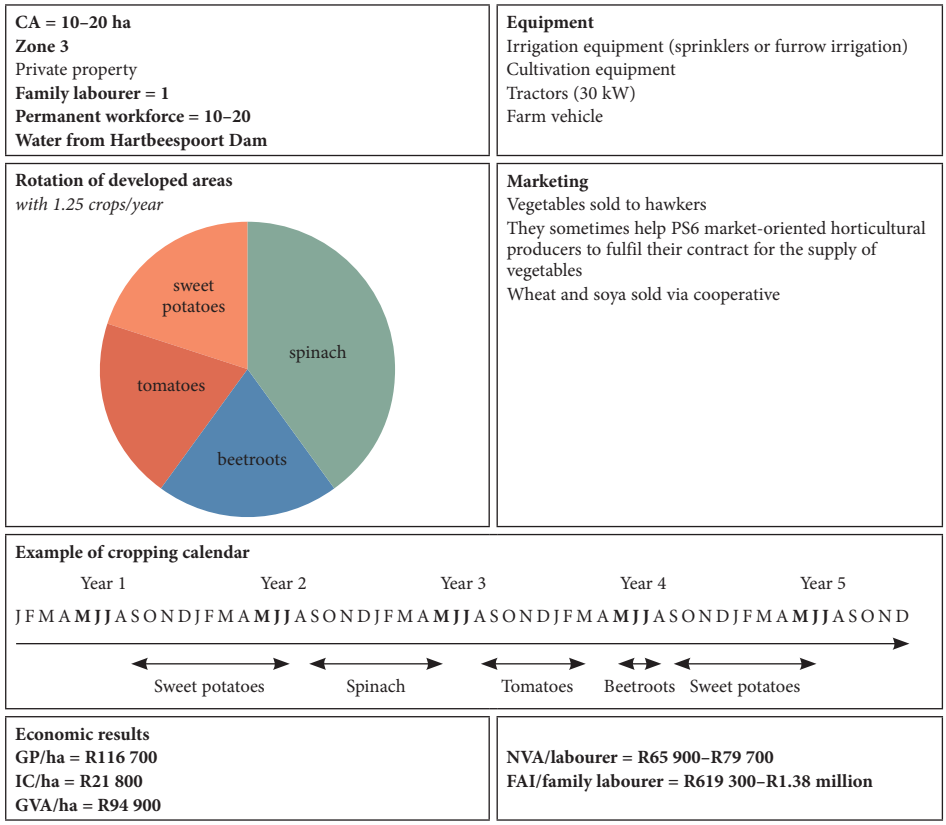
Figure 9.13 Diagram of the production system of market-oriented horticultural producers selling to hawkers



Note: CA = cultivated area, GP = gross product, IC = intermediate costs, FAI = family agricultural income, GVA = gross value added
Source: Authors

important for the first four systems examined, because of the differences in terms of herd numbers (PS1 to PS3) and areas cultivated with sunflowers (PS4). For PS5 to PS8 these differences are smaller because in the irrigated area, the area cultivated per labourer and the ensuing economic results are far less variable within each system.

Beyond this variability, the differences found in labour productivity are relatively moderate between the systems, except for the first breeding system examined (PS1). This can be explained by the fact that on the vegetable-growing farms in the irrigated area, the very high number of manual tasks limits labour productivity gains, even if the value added created per unit area is much higher than on the rain-fed lands of the community of Bethanie.

On the other hand, income differences are significant, as can be seen in Figure 9.15. This is attributable to the unequal distribution of the value added produced

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Table 9.3 Simplified economic results of vegetable-growing farms selling to hawkers (PS8)

	Beets (ton)	Sweet potato (ton)	Spinach (bunch)	Tomato (ton)
Average yield (/ha)	20.6	22.5	26 250	50
Average price (R/t)	2 265	2 000	3.67	3 650
Gross product/ha	46 659	45 000	96 338	182 500
Intermediary costs (IC) seeds/plants (R/ha)	2 000	-	6 190	2 000
IC fertilisers and micro-elements (R/ha)	5 700	5 700	7 500	6 500
IC phyto-sanitary treatments (R/ha)	1 000	1 330	670	700
IC packaging	1 520	1 690	240	30 000
IC/ha (R/ha)	31 555	17 909	24 500	16 026
GVA/ha (R/ha)	144 069	75 633	124 300	49 382
		Surface: 10 ha 1 family labourer 10 permanent workers		
GVA (R)				948 735
Depreciations (R)				41 200
General costs (R)				182 340
NVA (R)				725 195
NVA/active (R)				65 927
NVA/ha (R/ha)				72 520
Labour (R)				144 000
FAI/family labourer (R)				581 195

Source: Authors

by salaried employees. The low daily remuneration of the latter, well below their productivity (the value added created per work day), shows that the greatest portion of this value added ends up in the hands of the farm owner. This is all the more significant for the vegetable-growing systems employing a larger external workforce. In these capitalistic vegetable-growing farms, our calculations show that the portion of value added allocated to the remuneration of the workforce is minimal (8 per cent–11 per cent), which of course guarantees an excellent remuneration to the farmers and their invested capital.

By comparing the family farm incomes of the different production systems, we can measure the extent of the differences (Figure 9.15). On the one hand we can observe producers (PS6, PS7) with significant areas (35–175 ha) per family labourer and very high incomes (R3.5–R11 million/family labourer/year). These are market-oriented horticultural producers, those with sales contracts and those selling on the wholesale market, who have access to irrigation, production means and an outlet on the internal vegetable market. In third position are the market-oriented horticultural

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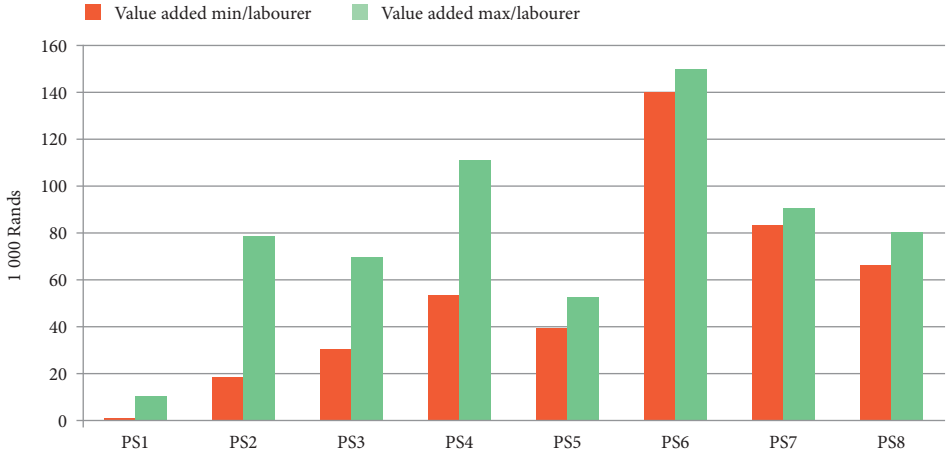
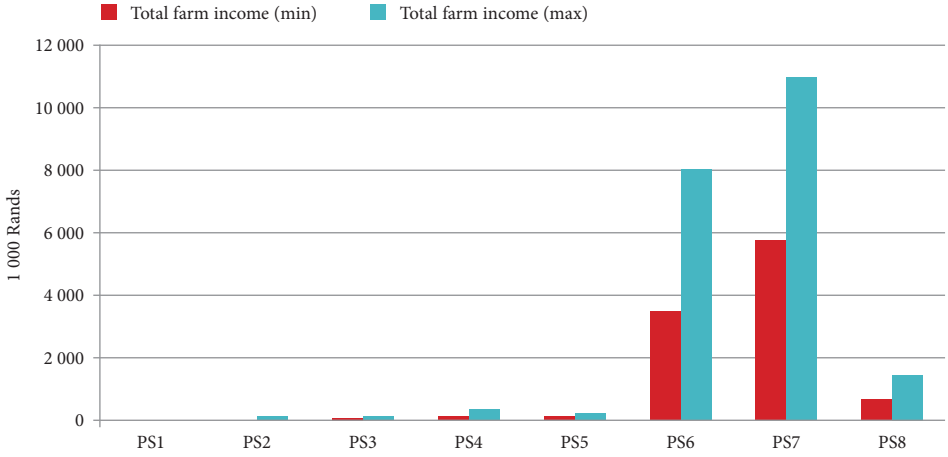
Figure 9.14 Comparison of labour productivity for the main production systems examined (in 2011 rands)



Source: Authors

Figure 9.15 Comparison of farm income for the main production systems examined (in 2011 rands)



Source: Authors

producers selling to hawkers (PS8). They have much smaller areas (10–20 ha/family labourer) and relatively low incomes compared to the large market-oriented horticultural producers (R620 000–R1.38 million/family labourer/year).

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Producers cultivating wheat/soya (PS5) on modest areas (10–20 ha) under irrigation, and producers cultivating rain-fed sunflowers (PS4), who have access to significant areas, receive considerably lower incomes (R75 000–R290 000/family labourer/year). Finally, families who practise the various breeding systems examined (PS1–PS3) achieve particularly low incomes compared with those obtained by neighbouring farmers, in the region of a few thousands or tens of thousands of rands only (Figures 9.6, 9.7 and 9.8), which cannot sustain these families unless they have additional sources of income.

Development perspectives and conclusion

Overall, the region is dominated by motomechanised farms that are specialised in field-scale, market-oriented horticultural production. The region benefits from comparative advantages linked to pedoclimatic conditions, the proximity to the Johannesburg and Pretoria markets, and historically acquired advantages as far as securing resources and public support of all kinds are concerned. These are large farms (70–350 ha under irrigation), calling upon a large permanent and temporary workforce, equipped with high-performance packing stations and trucks to sell part of the production under contract to urban supermarkets, or large volumes at the wholesale market (PS6, Figure 9.11; PS7, Figure 9.12). Although farm capital is most often family-based and the owners actually manage the operations, these are large, mainly 'capitalistic' farms. Smaller farms (10–20 ha) also produce vegetables in the irrigated area, but have less high-performance equipment and do not have packing stations. They produce mainly for the wholesale market and local hawkers.

It seems that, despite lands being restituted to black communities in the irrigated area, none of the beneficiaries of the land restitution process has managed to implement either of these production systems, for lack of means. None of the well-equipped farms specialised in market-oriented horticultural production was successfully taken over by black farmers within the framework of the land restitution process. Yet these farms create jobs (around 1 labourer/ha on average) as well as value added (the equivalent of R80 000–R120 000/ha), allowing room to hope that the land and agrarian reform process can lead to a better sharing of the sector's wealth creation.

While they are unable to establish labour- and capital-intensive vegetable-growing systems, owing to lack of capital, the few who have benefited from the reform process and who are actually exploiting the land allocated to them, instead practise a production system based on the cultivation of wheat and soya. This requires much less seed money and a large part of the work is subcontracted to agricultural entrepreneurs, such as the former MGK cooperative (subsequently privatised) (PS5, Figure 9.10). As such, the number of jobs created or protected per hectare is low (1 labourer/10 ha maximum, particularly for manual irrigation), and the value added created ten times less (R7 200–R9 600, the equivalent of €600–€800/ha).

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The same applies to the rain-fed land of the black communities, most of which is stony or sandy grazing lands for cattle, on a granite substratum, unsuitable for cultivation and devoid of irrigation infrastructure. However, part of these lands in the south are made up of black soils (on gabbro-type substratum) offering good cultivating capacities. These lands were formerly cultivated with animal traction by members of the Bakwena Ba Mogopa community, as was a large portion of the current irrigated area before the black populations were chased away at the beginning of the 1920s.

At the time of the nominal independence of the bantustan of Bophuthatswana (1977), a project for the agricultural development of these lands was promoted by the black authorities of the bantustan. The idea was to promote a 'modern' farming model: motomechanised, specialised (i.e., with a strict separation of the cultivation and breeding activities) and relying on a mainly salaried workforce (Chapter 1). Today, the production system promoted on the black rain-fed lands of Bethanie draws inspiration from this very model. Plots in multiples of 100 ha have been allocated to twenty-eight producers, intended for cultivating an area of around 3 700 ha of sunflowers (PS4, Figure 9.9). This model is unilateral and simplified: extensive monoculture of sunflowers (minimum inputs; no fertilisation or pesticides), producing very low yields (0.6–1.2 tons/ha only, or even less). Furthermore, while a few farmers have the necessary equipment, which is already fairly old, TEMO – with which all these producers are under contract – is called upon to cultivate such areas. TEMO, a subsidiary of MGK created at the beginning of the 2000s with a view to proposing agricultural services to the farmers of the former bantustan, carries out most works, and sometimes even the entire crop management sequence, including transporting and marketing the crops. Only the weeding and removal of stones from the land remains the responsibility of the farmer who, to this end, hires day labourers, the equivalent of 0.6 labourers for 100 ha maximum.

The specific terms and conditions of this formalisation by contract tell us a good deal about the situation of 'beneficiary' farmers. In exchange for being committed to delivering the entire harvest to TEMO, the farmers benefiting from seasonal credit must: buy inputs from Obaro (a subsidiary of MGK); insure their harvest with Statusfin (a subsidiary of MGK); call on TEMO-accredited entrepreneurs whose service fees are negotiated by TEMO; and entrust the transport, storage and sale of the harvest to Prodsure (a subsidiary of MGK). In the case of loss or damage to the crop, the farmer has to indemnify TEMO and the other subsidiaries of MGK. 'The producer indemnifies TEMO and Statusfin and all its divisions and subsidiaries from any liability which may arise from any advice, act or negligence of any employee of TEMO and MGK and all its divisions and subsidiaries which might result in loss or damage to the Producer' (TEMO 2013). If the crop yield is less than the costs advanced by the credit, the farmers undertake to cultivate their land for TEMO until they have reimbursed their debts. In this way, TEMO effectively takes over the land for as long as the debt remains.

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Furthermore, farmers must regularly put in a token appearance, particularly during the training sessions organised by TEMO, and undertake to follow the advice of their (white) 'mentor' who is remunerated by TEMO to 'pass down his knowledge'. The contract specifies that:

> If the producer fails to carry out any material instruction from a mentor or if a producer is absent for a period longer than 48 hours from his property on which the harvest has been established or if the producer for whatsoever reason is not able to proceed with his farming for whatsoever period, TEMO will be entitled to take possession and control of the harvest. (TEMO 2013)

This case of formalisation by contract illustrates the limits of contractual terms and conditions concerning the empowerment of historically disadvantaged farmers (see Chapter 12).

Notes

1 'The producer undertakes to follow throughout the finest details the advice which the mentor provides' (TEMO 2013).

2 GlobalGap stands for Global Good Agricultural Practice and is an agricultural certification concerning quality, hygiene and input standards. This certification is required when selling vegetables to certain supermarkets and when exporting them to Europe.

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10 *Persistent and extreme polarisation: Wide productivity and income gaps*

Hubert Cochet

White agriculture: Partial motorisation and concentration

The development of white agriculture in South Africa is in some ways comparable to that of the European colonies of the 19th and 20th centuries. In the northern United States and Canada, Australia and South America's Southern Cone, 19th-century agriculture was characterised by what was considered free access to large swathes of land and mixed production systems with animal traction. The mid-20th century (and even earlier in some regions) marked the beginning of the agricultural revolution based on motorisation, the use of pesticides and fertilisers, and specialisation of production processes (Mazoyer & Roudart 2006).

But in South Africa, the development process gradually drifted away from this general movement. In the northern half of the United States and in Canada, Australia and some areas of the Southern Cone, local labour was scarce, and colonist farmers shifted overwhelmingly to mechanised animal traction early on. The first machines (powered by steam, then gasoline) appeared in the late 19th century: threshers, mills, the first tractors and even traction engines. In South Africa, however, local populations were barred from access to resources, particularly during the land grabbing legalised by the 1913 Native Land Act. As a result, the agricultural development of white farms went down a different path, determined more by the availability of abundant and cheap labour than by investment and a quest for productivity gains.[1]

Partial motorisation and productivity gains

Although white farmers in South Africa received generous subsidies to do so, motorisation was belated and partial, owing to many tasks being kept manual, thanks to low labour costs. In regions where irrigation developed, water pumping was the first task to be motorised, at first using diesel pumps, some of which were imported from England in the early 20th century. With the advent of electrification, electric pumps became widespread during the 1970s. Flat irrigation had been done manually and required a large workforce, before the technique was replaced by sprinkler systems. The motorisation of a number of other jobs came later.

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For example, in the Riet Valley's irrigated grain-growing region between Douglas and Jacobsdal (south of Kimberley; see Chapter 8), the production systems set up just after World War II and during the 1950s were still based on animal traction (oxen or mules). Only in the 1970s did farmers start buying their first tractors, as sprinkler irrigation began to develop in parallel (Arrazat & Périnelle 2012; see Chapter 8). Today, commercial farms make much use of equipment. You will see farms of a hundred or more hectares, for example, that specialise in rotating maize and winter grain crops (two cycles per year) using centre pivot irrigation. Annual cereal production (all grains together) is about 2 000 metric tons (mt), or about 400 mt/worker, with the farm manager working alongside four permanent employees. Labour productivity ranges from R200 000–R300 000/worker/year (the equivalent of €16 000–€24 000). This is relatively high, of course, but smaller family farms specialising in irrigated maize crops in south-western France, for example, achieve much higher productivity, with 50–80 ha of irrigated maize and a single cycle per year. Labour productivity there is roughly €25 000–€35 000/year (about R300 000–R420 000).[2]

The alluvial terraces of the Kat River (bordering on the former Ciskei), which are the only areas in this region conducive to farming and with irrigating potential, were developed along a similar timeline. The white farmers who controlled this land built the first irrigation furrows and started growing grain crops and alfalfa (to feed cattle herds raised on the surrounding savannahs), followed by the first citrus groves in the early 1900s. These plots were cultivated with draught animals until the early 1970s (Quinquet de Monjour & Busnel 2012; see Chapter 6).

In Natal's sugar cane region, as elsewhere in the world, the first steam mills were built in the late 19th century. Sugar cane transport in the fields was mechanised early on by means of mobile rail systems and oxen-drawn wagons. This was because of a shortage of labour and the necessity to assure provision of cane to the mills. Transport from field to mill was motorised (railroad and traction engines). Throughout the 20th century, capital was gradually concentrated in the hands of a small number of families, leading to larger and larger factories being built. However, as populations from neighbouring missions and, especially, seasonal migrant workers from the Transkei were available on demand, the field crop production process was slower to change. White growers started to acquire tractors for tilling and carrying and loading sugar cane in the field (self-loading trailers). In the hills along the coastline, though, all of these tasks remained mostly manual with animal traction throughout the 1970s, because the steeper slopes were less conducive to motorisation (Bièque & Kippeurt 2012; see Chapter 7). Productivity did rise as the use of mobile loaders (in particular the Bell cane loader) became more widespread, enabling fast, direct loading of sugar cane in bulk at the plot or in loading areas, but all other tasks (planting, treatments and harvesting) remain manual, even today. The result is comparatively low labour productivity, compounded by the region's relatively adverse physical conditions – rugged terrain and poor sandy soils. Even

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on better-equipped farms, sugar cane production per worker is only about 220 mt/worker, or 335 mt/worker, excluding cutting (Bièque & Kippeurt 2012). This is relatively low compared to production levels in other sugar cane-producing regions around the world. It is about as much as that of small Reunionese producers, who are able to produce about 250 mt of sugar cane per worker per year (Pinson 2008). In the sugar cane-producing Autlán Valley in Mexico, cane production is an estimated 800 mt/worker on plantations of around 100 ha where cutting is exclusively manual (Legendre 2012). This relatively low per-worker production keeps the labour productivity of the Sezela's large sugar plantations at about R30 000–R60 000/worker/year (€2 500–€5 000). If wages had not been kept so low for so long, it is not at all certain that sugar cane production would have continued in this South African region, where there are no real comparative advantages to growing this crop.

Larger farms in fewer hands

The gradual restructuring of white agriculture in South Africa, which further concentrated farmland in the hands of a few, was in many ways similar to what occurred in Western Europe. The number of South African farms increased during the first half of the 20th century. This was due to properties being divided up as they were passed on to the next generations, as well as the policy of handing seized land over to new farmers (for example, demobilised soldiers) as irrigation practices spread to new areas. The then government, aiming at controlling and limiting this land subdivision trend, implemented the Subdivision of Agricultural Land Act (No. 70 of 1970). The number of farms started to decrease in the early 1950s as farms became larger and motorised, and land was increasingly concentrated in the hands of fewer people. As seen in Chapter 2, the number of white farms dropped from 120 000 in 1950 to 60 000 in the early 1980s. Today, there are fewer than 40 000.

Residual black agriculture

The low productivity of subsistence peasant farming

The residual agricultural activities of African smallholders are limited to gardening and livestock rearing on the commons managed by tribal authorities.

Anjuère and Boche (Chapter 4) have created an incisive typology of smallholdings for the villages in the former Gazankulu bantustan (now Limpopo province), identifying a number of different production systems. Most are manual and based on food crops – maize, beans and squash, along with a few leafy vegetables (mainly spinach) – grown on small plots of 500–2 000 m^2 with capacities for only small maize harvests (60–240 kg), at best enough to feed a family for three months (Anjuère & Boche 2009). In addition, each family raises some poultry. These production systems have no access to irrigation, so their value added is minimal, only about R1 000–R1 500/worker/year. Some households have regular access to water because they have

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a well. They are able to irrigate their entire garden and thereby diversify the range of vegetables they produce for consumption and for local markets (80 per cent of production is sold). This slightly increases the labour productivity to R2 500–3 000/worker/year. Households that have a field of several hectares on communal land are able to cover the family's needs in maize and can also raise a small herd of cows. In these cases, labour productivity climbs to R5 000/year (equivalent to €400).

In their study of smallholdings in the former Ciskei bantustan, where farmers live off very small vegetable gardens and some livestock farming, Quinquet de Monjour and Busnel found vegetable gardens even smaller than those in the Limpopo province (Chapter 6). This is mostly attributable to the much drier climate and to the fact that nothing is really possible without minimum access to irrigation. The gardens are often as small as 60–150 m^2, watered with a watering can filled at the communal tap. Although this type of gardening/horticultural production can be highly productive per unit of surface area, the annual value added for these micro-gardens is insignificant, typically under R1 000. The poultry and pig operations are also tiny, producing a maximum value added of R1 000–R2 000/year. The small herds of goats or cattle pastured on community land can only bring in an additional R4 000–R8 000 for some households (Quinquet de Monjour & Busnel 2012). The labour productivity for these production systems is in general no more than a few thousand rand and, for the better-off households, R10 000 to R15 000.

Research carried out in the 1990s by Saqalli (1998) at Twecu (a village also located in the former Ciskei bantustan, in the Amathole District) turned up slightly higher results. Agricultural activities still included some open-field plots and apparently more extensive livestock rearing than in the region studied by Quinquet de Monjour and Busnel in 2012. While the value added of these activities was also only a few thousand rand per worker per year for most families that still practised mixed farming, some farms had much higher productivity, especially when they had a larger cattle herd (around fifty head). In these cases, labour productivity rose to R25 000–R32 000/worker/year, in equivalent 2012 rands.

In Hélène Regourd's analysis (Chapter 5) of the small irrigated area of New Forest (Mpumalanga), where families each have one hectare of irrigated land, productivity levels for food and market crops are about R12 000/worker/year when there is an abundant flow of water upstream and thus the possibility of two crop cycles per year. This drops to about R9 000/worker/year when farmers are situated downstream and access to water becomes more uncertain. Labour productivity rises to approximately R15 000/worker/year when livestock rearing is possible on communal land.

It is clear that on smallholdings on the infertile lands of the former bantustans, with no access to even the most basic production means, labour productivity remains very low: the equivalent of a few hundred euros per worker per year, and at most €1 000–€2 000 (R12 000–R24 000).

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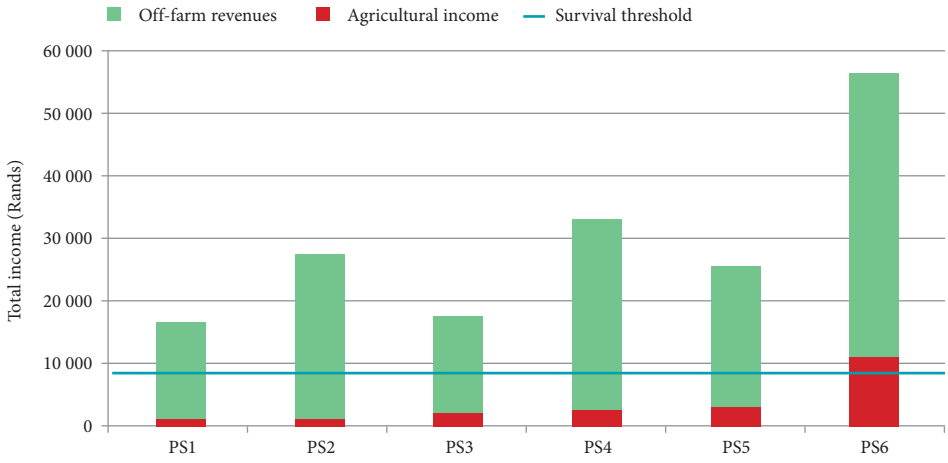
The share of agriculture in the income of smallholders in the former bantustans

The low earning power of agricultural activities leads rural households in the former homelands to seek other sources of income. As the examples below show, agricultural income represents only a small share of rural family income.

Anjuère and Boche (Chapter 4) show that the income from these production systems is at most several thousand rands per worker per year, not nearly enough to cover family needs (Figure 10.1).

The survival threshold in Figure 10.1 was calculated based on the basic fixed expenses for an 'average' household of five (two adults and three children, including two enrolled in local school), estimated at R8 500 (in 2009). These expenses included food (maize, vegetables and firewood for cooking, or R5 200); 'funeral insurance', a contribution of R80/month to the village to cover the expense of a funeral, which is far too high for families to assume alone; school expenses (school fees and uniform); and other exceptional but unavoidable expenses linked to religious holidays like Christmas and Easter (R400). Transportation expenses and clothing purchases were not included (Anjuère & Boche 2009). This threshold is similar to those found in other works. In 1998, Saqalli estimated the minimum needs for a family in the former Ciskei at R8 480 (including transportation and clothing expenses), or the equivalent of R18 600 in 2012 (Anjuère & Boche 2009). Even though the threshold is very low, very few households are able to cover these expenses through agricultural activities alone. Anjuère and Boche (2009: 102) reached this conclusion:

Figure 10.1 Share of agricultural and non-agricultural income in the total income of six types of rural families in Mandlakhazi and Nwadjaheni



Source: Anjuère & Boche (2009: 63)

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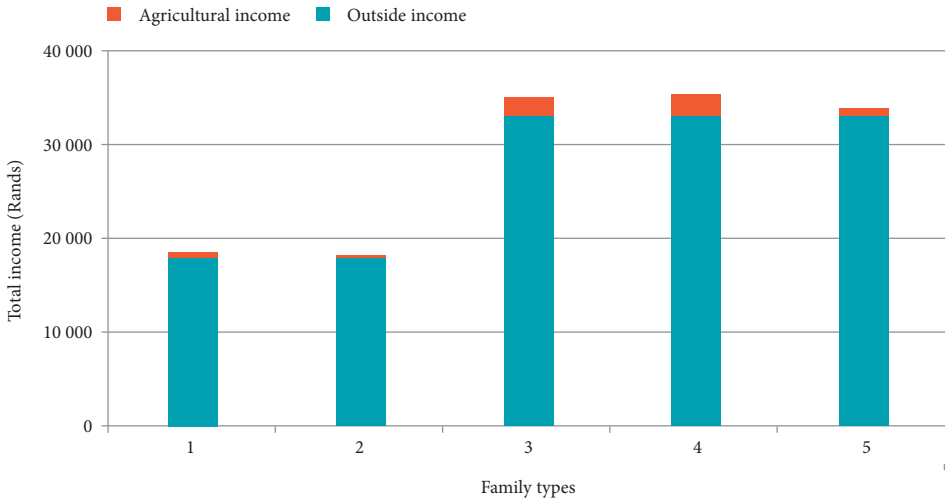
> Households that had food production systems categorised PS1 to PS5 with limited access to property can devote no more than 40 man-days/year to farming, compared to 174 man-days/year for the production system PS6. These households cannot generate enough value added per worker to cover their basic food needs year round.

Quinquet de Monjour and Busnel in their research in the former Ciskei (Chapter 6) found that in the five main systems identified, the share of agricultural income out of total household income (including other employment and social welfare) is extremely small (Figure 10.2).

Studies carried out in other regions found similar results. Except for livestock farming on communal land and irrigated gardening, agriculture no longer feeds farming households.

Figures 10.1 and 10.2 also show that in all regions studied, agricultural income increases along with outside income. In many other regions of the world, the opposite is often observed: outside income compensates for insufficient agricultural income. The situation in South Africa is unusual: the fact that households have been – and still are – entirely deprived of access to productive resources, capital and credit means that only an outside resource such as savings from a retirement pension and/or an outside salary or small trade activity can help the start-up of a fledgling agricultural activity that can generate its own income. Paradoxically, the poorest households have little hope of starting anything up, owing to lack of means.

Figure 10.2 Share of agricultural income out of total household income for five family types studied in the former bantustan of Ciskei



Source: Quinquet de Monjour & Busnel (2012: 80)

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This catastrophic situation is fraught with consequences at a time when the primary function of agrarian reform should be precisely to create jobs and income in rural areas.

While agriculture is feeding hardly anyone in the former homelands any more, the state's old age pensions and child support grants are helping to do so. A striking observation today is that the level of these pensions is very close to the estimated survival threshold mentioned earlier. In 2012, the old age pension was set at R1 200/month, amounting to R14 400/year in income for pensioners. The survival threshold calculated by Anjuère and Boche in 2009 (R8 500) is equivalent in purchasing power to R10 000 in 2012. All in all, the pensions keep people from starving, but agriculture does not. Pensions also help indirectly to keep agricultural salaries at a very low level, as will be seen later in this chapter.

Wide productivity gaps

Although low labour costs have not always prompted white farmers to invest in productivity increases at the same pace as farmers in Western Europe or other former European colonies, productivity gaps between these holdings and the remnants of black agriculture are huge. In all regions studied for this book, white farms have productivity levels that are 100 to 300 times higher than those on black farms.

In the commercial farms on the Kat River alluvial terraces, where irrigated citrus groves are cultivated, labour productivity is about R120 000/worker/year (€10 000) (Quinquet de Monjour & Busnel 2012; Chapter 6). On banana plantations in the Hazyview region (Mpumalanga), labour productivity is R100 000/worker/year (€8 500), and about R110 000 on mixed banana/macadamia nut plantations. On plantations where banana trees were ravaged by Panama disease and replaced by avocado trees, productivity is around R70 000–R100 000/worker/year (€6 000–€8 500) (Regourd 2012; Chapter 5).

For the irrigated areas in the Orange River Valley (including tributaries), the irrigated area around Jacobsdal provides examples of well-equipped, 100-hectare farms cultivating genetically modified maize and winter cereals in yearly rotation using centre pivot irrigation, where labour productivity ranges around R200 000–R300 000/worker/year (€16 000–€24 000) (see below). Other farms of comparable size devote part of their surface area to alfalfa production, reserving part of the production for fattening cattle: here, labour productivity is about R150 000/worker/year (€13 000). Still others have developed dairy production (100–120 milk cows for 5 500 *l*/year), reserving fifty or so irrigated hectares to provide supply forage (mainly maize and alfalfa). On these farms, labour productivity is only R90 000–R100 000/worker/year (about €8 000) (Arrazat & Périnelle 2012; Chapter 8).

In the Brits area (on irrigated land not far from Hartbeespoort Dam), large-scale, mechanised farms specialise in commercial vegetables, an activity for which the

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region has comparative advantages due to the soil and climate conditions and proximity to the big Johannesburg and Pretoria markets. These farms have 70–300 irrigated hectares and require a large full-time and temporary labour force. They are equipped with efficient preparation/packaging facilities and trucks, enabling them to sell part of their production on contract to city supermarkets, or larger volumes to the wholesale market. Their labour productivity is comparable to those already shown for other production systems, at R140 000–R150 000/worker year (about €12 000–€13 000) (Rémy & Clerc 2011; Chapter 9).

In the sugar cane-producing regions like Sezela, the labour productivity for the large-scale sugar plantations is, as noted, R30 000–R60 000/worker/year (€2 500–€5 000) (Bièque & Kippeurt 2012; Chapter 7). This is much lower than the production systems studied in the other regions.

Farms that specialise in free-range animal production on the savannahs adjoining the irrigated areas have similar productivity levels (€10 000–€20 000/worker or R120 000–R240 000), and even much higher, especially in some of the large-scale game farms where the only work is to maintain fences, since animal removal is subcontracted out to companies that charter helicopters. Given the few workers it takes to run this type of enterprise, it is easy to see that the labour productivity can be very high, as much as R370 000/worker/year (in excess of €30 000), as calculated by Arrazat and Périnelle (2012; Chapter 8).

These gaps in overall labour productivity between commercial farms and residual black agriculture – of one to a hundred or more – may be significant, but pale in comparison to the even larger differences in income. The productivity of workers hired on commercial farms held by white people translates into much more than what they are paid. The income from these holdings can be very high when compared with the low number of family members working in the enterprise. The differences in income between these farms and the smallholdings still practising agriculture in the former homelands are mind-boggling. But first, we need to tackle the issue of wages and the cost of labour on these agricultural farms.

Government support for white agriculture in the form of low labour costs

Government subsidies for white agriculture

White farms benefited from massive government support throughout the 20th century, and this support was considerably reinforced as early as the 1929 world economic crisis, mainly through protectionist price support measures (Wilson 1971). All the 'standard' support tools were then mobilised, including equipment subsidies and easy credit, price stabilisation (through the Marketing Act of 1937), input subsidies and supply through cooperatives, guaranteed product distribution,

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and public investment in irrigation infrastructure. There was nothing particularly original in these measures, as a number of countries were implementing similar tools at that time, in particular in Western Europe and North America. On the other hand, the combination of heavily supported agriculture and the marginalisation of black-owned agricultural holdings was unique. This was combined and related to cheap labour, with employment costs sometimes reduced to almost nothing by the penitentiary system's practice of providing prisoners who were kept in prisons built on farm property (Wilson 1971). Another aspect of these government forms of aid to 'commercial' agriculture through artificially low labour costs is social welfare – in particular old age pensions – which the public authorities started to distribute in the 1940s.

While the extent and inherent unfairness of past government aid to white agricultural holdings was emphasised after the 1994 regime change, it was also highlighted to rally public opinion around the decision to get rid of all government support, given the agenda of massive withdrawal of public funding.

In spite of this deregulation process, white agriculture remained heavily supported by public authorities, regardless of white farmers' claims that aid now only goes to emerging farmers. Public support for white agriculture involves permitting access to property that is as extensive as ever, barely questioned by the agrarian reform process, and almost exempt from property taxes. It also involves access to irrigation that is still just as advantageous, despite the gradual application of water legislation and the creation of water user associations. Irrigation water is still practically free for (mainly white) irrigators, and sometimes with unlimited use. Finally, measures to provide support to emerging black farmers have sometimes taken the form of disguised subsidies to agricultural service providers, former cooperatives that supply inputs and marketing (now privatised), and the agro-industrial sector as a whole, which is controlled mostly by white people (Chapters 11 and 12).

In addition to these advantages still accruing to these farmers, the cost of labour is kept very low, much lower than in the industrial and mining sectors, constituting the strongest support of all.

Pensions and their role

The old age grant system established for white people in 1928 was extended to the black population in 1944 (Pelham 2007). The official purpose of the system was to combat poverty, but the measure was also promoted owing to economic imperatives, as it made it possible to reduce real wages in the mines during a time when mining profits were down (Sagner 2000). Pensions also served to settle poor black segments of the population in resettled villages, by keeping the grandparents and younger children there, too. Furthermore, by helping to feed children and the elderly (i.e., the non-working people), it served as an indirect wage. This made it possible to reduce

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industrial wages and agricultural wages on white-owned farms by as much, thus constituting a sort of indirect subsidy.

That role formerly fell to the small plot of land that workers on large white-owned farms were able to obtain from their employer as part of the exchange of various services paid for in work, money or as a share of the harvest. This type of payment in work, money or some form of share farming is also how the Latin American *hacienda* minimised the costs of reproducing their labour force while ensuring control and submission. It is why white farmers fought so long against the outlawing in 1913 and 1936 of these types of land tenure (Chapter 1).

By helping the populations in the homelands survive, the pensions also helped segregate black and white people, and perhaps postpone social unrest. The pension policy catered to the clientelism that underpinned the power of tribal authorities in the bantustans, through whose hands the pension money passed.

The purchasing power thus distributed guaranteed an outlet for the maize produced on the country's large-scale white farms. Boosted by strong governmental support, maize production rapidly exceeded the domestic market's absorption capacity (Wilson 1971), itself constrained by the weak purchasing power of black populations. Selling the surplus grain abroad was problematic because of the high domestic price of maize and, subsequently, was made difficult by the international isolation of South Africa. It is likely that the old age grant enabled the expansion of the domestic market to a certain extent, at least for basic food products, and that without these pensions the market would have been considerably constrained by the increasing pauperisation of black populations.

The state's old age pension and the child support grant, the latter introduced in 2002, still enable the elderly and children to live in better conditions than in many other African rural regions. It would appear these government transfers give access to greater purchasing power than what current agricultural labour productivity allows.

Have labour costs increased much since 1994?

The recent increase in labour costs and its consequences on labour-intensive farming operations has become an important element of discussion.

Already in the 1970s, the modest wage increase no doubt helped stimulate the acquisition of more efficient equipment, thereby increasing labour productivity, particularly in the crop systems on the central plateaus. At the time, there was a push towards production systems that were less dependent on black labour: 'White agriculture must … gradually be made less dependent on non-white labour and eventually be released from the need of it as far as possible' (Simbi & Aliber 2000: 27).[3] Authorities encouraged investment (by giving negative real interest rates) and large-scale production units (Subdivision of Agricultural Land Act, 1970).

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Since the 1994 regime change, the Agri SA Agricultural Employers' Association, which represents the interests of this type of farm, has been singling out the increase in labour costs (curtailing of daily work hours, wage increases, measures to prohibit the arbitrary eviction of live-in employees, and mandatory minimum wage) as a major element in the increase in production costs (Simbi & Aliber 2000).[4] But is it really?

It is not easy to reconstruct the curve for the real wages of agricultural workers. Simbi and Aliber (2000) have shown that there can be a considerable difference in what employers declare and what workers declare, especially during the years following the regime change. They conclude that for the 1988–1998 decade, there was no significant increase in the cost of labour and that the share of that cost in overall production costs, about 15 per cent, did not significantly increase.[5]

In 2012, the minimum wage was R57/day, which amounts to about R1 500/month (for 50 hours a week). In constant rands, this is not higher than the average agricultural wage measured by Statistics South Africa (Stats SA) for 1996, at R1 552/month.[6]

Is this minimum wage applied by all employers? Interviews conducted in the different regions studied in this book raise doubts. On the banana plantations of Kiepersol (Hazyview area in Mpumalanga), workers were paid a monthly salary of only R1 200 in 2012 (Regourd 2012). Permanent workers on Kat Valley citrus farms in the Eastern Cape earned R1 300–R1 400/month (Quinquet de Monjour & Busnel 2012).

In the large field-scale, market-oriented horticultural production farms in the Brits area, a large workforce of labourers is hired on a daily basis and year round, largely from the pool of immigrants from Zimbabwe and Mozambique who are willing to accept even lower wages and worse working conditions than their South African counterparts. The pay per day was R60 in 2011, although the few tractor drivers earned R65–R70/day (Rémy & Clerc 2011). Workers were housed in minimal conditions, often in former tobacco drying barns, without running water or electricity (Rémy & Clerc 2011). In Jacobsdal, tractor drivers were a little better paid, earning R1 800/month in 2012, plus a R2 000 end-of-year bonus (Arrazat & Périnelle 2012).

Furthermore, several accounts showed that the increase in cash wages was partly to compensate workers for the cutback in non-cash benefits such as housing, food and travel expenses. According to one farmer in the Hazyview area, 'Before, we helped out workers with medicine, paid for transportation and distributed food. That is no longer being done since the minimum wage was introduced' (Regourd's survey).[7] For workers in this region, 18–20 per cent of their daily earnings are now spent on transportation.

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The 2012 strikes by agricultural workers in the Western Cape province resulted in a substantial improvement of the minimum guaranteed farm wage. On 4 February 2013, the minister of Agriculture announced a 52 per cent wage increase to R105/day. If the raise is actually applied, conditions for farm workers will be better. Representatives of the commercial farmer unions, in particular Agri SA, reacted negatively to the announcement, of course, once again contending that higher labour costs would have a negative impact on farm profitability, with a longer-term impact on employment (Furri 2013). However, a detailed analysis of the production processes and economic performance of commercial farms carried out in the six regions studied in this book offers some perspective on the actual impact of higher wages on these holdings. In fact, labour costs continue to have such a small role in the distribution of value added that there is plenty of room for a wage increase without risk of affecting the profitability of commercial farms.

A distribution of value added that favours capital over labour

What effects did the post-1994 economic liberalisation have on commercial farming? Despite the shift of government support towards 'historically disadvantaged' sectors, the research conducted for this book suggests that these changes did not actually threaten the commercial profitability of these farms. In all of the regions studied, the economic performance of white-owned farms operating with mostly black wage labour is particularly strong, enabling these families to maintain a very high standard of living, not only compared to the cost of living in South Africa, but also by international standards (see below).

Besides the inherent efficiency of some of these production systems in terms of value added creation, the main reasons for these high income levels are the very low wages – well below labour productivity – and a distribution of the value added that gives capital and the farm owner more than their due.

The following examples show the distribution of value added for a small number of specific situations and the resulting imbalance between how labour is remunerated and how capital is remunerated.

Irrigated, mechanised grain farming

In the irrigated area around Jacobsdal (Free State) discussed earlier, the productivity rise due to farmers' acquisition of powerful equipment has had a significantly negative effect on employment. On irrigated grain farms, manual jobs have practically disappeared and only a small number of salaried workers remain, usually as farm machine operators. Only about 9 per cent of the net value added is allocated to worker wages, with 80 per cent going to the entrepreneur's salary and returns on family capital invested in the business (Figure 10.3).

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Figure 10.3 Distribution of net value added on irrigated farms in the Jacobsdal area

Note: On the left, large-scale irrigated cultivation; on the right, large-scale irrigated cultivation and ranching activities
Source: Arrazat & Périnelle (2012)

Each salaried worker can produce more than R240 000 in value added in a year, but his or her salary, including bonus and non-cash benefits, adds up to only R23 000, or less than a tenth of the value added produced.

On farms in the same region that practise mixed farming with irrigated cereal crops combined with sheep and cattle production on surrounding grazing areas, the share of wages and salaries in the value added is even lower, at about 7 per cent (Figure 10.3). On neighbouring game farms, the share drops to 5 per cent, where the value added per worker is as high as R375 000, while the salaries paid do not exceed R24 000/year (Arrazat & Périnelle 2012) – fifteen times lower than the labour productivity.

On sugar cane plantations in KwaZulu-Natal

Because the sugar cane sector depends even more on manual labour and the labour productivity is lower, the share of value added going to salaries is significantly higher, as illustrated in Figure 10.4. The first case involves large-scale corporate plantations, where the capital is held by heirs of powerful families of English descent that settled in the region in the late 19th century. Here, the salary/productivity gap is much less marked (about 1:2) and half of the value added produced goes to employees. The second case involves family business plantations, where the owner is actively present and controls the production process. The average labour productivity is higher, so that the share of wages and salaries in the distribution of value added drops to 37 per cent.

Irrigated arboriculture

As with the sugar cane sector, fruit-tree farming (along with market-oriented horticultural production) is still a fairly labour-intensive sector, so one might expect

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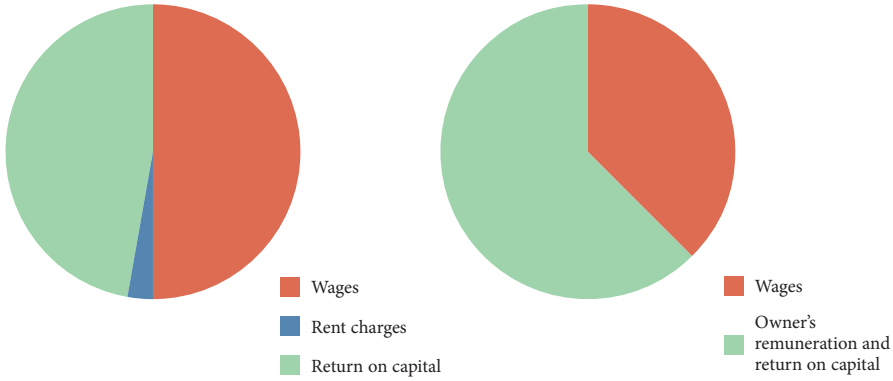
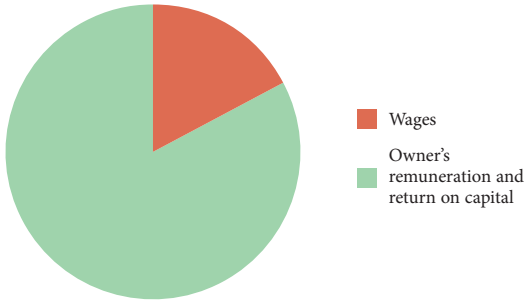
Figure 10.4 Distribution of value added for sugar cane plantations in the Sezela area, KwaZulu-Natal



Note: Left, commercial plantations; right, family-owned plantations
Source: Bièque & Kippeurt (2012)

that wages and salaries account for an equally sizeable share of value added. But is this so? At Kiepersol (Mbombela Municipality, Mpumalanga province), for example, a closer look (Figure 10.5) at the irrigated banana plantations mentioned earlier shows that only 17 per cent of value added goes to wages and salaries, even though the production process is still largely based on manual labour (about one worker/hectare). Compare this to the comparably sized Ecuadorian plantations that produce bananas for export using similar production processes and that are based almost exclusively on manual labour: more than half of value added goes to wages and salaries (Cepeda & Cochet 2012), three times more than in South Africa.

Figure 10.5 Irrigated banana plantations in the Hazyview area: Main economic indicators and distribution of value added



Source: Regourd (2012)

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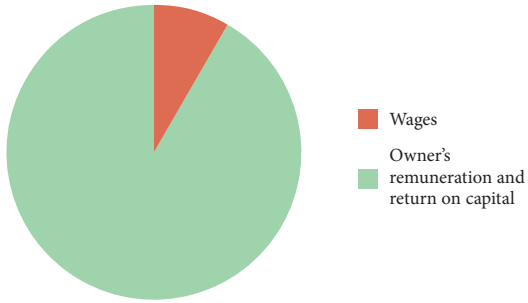
In the same region, Regourd observed what appears to be a trend among banana plantations, which are making a gradual shift to macadamia (Queensland nut) trees in the context of a booming international market for macadamia nuts, notably in China. South African plantations apparently have an edge on Australian plantations, in particular because of their very low labour costs. The shift also reflects the desire of plantation owners to further reduce payroll costs (1 worker/3 ha), and even more the share of value added that goes to wages and salaries, as shown in Figure 10.6. The manager's salary and return on capital together account for 92 per cent of value added, with only 8 per cent going to the plantation's permanent worker salaries and temporary worker wages.

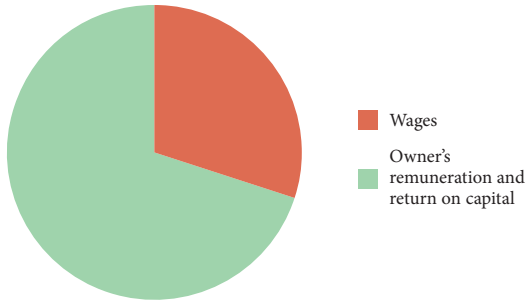
On the large, family-business citrus farms in the Kat Valley (Eastern Cape), which employ from ten to thirty agricultural workers along with dozens of seasonal workers for the harvest, the value added distribution reserves 30 per cent for the labour force (Figure 10.7), with the remainder going to the manager's salary and return on capital invested in the farm (Quinquet de Monjour & Busnel 2012; Chapter 6).

Figure 10.6 Value added distribution for irrigated macadamia nut plantations



Source: Regourd (2012)

Figure 10.7 Citrus fruit farms in the Kat Valley



Source: Quinquet de Monjour & Busnel (2012)

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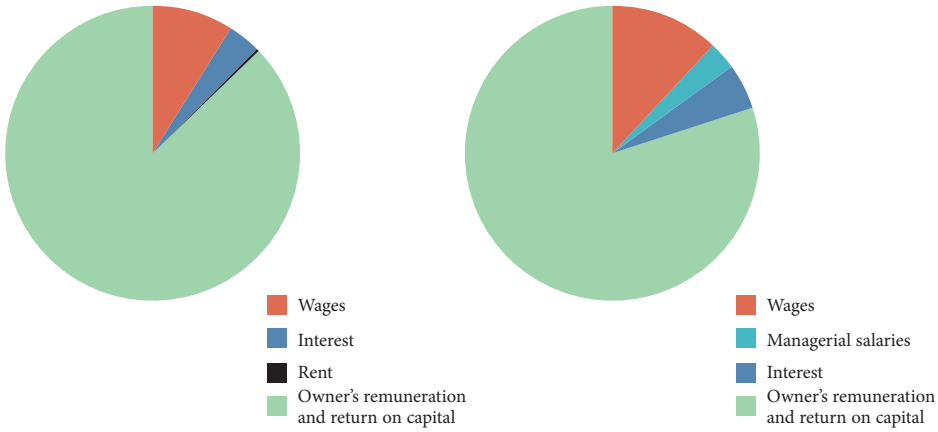
Example of field-scale fruit and vegetable production

In the Brits area north-west of Pretoria, large holdings (70–150 irrigated hectares) specialise in field-scale fruit and vegetable production, selling their produce under contract to supermarket chains in the Johannesburg–Pretoria metropolitan area. These farms employ from thirty-five to seventy-five permanent workers who are aided by twenty to forty-five temporary workers during the harvest season (Rémy & Clerc 2011; Chapter 9). Here again, one might expect that a significant share of value added would be devoted to remuneration. This is not the case, however, as shown by the left graphic in Figure 10.8: only 8.9 per cent of net value added goes to wages and salaries, while 87.6 per cent goes to pay the manager's salary and return on capital. The situation is similar for large-scale commercial farms (200–350 irrigated hectares) that produce vegetables for the wholesale market (right graphic).

Here, labour productivity is roughly R140 000–R150 000/worker/year, while worker remuneration ranges from R20 000–R22 000/year, or seven times lower.

In systems that hire many seasonal or day workers, it is interesting to compare the value added per day of work (daily productivity) to the daily wage. Figure 10.9 gives the example of fourteen different production systems in the Hazyview area, studied in detail by Regourd (2012; Chapter 5). The daily productivity ranges from R50 for PS7B (one hectare of market-oriented gardening/horticultural production during the rainy season with a single crop per year) to R650 for PS5 (irrigated macadamia nut plantation), or a ratio of 1:13. In the labour-intensive production systems in the New Forest irrigated area (former KaNgwane bantustan), the value added per

Figure 10.8 Value added distribution for large-scale market-oriented horticultural farms in the Brits area



Note: Left, contract to supermarket chains; right, corporate farms selling to wholesale market
Source: Rémy & Clerc (2011)

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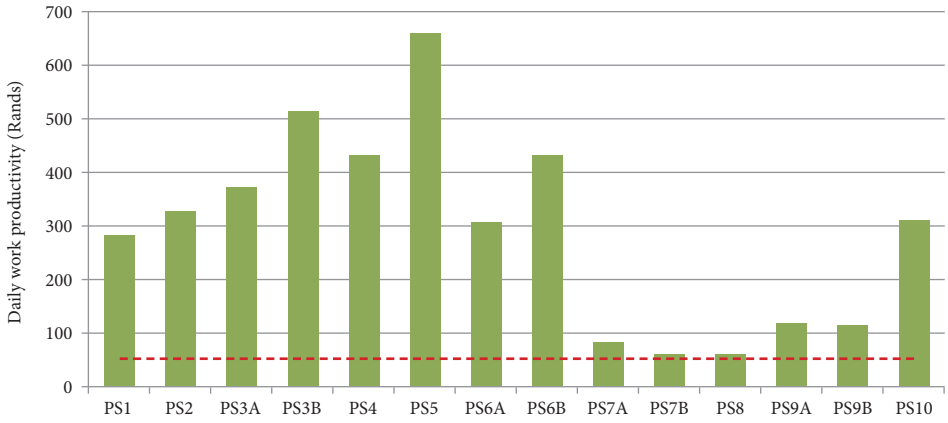
Figure 10.9 Daily work productivity for production systems studied in the Hazyview region, Mpumalanga



Note: Dashed line = minimum wage
Source: Regourd (2012: 103)

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day of work is very low, even lower than the minimum daily wage (R57). On the other hand, for most of the other production systems shown in Figure 10.9, daily work productivity is much higher than the wages, which are sometimes completely unrelated to the work's value added. In some production systems, the 'return' on an employee's day of work, whether that employee is permanent, seasonal or daily, is twelve times higher than what he or she costs the employer.

This distribution, which is increasingly disadvantageous to labour, is not only the result of an increase in capital mobilised in the productive process and an increase in labour productivity; it is also the result of a process of disconnection between salaries and productivity.

Irrespective of the high level of daily labour productivity in the best-equipped production systems, labour remuneration remains comparable with the very low level of labour productivity obtained in the immense majority of small agricultural production units of the region, which are underequipped and deprived of land and irrigation water.

Recent changes have not compromised the financial efficiency of white-owned holdings

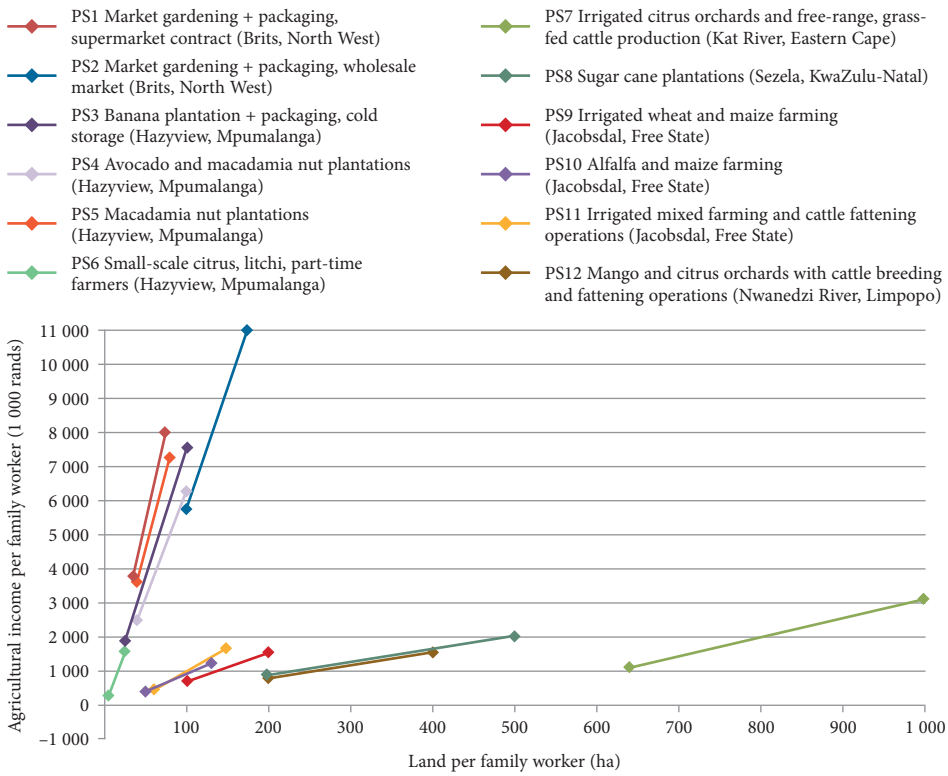
In each region studied for this book, agricultural income was carefully measured for each type of farm, based on calculations of the value added produced and how it is distributed (Chapter 3). To give an idea of the range of potential income in each

region studied, specific chapters will be referred to. The ranges are so significant that it is impossible to represent all situations using a single graph.

The graph in Figure 10.10 represents twelve production systems that are characteristic of the white-owned commercial farms in the regions studied. All are heavily dependent on irrigation. The graph represents agricultural income per family worker (this usually means the farm owner involved in the production process and, where applicable, other family members) for a given production system, as a function of the agricultural surface area per family worker.

The first group of lines along the y-axis (PS1, PS2, PS3, PS4 and PS5) are market-oriented field fruit and vegetable productions (Brits area, Chapter 9) and irrigated arboriculture (Hazyview, Chapter 5) production systems that generate high levels of income on relatively small surface areas. The income per family worker ranges from R2–R11 million/worker/year (about €170 000–€900 000), an agricultural income to be envied by many European farmers, even those with very large farms. Remember

Figure 10.10 Agricultural income per family worker for different types of family business farms



Source: Author, based on results of case studies

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that the income here consists of the total surplus generated, after all production costs (including fixed capital depreciation and wage labour) have been covered. All of these production systems still depend heavily on manual tasks, and thus heavily on wage labour. This explains the high income levels, given the disproportionate share of value added going to farm/plantation owners to the detriment of workers. Because worker pay is so low compared to their productivity, the more the tasks are kept manual and dependent on wage labour, the more the owners earn.

A second group below the first one (orange, purple and pink lines PS9, PS10 and PS11) represents three types of commercial holdings in the irrigated area around Jacobsdal (Chapter 8). The labour productivity is highest among these production systems (see above), but these holdings, which are based largely on cereal crops and lend themselves more easily to an entirely motomechanised production process (unlike market-oriented gardening/horticultural production or arboriculture), employ only small numbers of workers, mainly farm machine operators. Equipment and input costs are higher and the share of wage labour in the production process is smaller. Workers are not paid much more because of this, but their under-compensation represents a point of leverage for the owners' incomes, which range from R500 000–R2 million ('only' €42 000–€170 000).

A third group of lines (PS7, PS8 and PS12) stands out from the others for their gentler slopes, reflecting the more extensive nature of these holdings. These include production systems based on both irrigated arboriculture (citrus, Chapter 6; mangoes, Chapter 4) and free-range animal production, and also rain-fed sugar cane plantations in the Sezela area (Chapter 7). The income from these types of farms usually ranges from R800 000–R2 million/worker/year (€70 000–€170 000), or more for the Kat Valley farms that combine irrigated arboriculture with free-range livestock production.

Figure 10.11 represents a selection of production systems that depend exclusively on free-range animal production, as practised by family-run commercial farms in the Beaufort (Eastern Cape, Chapter 6) and Jacobsdal (Chapter 8) areas. With several thousand hectares per family worker, these farms also bring in comfortable incomes of R500 000–R1 million for the less well off and of R2 million or more for the game farms around Jacobsdal (PS16) or for the very large farm based on merino sheep and angora goat production in the Beaufort area (PS14, Chapter 6). The gentler slopes of the lines indicate that the income per hectare is lower, and the only slightly steeper PS17 line can be explained by the use of irrigation for cereal crops.

The argument that the policies deployed by the new South African government will have dangerous repercussions for commercial agricultural holdings appears to be based more on alarmist representations (the burden of wages, increasingly strict legislation, etc.) that serve a political agenda than on an objective analysis of the economic situation of white-owned farms. While the number of white-owned farms has indeed decreased from 60 000 to about 40 000 over the last twenty years, this

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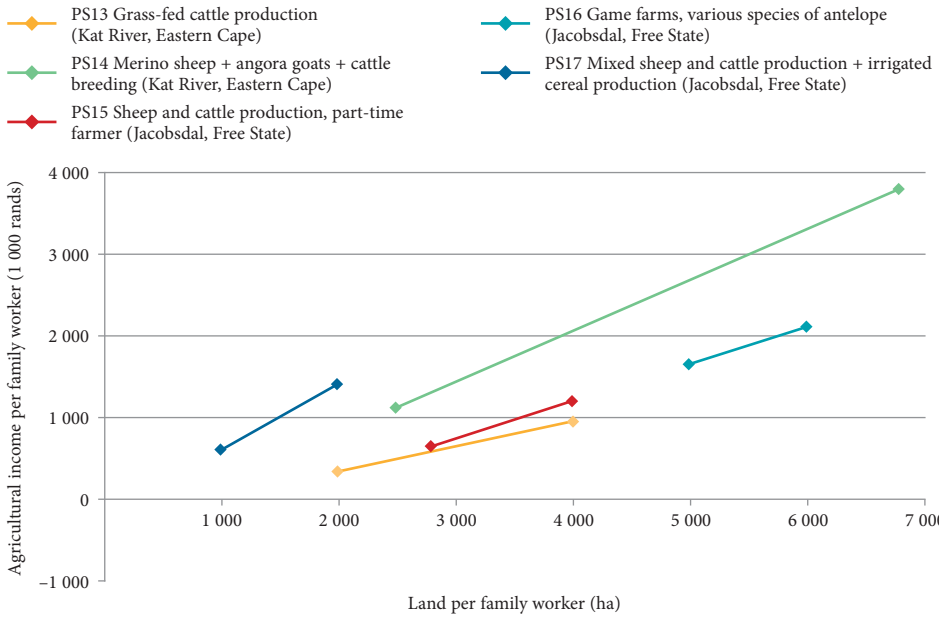
Figure 10.11 Agricultural income per family worker for different types of family-run farms



Source: Author, based on results of case studies

is due to the continuing expansion process that was started in the 1950s (Chapter 1), as well as threats to the safety and long-term political viability related to reforms linked to land and the people on these farms in certain regions that drive the owners to search for investment opportunities elsewhere, in particular in the southern African sub-region (Chapter 13). It cannot be attributed to a deteriorating economic situation caused by drastic reductions in government aid that might threaten the financial viability of these farms.

Conclusion: The widening productivity and income gaps within South Africa's agricultural sector

How much agricultural income do small 'historically disadvantaged' producers earn? For all production systems that concern them and which have been discussed in the chapters of this book, annual income amounts to a few thousand rands (hundred euros) at most. The ratio separating these very poor farmers from commercial farm managers who earn millions of rands in income per worker (several hundred thousand euros) is 1:1 000, or ten times more than labour productivity gaps.

Of course, there are intermediate situations between the very high income of most of these commercial farms and the negligible income earned by farmers trying to eke

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out an existence in the former homelands. This is particularly so in the case of land reform beneficiaries or those who were well connected to the tribal authorities in the former bantustans and who benefited from clientelist practices.

The fact remains that apartheid has left an indelible mark on rural South Africa by considerably widening productivity and, even more so, income gaps between the country's different types of agriculture. This has led to development for some, but accelerated underdevelopment for others who, a century ago, were vibrant contributors to South African agriculture.

Notes

1 It is only in the south of the United Stated of America where the availability of slaves resulted in comparable trajectories to South Africa: partial mechanisation and the maintenance of a relatively high number of manual tasks, made possible by cheap labour. As such, South Africa did go the same path, somewhat later and not as rapidly.

2 Compared at a similar maize price of about €140/mt (Cochet et al. 2008).

3 Second Du Plessis Commission (Commission of Inquiry into Agriculture), 1973.

4 Extension of Security of Tenure Act, No. 62 of 1997.

5 However, this period was also marked by a significant decrease in agricultural jobs, in particular lower-skilled ones (Simbi & Aliber 2000), leading to the replacement of permanent employees by temporary workers.

6 R608/month in 1996 currency, according to the South African Department of Agriculture and Stats SA (2000), quoted by Simbi and Aliber (2000: 11), or R1 552 in 2012 currency.

7 The same employers declared that they had never paid any unemployment insurance (1 per cent) or any workers' compensation insurance.

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11 *Ambiguities, limits and failures of South Africa's agrarian reform*

Hubert Cochet and Ward Anseeuw

South African agrarian reform: Contrasted surveys 'from the bottom'

On the one hand, the previous chapters have shown the significant diversity of existing agricultural production systems structuring the agricultural sector in today's South Africa. On the other hand, as this diversity still in many ways follows racial lines, these chapters also emphasise the strong legacy of the country's socio-economic and political systems.

Changes did occur, however, and were often related to predominantly the land, as well as some agrarian, reform programmes implemented over almost two decades. The extent of these changes, however, requires further analysis to assess the effectiveness of South Africa's agrarian transformation. Have the country's transformations allowed for more equitable access to productive resources and distribution of revenues and wealth created by agriculture? This chapter will dig deeper into the land reform projects and agrarian reform cases from the different regions assessed within the framework of this book. The analyses will focus on the structural changes embedded in the country's broader agrarian transformation. As such, based on the case studies presented (Chapters 4 to 9), they will not present another evaluation of land reform projects, but will complement the land reform literature (presented in Chapter 3) by embedding them within broader agrarian assessments.

Brits and Hazyview: Known examples of failed restitution programmes

The following examples, which concern the studied areas mentioned in Chapters 4 to 9, illustrate the difficulties encountered by the land restitution process, which had come to an end before it was reopened in 2014.

Land claim and restitution on the irrigated perimeter of Hartbeespoort (Brits region, North West province – see Chapter 9)

In 1998, the Bakwena Ba Mogopa community, located in Bethanie, submitted a land claim concerning over 9 000 mainly irrigated hectares in the Hartbeespoort area on the Crocodile River, a claim that was approved by the government in 2004 as part of the land restitution programme. In 2011, out of the 9 367 ha claimed by

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this community, around 4 000 ha had been effectively restituted. The claim on the remaining hectares came to nothing – these comprise gabbro and norite quarries, considered to be too valuable; lands belonging to the Magalies Citrus Factory; plots which owners refused to sell and/or for which owners challenged the legitimacy of the claims submitted.

Administered in the name of the tribal authorities by the Communal Property Association (CPA), the lands effectively restituted were then rented out for a symbolic rent of R500/month (€45/year) for areas of 10 to 20 ha (whether or not irrigable),[1] with the one- to five-year leases being renewable and possibly transmissible to heirs. The beneficiaries were selected (according to criteria that were not always clear) from a long list of applicants: only 80 to 90 of the 843 applications validated by the CPA were selected and supposedly received lands.

According to CPA officials interviewed, lands were allocated by taking into account the project of each applicant. However, observations carried out on the sections of the irrigated area affected by the restitution process and the interviews conducted in 2011 made it possible to obtain a glimpse of the actual conditions under which land restitution took place, and under which beneficiaries entered into possession of such lands.

Although the government's purchase of farms affected by the restitution process is supposed to include buildings, irrigation and drainage infrastructure, fences and equipment, in reality transfer is most often reduced to only a land transfer. Indeed, in the majority of cases, the farmers willing to sell their property managed to remove their equipment before selling so that, at the time of the transfer, the farm was devoid of most of its equipment. Moreover, the time it takes to bring the process to a successful conclusion, the vagueness felt by many as to what would happen to the land and the fact that former owners abandon their farmhouses, have given free rein to an outburst of looting, leading to farmhouses being pulled to pieces before CPA-designated beneficiaries have the means to prevent this from happening or to protect/monitor their newly acquired properties. Anything that can be taken away and resold, including fences, electrical installations (meters, wires, switches and telephone cables), irrigation installations (pivoting irrigation pipes, pumps) and objects from the actual dwellings (air conditioning systems, sinks, bathtubs, roofing material, door and window frames) seems to have been dismantled and removed. As a result, certain sections of the irrigated area where the restitution process was brought to a successful conclusion are made up of abandoned farmhouses, stripped down over time, isolated in the middle of plots lying fallow, with pivoting irrigation lines here and there, or what remains of them (Photograph 11.1).

Where other, less destructive processes are observed, these have resulted because land restitution to the original communities was only a matter of formality, and because the actual farming operations remained in the hands of the former owners. Some seem to have negotiated with the CPA the right to rent their former property

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Photograph 11.1 Agrarian reform landscape on the irrigated area of Hartbeespoort

Source: Hubert Cochet, 2011

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(or part of it), after it was bought from them by the state within the framework of the restitution process. This can then represent a temporary solution, making it possible to prevent farmhouses from being looted, or an intermediate solution to ensure an income or constitute an investment capital, although there is still a risk that the whole exercise is a step backwards, with the payment of a land rent to the 'beneficiary' community. In this case, the former owner should pay a higher rent, since it is not just the land that is being rented, but the entire farm, including the buildings and equipment.[2]

Sometimes, other white farmers who are not affected by the restitution process (or perhaps as in the previous case, who have sold their farms) offer their services to beneficiaries of the land restitution process, taking over the entire farm as third parties (with the specific terms and conditions of the arrangement still to be cleared up). One of them even supposedly offered to repair the pivoting irrigation system and related installations at his expense, perhaps in the hope of perpetuating lasting control over the farm.[3] An arrangement of this type apparently took place directly

between a white farmer from the area (or even the actual expropriated owner) and the CPA, while waiting for the final resolution of the land restitution claim.

According to interviews conducted by Rémy and Clerc, it would seem that, in 2011, out of the 80 to 90 farmers who benefited from the restitution process, barely one dozen are apparently farming the land efficiently and directly, which of course leaves one perplexed.

As noted, this irrigated area is characterised in particular by the presence of motomechanised farms, specialised in field-scale horticultural production, with crops intended for the large markets of Johannesburg and Pretoria (see Chapter 9). Despite land restitutions taking place in the irrigated area, none of the actual beneficiaries of the process has managed to implement such a production system, for lack of means. The few beneficiaries of the agrarian reform who are currently farming the land received instead practise a production system based on the cultivation of wheat and soya, which requires much less seed money. A large part of the work is subcontracted to agricultural service companies, with the marketing of the crop being undertaken through the MGK (former cooperative, now privatised) group, making it easier to sell.

As such, while they are unable to establish labour- and capital-intensive vegetable-growing systems, the beneficiaries of the land restitution process must 'rely' on large-scale irrigated cropping systems (wheat/soya) with all or part of the crop management sequence being subcontracted to agricultural service companies. As a result, the number of jobs created or protected per hectare is low (1 labourer/10 ha maximum, particularly as regards manual irrigation) and the value added per unit area is ten times less (R7 200–R9 600/ha, the equivalent of €600–€800).[4]

Kiepersol, region of Hazyview (Mpumalanga – see Chapter 5)

In Kiepersol, a region of irrigated fruit arboriculture producing bananas, macadamia, avocado, citrus and litchis, although practically all the land owned by white farmers is the subject of a land claim, the latter do not seem too concerned: irrigation infrastructures are being multiplied (private compensating and storage reservoirs), farms are increasing in size and farmers continue to invest (construction of new packing stations, renewal of plantations) (Regourd 2012). Only one 450 ha banana farm was actually restituted in Burgher's Hall, in the south of the Kiepersol area. Concerning the other properties subject to a land claim, either the procedure has been blocked due to administrative constraints, or the potential beneficiary communities have not managed to prove that they occupied the land in the past and were displaced as a result of the various racial laws established by the apartheid regime. Despite the fact that land claims have been ongoing for more than ten years, the current owners consider themselves safe from the restitution process and continue to invest in their farms (Regourd 2012).

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The only farm affected by the process was restituted in 2000 to the Giba community. However, the R95 million which the government supposedly gave to the community in question to continue farming and maintaining the banana plantation was dedicated to other uses,[5] and so production collapsed rapidly. The farm equipment was stolen and the land lay fallow. The restitution of this farm was therefore a failure and the land is shortly going to be rented out to a private investor from Komatipoort, more than 150 km away.

The irrigated area of Jacobsdal on the high central plateau and the poor results of the redistribution programmes (see Chapter 8)

In the region of Jacobsdal (Letsemeng Municipality, Free State), no land claim has been lodged given that the region was not very populated when the Afrikaner settlers took possession of the land at the time of Kimberley's first diamond boom. On the other hand, this region offers several interesting examples of agricultural land transfers carried out within the framework of redistribution programmes.

These programmes only affected a very small surface area and concerned a small number of beneficiary families: ten cases of land redistribution altogether, concerning four families and six groups (Chapter 8). The state bought affected farms from white farmers who were willing to part with them owing to financial problems or to the fact that they were retiring. State lands were also affected by this redistribution programme, alongside the perimeter and where irrigation had never been installed because the soils were too stony and not cultivable. The land redistributed was, therefore, generally that which was less suitable for agriculture (Arrazat & Périnelle 2012).[6]

Accessing grazing lands to establish small, extensive animal production via the Settlement/Land Acquisition Grant

The first example concerns fifty-nine families living in the Ritchie housing estate who, in 1996, acquired a farm of 1 522 ha with no irrigation through the Settlement/Land Acquisition Grant (SLAG). A trust was constituted to jointly manage this fund; the purchase of the farm included land, infrastructure and cattle. The stocking capacity being low, each family obtained one cow and her calf, with no possibility to expand. Today, the entire infrastructure has either deteriorated or been stolen. To date, only eight people still have animals, each having between three and ten head of cattle.

Limited access to lands of the irrigated area via Land Redistribution for Agricultural Development

Irrigated farms were also redistributed through the Land Redistribution for Agricultural Development (LRAD) programme, to groups of three to thirteen

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members. In this case, the surface area per beneficiary varied from 1.3 to 17 ha. Among these cases of land redistribution, one type has been characterised in detail by Arrazat and Périnelle (Chapter 8, PS8).

It concerns a group of thirteen beneficiaries who collectively developed a farm redistributed within the framework of the LRAD programme. The group grows alfalfa under irrigation, specialises in viticulture and pig fattening and does sheep production on a small scale. The irrigated surface area per labourer is 1.5 ha. Thanks to the subsidy they received for the farm, the beneficiaries were able to buy a small tractor, a reaper and a baler, enabling them to cut the alfalfa themselves. As such, alfalfa is chosen as a crop because it can be harvested with fairly cheap equipment and irrigated using gravity and flooding, which requires little investment. Moreover, alfalfa is sown only once every seven years, which is an advantage compared to annual crops insofar as this operation, which must be carried out by agricultural service companies, represents important costs. Finally, alfalfa makes it possible to earn a regular income with seven annual sales.

The sections of the farm which are too stony to set up a pivoting irrigation system for cereal, or to grow alfalfa, were planted with vines within the framework of a recent government project. The state subsidises the plantation of vines (4 ha). Pruning and harvesting can be carried out by hand by the thirteen beneficiaries.

Because only a small surface area per beneficiary is irrigated, they decided to intensify their production system through pig farming. This type of animal livestock production is interesting in that it takes up little space and the costs are relatively low. Also, the piglets can be sold informally in the area. The non-irrigable sections of the farm, which represent 60 ha, can only sustain grazing for eighteen ewes (Chapter 8).

Despite the relatively high productivity per hectare, and considering the low surface/labourer rate, this production system only brings in a low agricultural income per beneficiary, in the region of R25 000/labourer. However, it is clearly higher than that of families that did not benefit from a redistribution programme. This rather encouraging result is linked to the fact that the livestock–crop operation set up by this collective of beneficiaries makes it possible to limit the costs and to labour-intensify the production system, while making the best of the labour force of the beneficiaries throughout the year. Furthermore, this example illustrates a real case of land redistribution rather than the mere transfer of a company to the benefit of a black farmer. Instead, it entails the establishment of a small production cooperative in which the entire value added is distributed to the members of the group in the form of income.

In contrast, the dominant production systems in the region, which are based on the cultivation of maize and winter cereals under pivoting irrigation, generate high costs and require more powerful motomechanised equipment. Moreover, they only use the labour force during the peak periods of the cropping schedule. That is why, in the other cases of redistribution carried out in the region, the beneficiaries did not

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have the means to cultivate the allocated surface areas themselves. Part of the farm is then leased to another farmer in the area. Sometimes the beneficiaries lease their pivoting irrigation system to farmers who have the right equipment and who have access to seasonal credits. In Figure 8.19 (Chapter 8), we calculate the extremely limited nature of land redistribution carried out in the Jacobsdal area, the peripheral position of the lands involved, and the importance of land retrocessions carried out by the beneficiaries due to lack of capital.

Access to farmland via lease on land (Pro-Active Land Acquisition Strategy)

Other farmers have benefited from the Pro-Active Land Acquisition Strategy (PLAS). These beneficiaries lease their land during the first five years. Within the framework of the Recapitalisation and Development Programme (RECAP, or RADP), they benefit from an additional recapitalisation programme from the very first year. In the Jacobsdal area, Arrazat and Périnelle (Chapter 8, PS9) have described the following system: the typical farm follows the dominant model in the area, with maize and wheat cropping over one year, with a rotation of alfalfa. The level of equipment does not make it possible to undertake large cultivation operations, such as sowing and harvesting cereals and mowing alfalfa. These operations must therefore be subcontracted, thereby increasing production costs. With only a small surface area at its disposal, this type of farm intensifies production by fattening sheep, using the cereals and alfalfa produced on the farm. The labour force is made up of family members and salaried employees. Among all reform beneficiaries, these farms are the least dependent on state aid and on 'commercial' farmers. Decision-making is individual, thereby avoiding many conflicts. The farm income cleared is then sizeable in comparison with the possibilities offered to 'historically disadvantaged' populations, being in the region of R160 000/labourer/year (around €13 500).

Another beneficiary of the PLAS programme was interviewed by Arrazat and Périnelle. He managed to obtain 1 185 ha of land, with 250 ha already under irrigation. At this stage, he has proposed a recapitalisation programme within the framework of the RADP programme, which includes the installation of a cheese dairy with a view to processing the milk he intends to produce. He would also like to integrate agricultural training aimed at making small-scale farmers more autonomous. Moreover, while he is politically involved, which might have helped him to obtain his land, he is also a member of the African Farmers' Association of South Africa (Arrazat & Périnelle 2012).

Finally, a meeting was held with a market-oriented horticultural producer who, thanks to a redistribution programme, was able to acquire about one hundred hectares, ten of which are irrigated. He produces vegetables on 4 ha, as well as oats, alfalfa and maize on 6 ha to feed his animals (pigs and cows). Irrigation is by flooding and the labour force is exclusively made up of family members. He does not own any equipment for the time being. His production is sold directly

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to the residents of the area. However, he cannot increase his prices because he has to compete directly with the supermarket in Jacobsdal. He endeavours to keep his production costs to a minimum by using the manure from his animals to fertilise his fields, so as to generate greater value added. However, his situation remains delicate and his income low.

Sugar regions of KwaZulu-Natal: Redistribution of a (small) portion of land if beneficiaries produce sugar

The Sezela sugar region (KwaZulu-Natal), as studied by Sophie Bièque and Nadège Kippeurt in 2012, is mainly dominated by the large plantations stemming from British colonisation at the end of the 19th century, and from a land and industrial concentration that has been developing since then (Bièque & Kippeurt 2012). In Sezela, it is the Illovo company (an agro-industrial company held in majority by a United Kingdom company, British Foods), one of the largest in the sector, which dominates the region. Up until 1997, it owned more than 12 000 ha, of which 8 200 were planted with sugar cane. Other very large capitalist, managerial, family business-type farms, together with Illovo, dominate the regional landscape (Chapter 7).

Proactive redistribution by Illovo

The somewhat different outcomes of the agrarian reform process in the region have resulted from Illovo's anticipatory strategy. The company did not wait for the arrival of the agrarian reform to dispose of some of its farms and withdraw from its absolute control of the subsidiary Sezela sugar mill.

As seen in Chapter 7, Illovo was able to anticipate the agrarian reform by selling some of its plantations (three out of seven, totalling around 3 000 ha), which until then were under the direct management of the Sezela sugar mill. Three other units were later the subject of agrarian reform programmes:

- The first three plantations were each divided into a dozen farms of 100 to 500 ha. The sale involved the land, the standing sugar cane and one house, as well as dormitories for the sugar cane cutters. The equipment was not included in the sale as it had previously been sold by Illovo. The workshop for the maintenance of the equipment was supposed to be used jointly by all the new planters, with costs shared equally or in proportion to the sugar cane tonnage of each planter. When purchasing, each buyer was to pay 10 per cent of the total, and the balance was to be paid utilising a twenty-year loan obtained from Ithala Bank.[7] Moreover, buyers were to sign a cane supply agreement with Illovo, that is, a contract committing them to deliver their entire sugar cane production to Illovo for twenty years, and to keep at least 90 per cent of the initial surface area under sugar cane. Of note is that, until 2010, these new freehold growers (NFGs) had not benefited from any government aid, since these transactions were implemented outside the official agrarian reform programme (Bièque & Kippeurt 2012).[8]

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- One of the former Illovo farms was subdivided into eleven farms of 100 to 400 ha each. Each farm was redistributed to a beneficiary selected by Illovo on the basis of criteria taking into account farming experience and place of residence, as well as the amount of initial capital brought in by the buyer (within the framework of LRAD).
- Finally, within the framework of PLAS, in 2007 the government bought a farm (Beneeva) of 1 800 ha, including 1 200 ha of sugar cane, from Illovo, with a view to leasing it, as is, to a limited liability proprietary company comprising four shareholders (one trust representing permanent employees and three companies representing three families).[9]

In the end, these five farms which had belonged to the sugar company were sold (with or without subdivision), leading to the establishment of forty-three black planters, beneficiaries of the agrarian reform (see Chapter 7, Figure 7.6).

Dynamics

The future of these different categories of planters and the current state of their farms has been described in detail in Chapter 7. Of note is the fact that among the new planters who acquired a piece of the former Illovo farms, many encountered sometimes insurmountable difficulties. Owing to lack of capital or farming experience, some beneficiaries could not withstand the increase in farm input prices, as occurred during the 2000s, and are no longer active today, their farms having been bought out by other beneficiaries. Moreover, in this category, some do not actually farm their own lands and have leased them to other (white) farmers. As such, out of the forty-two initial buyers, only thirty-one beneficiary farmers remain today. On the other hand, beneficiaries of the agrarian reform who had access to more capital (e.g. because they were employed in teaching or similar positions) chose diversification and began with small-scale cattle farming. The beneficiaries going in this direction are those whose farms include a fairly significant proportion of natural areas that could not be recycled into sugar cane plantations. Finally, those who had privileged access to capital (e.g. due to external work or relations with the government that made it easier for them to access financial aid) are developing their farms and rapidly moving towards the production systems of private white planters who have been established for more than a century. This is the case of those who created the Beneeva company through PLAS.

Considering the failure of some of the beneficiaries who bought out one of Illovo's former farms, the government seems to be favouring PLAS for the acquisition and leasing of farms (like Beneeva). Nonetheless, Beneeva has been transferred with no subdivision to a restricted number of beneficiaries who replicate the capitalist operation of the farm. Under this form, the new agrarian reform programme seems to aim rather at transferring a property from a white person to one or several black persons, with no actual land redistribution and without questioning the production model. Moreover, the beneficiaries are only leaseholders of the farm, and are

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subject to a supply agreement with the sugar company.[10] This throws into doubt the accountability, capacity building or empowerment of the beneficiaries. Then again, to be in charge of such a farm with a large capital endowment (equipment and plantations) – which, at the time of transfer, is not always in a good state from an agronomic and a technical point of view (old sugar cane and equipment) – requires an investment capacity which only a small black elite can afford.

Communities benefiting from restitution programmes, trapped in sugar cane monoproduction

Bièque and Kippeurt (2012; Chapter 7) have identified three cases of restitution in the region of Sezela. The first two differ in size and in the agronomic state of the farm at the time of restitution. In the first case (PS5), the plantation extends over 565 ha and the sugar cane is not old. The farm also has a forest plantation. The second one (PS6), on the other hand, received the restitution of a 50 ha plantation in a bad state, with only 19 ha of sugar cane that turned out to be very old. In the third case (PS1), the beneficiary community could not manage the farm and leased it out for ten years to its former owner.[11]

These property transfers, with no subdivision and with the obligation to continue growing sugar cane (and sometimes eucalyptus), were executed according to very restrictive terms and conditions. The obligation took on the form of a cane supply agreement concluded with Illovo.[12] In order to ensure that the transferred farm would have enough money to respect the crop management sequence imposed by the sugar company, Illovo withheld an amount of around R130/ton, calculated on the basis of a production cost/ha–gross output/ha ratio. Finally, in order to make access to credit possible, the sugar company established partnerships with banks in which the value of the cane supply serves as guarantee.

The case of the community of Mbelu is a good illustration of the impasse which South African agrarian reform has reached. Yet, this community is among those that benefited from the land restitution process under the best possible conditions: the sugar cane plantations (565 ha) were productive, a large part having been renewed shortly before, and the eucalyptus plantations (80 ha) were coming to maturity (Chapter 7, PS5). The sale of timber during the first four years enabled the beneficiaries to acquire necessary equipment; usually, beneficiaries are seriously handicapped by the lack of such equipment. But the compulsory processes of the company authorised to manage the farm on behalf of the trust (which cannot do it directly), and the conflicts of interest that inevitably arose between these two entities, seriously threaten the continuity of the farm. Indeed, the members of the trust have been accusing the company of lacking transparency in managing the farm, and do not believe the company when it asserts that the farm is not clearing any profit, a reason that would justify the lack of money that should otherwise be coming to the trust at the end of the year. The remuneration of the company's directors, which is

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considered too high since some have other jobs, puts strain on the results and is apparently one of the causes of the existing tensions (Bièque & Kippeurt 2012).[13]

Also, it appears as if the company which took over the restituted farm is working more to ensure comfortable salaries for the directors (who are not members of the community of beneficiaries) than the payment of dividends to the beneficiary community.

Moreover, the trust representing the Mbelu community has applied to benefit from the RECAP programme, with a view to replanting sugar cane and acquiring equipment to harvest the cane, such as tractors, trailers and loaders.

The community of Braemar was less lucky: the 50 ha restituted included only 19 ha of sugar cane, which was in a bad state. Another handicap for developing this farm was the absence of equipment and the lack of qualified members in the community, which made resorting to an agricultural service company unavoidable.

In 2010, within the framework of the Comprehensive Agricultural Support Programme (CASP), the Department of Agriculture granted a subsidy of R300 000 to the trust to help rehabilitate the farm. The money was deposited into a dedicated account of the sugar company, and led to the replanting of 8 ha in 2010 and 8.7 ha in 2011, based on a replanting cost of R18 000/ha. Today, as a result, the surface area of the sugar cane is 35 ha (Chapter 7, PS6).

In practice, the agricultural service company takes care of the replanting, and its services are settled directly by Illovo using money from the CASP subsidy. The agricultural service company carries out all the work and directly buys fertilisers and herbicides, still using Illovo's account. On each delivery of sugar cane, Illovo withholds the amount due to the agricultural service company from the gross income from the supply and pays it directly to the service company for cutting the cane. Reimbursing the purchase of farm inputs and paying for all the cutting operations is done from the money available in the farm's withholding fund.

There are few spin-offs from cane farming for the beneficiary community. The whole production process is beyond its control, and the few jobs created (one manager, who is a family member of one of the trust members; one full-time security guard; fifteen women employed on a seasonal basis for weeding and clearing firebreaks) do not automatically constitute a net profit compared to the situation that prevailed before the restitution.

In order to deal with the lack of initial qualifications of community members in the agricultural domain, Illovo, preoccupied with maintaining its supply of sugar cane, established a tutorial system based on voluntary participation. In exchange for remuneration from Illovo, based on the tonnage delivered by the farm, the (white) tutor is responsible for advising the farm manager, and for assisting him or her in carrying out the cultivation operations. However, in practice, the tutor is very often

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the agricultural service company. How could this self-serving agenda actually lead to the progressive empowerment of the beneficiaries of the agrarian reform?

In the two cases studied, the existence of a supply agreement with Illovo, the outlet security procured by the sugar company, the prospect of benefiting from government support intended for sugar cane planters, as well as the facilities offered by Illovo to planters who do not have equipment or capital at their disposal, constitute the many factors impelling the beneficiaries of the restitution process to pursue the cultivation of sugar cane. Yet, this apparent support has the pernicious effect of keeping planters permanently indebted to the sugar company. In the two cases studied, not only does the restituted farm seem to be caught up in a system compelling it to produce sugar cane, despite all the handicaps (lack of experience, skills and capital), but the beneficiary community also does not benefit from the situation. Believing, or being forced to believe, that they share a common interest with Illovo, the beneficiaries of restitution programmes find themselves trapped in sugar cane monoproduction. This is to the detriment of a diversified production system that, by creating more jobs and value added per unit area, would be far more in keeping with their interests.

Quantitative review on sugar cane

In Chapter 7 (Figure 7.20), Bièque and Kippeurt examine where the Sezela sugar mill obtained its sugar cane from at the end of the agrarian reform process. In terms of production, the private white planters and the plantations belonging directly to Illovo provide 74 per cent of the sugar cane delivered to Sezela, while the new black freehold growers only provide 18 per cent.

As such, the rate of sugar cane provision of 18 per cent and the more important proportion of surface areas actually distributed (productivity being lower) are not insignificant. These suggest that the sugar-producing regions are perhaps those where the agrarian reform process has achieved results which are not negligible in quantitative terms, and which are clearly of more consequence than the 5 to 6 per cent which can be seen nationally. However, an analysis of the conditions under which these sugar cane plantation transfers took place clearly shows the limits of this process in terms of beneficiary numbers, which are extremely reduced, and in terms of the consequences of being trapped in a sugar cane production system that offers no definite way out.

Citrus plantations of the Kat River: A mixed example of company transfer

In this case, there was no agrarian reform and therefore no restitution process, admittedly because the non-stop movement of populations during the 19th (frontier wars) and 20th centuries (different stages of the constitution and consolidation of the bantustan of Ciskei) had erased the necessary evidence of any former occupation to serve as the basis for this type of claim. In addition, there was no land allocation procedure according to the other mechanisms provided for by the South

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African agrarian legislation. In the Kat River Valley, paradoxically, it was when the 'independent' government of Ciskei was in power that agrarian reform seemed to unfold. With the change in political regime following the advent of democracy, the allocation of lands to the collaborators of the former Ciskei regime (through the 'agrarian reform' established by the government of Ciskei) was challenged. Measures were established which were meant to favour the revival of citrus production, following a model which is not very different from that established under the supervision of the Illovo company in KwaZulu-Natal.

The puppet government of Ciskei entrusted Ulimicor with supervising the beneficiaries of the programmes, after the privatisation of plantations previously under the direct management of this organisation. Ulimicor continued to give significant support to the farmers in technical, administrative and financial terms, until it was dismantled in 1997 within the framework of the national policy for the liberalisation of agriculture (Chapter 6).

These farmers have been assisted since 2006 by private packing companies and by the Riverside company in particular. These companies offer technical advice and help with the administrative management of the farm. Riverside sometimes also offers finance for buying the farm inputs needed for production. Assistance includes obtaining long-term loans subsidised by a governmental development organisation. Moreover, Riverside intervened as intermediary between planters and the Industrial Development Corporation (IDC) to obtain subsidised loans aimed at boosting production (Quinquet de Monjour & Busnel 2012). Riverside managers assume the role of mentors within the framework of the agricultural black economic empowerment policy (AgriBEE).

Patrick Quinquet de Monjour and Jérôme Busnel (2012) identified three categories of black planters who benefited from these land transfer programmes prior to 1994. Some of these farms (Chapter 6, PS5) remained productive until Ulimicor withdrew. Thereafter, production fell sharply and farmers were no longer able to renew their orchards or their equipment.

As noted in Chapter 6 (Figure 6.12), the sizes of the orchards on this type of farm today vary between 12 and 25 ha under irrigation. Added to this are the shrub savannah grazing lands of the surroundings to which planters have access, as did the communities of former farm workers who stayed on after the white planters left in 1980 (pursuant to the consolidation of the Ciskei). The farmers graze their herds there (around 50 sheep or goats, a figure which is variable according to the year and the sales). Only one family member works on these farms; usually it is the person who was chosen by Ulimicor at the end of the 1980s for privatising the farm. The number of permanent employees varies between four and six, and a dozen day labourers are used for six months of the year. During the harvest, a team of fifty seasonal workers is employed. The level of equipment on these farms remains low (e.g. two tractors, trailers, crop duster), typically bought second-hand around 1990

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during the takeover of the farm. This leads to frequent breakdowns, preventing the farm from running smoothly as well as decreasing production quality and financial results (Quinquet de Monjour & Busnel 2012). The productivity of each planted hectare (value added/ha) is R12 800/ha, that is, 3.5 times less than that of properly equipped farms (R42 100/ha). Labour productivity is low, in the region of R15 000/labourer (seven times less than that of the large, well-equipped farms of the region). The farm income, in the region of R50 000/labourer, is forty times less than that of well-equipped farms.

Other plantations were leased to close relatives of members of the Ciskei government for whom agriculture did not represent the main source of income. After the withdrawal of Ulimicor, these farmers were little involved in the running of the farms; production stopped completely, trees were abandoned and the equipment sold. These farms have benefited since 2008 from the same type of support from the Riverside company, but the management of the farm is subcontracted entirely to the company. As such, Riverside supplies services on these farms, employing its own labour force and using its own materials. All decisions concerning the management of the productive orchards are taken by Riverside, with the owners being consulted only for decisions concerning investments (e.g. planting new orchards, renewal of irrigation equipment). Moreover, owners have taken out loans directly from Riverside to finance the acquisition of irrigation pumps and pipes that were stolen or damaged after 1997. The main part of the value added created on this type of farm remains in the hands of Riverside and its salaried employees. The owners are being paid only a monthly sum by the company, which can be likened to a rent, de facto expressing some sort of leasing situation.

A third type of farm was also transferred to black farmers at the end of the 1980s during the consolidation of Ciskei, but these did not include any orchards. Today, two of these farms are managed by communities of former farm workers who remained on site after the white farmers were expropriated.

Riverside supported these farmers from 2006 onwards by helping them to obtain title deeds and a plantation loan with the IDC. The loan was to be used for planting orchards, installing irrigation infrastructure and cultivating the land for ten years, depending on the plantation. Riverside also plays the role of mentor to these farmers and manages the IDC loan. In practice, the mentor delegated by Riverside is behind all the decisions taken regarding the plantations, with the farmers' participation in the production decisions being minor. Riverside operates mainly as an agricultural service company, where services are invoiced on an hourly charge rate, as in the case of the other types of farms discussed earlier (Quinquet de Monjour & Busnel 2012).

The efficiency of the production process leaves much to be desired, with the results of this type of structure remaining well below those obtained by farms managed directly by their owners. The general surface area of orchards has been on the increase since 2008 in the upstream section of the valley (that which was integrated

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into Ciskei). It would seem that collaboration between the packing companies and the planters is improving, thanks to mentoring and to the administrative and technical support offered by the packing companies. As such, these farms are likely, in the future, to represent a growing proportion of the valley's citrus production, and to acquire more weight with the packing companies. Their bargaining power should also increase around the issue of water access. It would seem that Riverside, the largest citrus farm in the valley, has wanted to see black planters being more involved in the decisions taken at the level of the packing company. However, since this company has recently been bought out by a Spanish fruit marketing company, its management could change (Quinquet de Monjour & Busnel 2012).

The almost complete delegation of the production process to Riverside, which is concerned above all with increasing the supply for its packing and conditioning equipment, has also led to dispossessing black planters entirely of any production management or initiative, thereby transforming them into a form of land annuitant. Moreover, since these farmers have taken out loans with the IDC, they are linked to packing companies through contracts stipulating that these loans must be used only for setting up irrigated orchards. Just as with the sugar production situation in KwaZulu-Natal, the farmers see themselves as trapped into one specialised production system which is entirely controlled by 'historical' actors.

It is of concern that, although future public support, and the RECAP programme in particular, enables farmers to have more efficient equipment at their disposal and to plant new orchards, this will contribute to them going deeper into the development model chosen from within the rigid framework of South African agrarian reform, rather than allowing them to explore other avenues.

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In Limpopo province

This region, which was studied in 2009 by Maud Anjuère and Mathieu Boche (Chapter 4), offers almost no example of agrarian reform, whether in the form of restitution or redistribution. These authors wrote:

> In our study area, only 4 farms were redistributed. These farms, which extend over one hundred hectares or so, were redistributed to farmer collectives made up of between 4 and 8 members, who were often civil servants of the former government of the Bantustan of Gazankulu. These collectives were rapidly dismantled and, today, each one of these farms is in the hands of one family only. In this case, redistribution was a simple change of ownership, i.e. from a white owner to a member of the country's black majority. At best, the production systems set up are the same as those prevailing in the past (mango production and cattle farming) and, as such, redistribution did not create jobs or additional wealth. In cases where the new owner did not have the technical and financial means to manage the farm, it was simply abandoned … Therefore, redistribution

> did not change anything for the great majority of citizens working as farm employees. (Anjuère & Boche 2009: 110)

The research work conducted by Ward Anseeuw and Ntombifuthi Mathebula (2008) in Limpopo province (Mole-Mole Municipality) led to similar conclusions. Although this municipality saw the emergence of forty-two agrarian reform projects affecting thirty-nine farms held by white farmers (with six restitution files and thirty-six redistribution projects, including seventeen SLAG projects and nineteen LRAD projects), concerning 31 800 ha and theoretically benefiting more than 5 000 households, the trajectories of these projects usually led to poor results. Except for three success stories with otherwise fragile results, production collapsed in all other cases, and the low incomes cleared from the areas in question benefited only a very small number of beneficiaries (Anseeuw & Mathebula 2008).

Redistributing water rights: Everything remains to be done

Historical water access conditions and recent reforms

Water and the conditions for accessing and sharing this resource obviously constitute a central issue in South Africa. Just as for unequal access to land, the fact that black populations were practically deprived of access to water, for irrigation in particular, weighs very heavily today. David Blanchon (2009) explains that while the Netherlands, via the Dutch East India Company, first imposed a legislative corpus inspired by the metropolis and privileging the public control of water (in a country where it was especially necessary to protect the land from water-related threats), the British progressively introduced a system where the owner had extensive powers over the water traversing his or her estate, that is, the concept of riparian rights.

After the Anglo-Boer War, South African water policy became clearer with the necessity to supply water to Johannesburg (located on a watershed between the Vaal and Limpopo rivers), and the priority given to irrigation. The Irrigation and Water Conservation Act of 1912, in protecting riparian rights, gave extensive powers to farmers, and Afrikaners in particular. The idea was to favour riparian rights as much as possible, particularly for irrigation, while guaranteeing the needs of downstream residents (Blanchon 2009).

Although the role of the state (in addition to its involvement in major hydraulic works) was subsequently reinforced as far as water management was concerned, particularly with a view to satisfying industrial, mining and urban needs, riparian farmers kept their rights and quasi-unlimited access to this resource.[14] The rights of African populations were denied to them. Major transfer projects were being carried out to the benefit of white populations. And while black populations were confined to bantustans, water was being transported in the opposite direction (Blanchon 2009).

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It was only with the National Water Act of 1998 that water resources were nationalised and riparian rights eliminated. Water ownership was then abolished without indemnification, while catchment management agencies were created and the power of the Department of Water Affairs and Forestry was reinforced (Blanchon 2009). The creation of Water User Associations (WUAs) was also promoted, to progressively replace the former irrigation boards controlled by white farmers (Chibwe et al. 2012).

The studies conducted within the framework of this research work confirm the difficult and often conflicted establishment of these WUAs. In the region which includes the irrigated area of Jacobsdal (Free State; Chapter 8), which is far from former bantustans and therefore from any major potential land-claiming population centre, a WUA has been created and seems to function well. It has a seat reserved for black users, whether farmers or representing other interests. Moreover, although additional water quotas have been reserved for 'historically disadvantaged' farmers, it would seem that part of this resource is being monopolised once more. In the irrigated area of Jacobsdal, for example, 200 ha of water quotas reserved for black people are in actual fact rented out to the highest bidders – white farmers (Arrazat & Périnelle 2012; see Chapter 8). Other white farmers associate with black farmers in the form of joint ventures so as to be able to access additional water quotas. Arrazat and Périnelle describe the case of a farmer who came to an arrangement with one of his employees: additional water quotas allocated to his 'associate' are used on a section of the farmer's land in exchange for a portion of the profit made on that section of the farm. The employee does not really have a say in the choice of production.

In many cases – as found by Rémy and Clerc (2011), for example, in the Brits region (Chapter 9) – the WUAs were properly constituted, including representatives of all categories of users, but the power remains mainly in the hands of the same social groups. The fact that the opening of irrigation boards to other categories of users is entrusted to former riparian rights holders who are then supposed to constitute WUAs, gives them the upper hand as far as determining conditions and perimeters are concerned, as pointed out by Nicolas Faysse (2004) on the basis of eight detailed case studies. This will limit much of the scope of established and potential WUAs.[15]

The case of the Sabie River Valley (in the region of Hazyview, Mpumalanga) offers an example in which the former irrigation board continues to impose its hegemony in defiance of the new laws, and is opposed to the effective sharing of the water resource. This is the case with the great majority of WUAs, which are either inefficient or non-existent (Chibwe et al. 2012).

The example of the Sabie River Valley

In the Hazyview region, as studied in Chapter 5 by Hélène Regourd, white farmers own the Sabie River canal, the overflow of which is claimed downstream by black

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users in the former bantustan of KaNgwane, yet no WUA has been constituted to date, owing to the fierce opposition of the former beneficiaries of riparian rights. The fact that white farmers are monopolising this resource upstream prevents any equitable redistribution of water rights to those downstream. Despite the abundance of this resource, which would make it possible to considerably extend irrigated areas to the advantage of a greater number of producers, the former irrigation board continues to pursue its claim for priority rights for residents who are located upstream.

Regourd has studied the history of this canal and the riparian farms in detail. Built at the beginning of the 1950s, the canal is 25 km long, serving 1 250 ha. The allocated water quota being particularly high (17 860 m^3/ha), the white farmers who are served by the canal today only use 5 to 50 per cent of their quota. The surplus remaining after each utilisation goes back directly into the river.[16] With the canal size diminishing progressively downstream, the water flow to the last user is reduced in relation to his or her actual quota. In 2005, following negotiations, the irrigation board finally accepted the installation of canalisation (financed by the government) at the end of the canal to collect the overflow (limited by the small size of the canal at the course end), with a view to redistributing it downstream. The irrigation board, which is still operational, accepts giving the water to the farmers downstream, provided that the water rights of the white farmers upstream, although largely overambitious, are not reduced (Regourd 2012).

While most of the water taken upstream returns to the river downstream from each riparian farm, all it takes for the downstream farmers to be unable to irrigate their vegetable crops is for a few upstream users situated at the end of the canal to use all their quota (for watering golf course lawns, in particular) during the dry season. Despite the extension of the irrigated area, farmers lack water, or their access to it is too irregular, which does not always allow them to carry out two crop cycles per year.

Only a widening of the canal, or installing parallel canalisations, would make it possible to transport the overflow downstream and so significantly widen the irrigated areas and the number of beneficiaries. The owners of the canal oppose this. As a result, the efficiency of the irrigated area of the Sabie River Valley is today very low when considering the quantities of available water, which are reserved for the benefit of the holders of historical rights, and despite the replacement of the former irrigation board by a WUA, as provided for by law.

The case of the Sabie River Valley illustrates the importance of real irrigation water redistribution to the benefit of the largest number. Making this resource available to the infertile plots of land of the former bantustans would, perhaps even more so than the agrarian reform *sensu stricto*, considerably increase the agricultural production and the number of families living from it.

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Lack of irrigation water acts as a brake on development of family agriculture in former bantustans

Examples of the residual agricultural production of former bantustans were given earlier. The agricultural income cleared by these activities – market-oriented horticultural production and small livestock farming on communal grazing areas – most often remains limited to within brackets of a few thousand rands per year, at the most.

It is manifestly the lack of access to irrigation water that most limits the development of these activities. Generally, without access to the most basic irrigation infrastructure, the families in former homelands have to rely on a communal tap to provide water for their vegetable gardens. Concerning the villages of Mandlakhazi and Nwadjaheni (in the former bantustan of Gazankulu, which is today part of Limpopo province), Maud Anjuère and Mathieu Boche write:

> The second variable which can explain the diversity of food-producing systems is access to water.[17] This access is going to condition the possibility of undertaking counter-seasonal vegetable cropping. 91% of households in the study area … are entirely dependent on communal taps for their supply of drinking and irrigation water. Originally, communal taps were installed at the end of the apartheid period in the communities, to enable households to access drinking water. Today, taps only work one day a week, and irregularly. Therefore, what is urgent for these households is, above all, to store drinking water and, secondly, to have access to irrigation water. (Anjuère & Boche 2009: 62)

The quantities of water used are then very low, with households having to face considerable difficulties in transporting water in buckets or containers, sometimes over very long distances. Anjuère and Boche state:

> Households make the most of the day when the communal tap works to do their chores which require more water than for other days (laundry and cleaning among other things, and watering vegetable patches). Someone from the household then returns to the communal tap to fill in a dozen containers of 25 litres each, which are then stored for the remainder of the week. Out of the 250 litres stored, a minimum of 190 litres are used for the needs of the family (cooking, drinking and hygiene). As a result, a maximum of 60 litres is left to undertake a second garden watering session during the week. With this quantity, one can water a maximum of 120 plants, that is 20 m^2. (Anjuère & Boche 2009: 4; see also Chapter 4)

Similar difficulties are also reported by Quinquet de Monjour and Busnel (Chapter 6) for the villages they studied in the former bantustan of Ciskei.

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Yet, against all expectations, these irrigated market-oriented horticultural production activities, on very small scales, are extremely productive. Very labour intensive and requiring less and less resources (farm inputs and water), these cropping systems make it possible to clear very high levels of value added related to the unit area or the volume of water used. For all that, owing to the very small areas concerned per family, as well as the lack of water, these cropping systems are not good enough to make a living from.

Being trapped in a unique production model and the difficulties encountered to get out of it

Twenty years after the election of Nelson Mandela as president of the republic, it seems that the agrarian issue is far from being resolved in South Africa. Despite a constantly reasserted political will to end racial segregation inherited from the past, and despite the fact that not negligible means have been allocated to agrarian reform programmes, inequalities as regards access to productive resources and income differences remain significant, perhaps even among the most significant in the world. Too few areas are affected by the agrarian reform, through restitution or redistribution programmes, and the number of beneficiaries is extremely limited. Moreover, all observers agree that, in the majority of cases, the agrarian reforms, far from leading to the creation of wealth and jobs, have led to a considerable drop in production and incomes in the areas concerned.

Many criticisms formulated by various civil society actors on the occasion of the National Land Summit in July 2005 were accompanied by recommendations with a view to going forward. The sacrosanct principle of willing-seller/willing-buyer, in particular, which from the very beginning had inspired South African agrarian reform under the leadership of the World Bank (Lahiff 2007), was challenged. Concerning the restitution programmes, various proposals were made, in particular: introducing into the toolbox of agrarian reform an expropriation procedure in cases where owners block the process; reopening the possibility of lodging a land claim for those who had missed the deadline in 1998; and promoting development projects for the beneficiaries of the procedure. Concerning the redistribution phase, proposals aimed particularly at reinforcing the power of the state in the transaction, if needs be, through expropriation; intervening directly in the real-estate market by limiting foreigners' property rights, introducing a limit on private property and a right of veto by the state on market transactions, as well as a land tax; promoting the division of land to adapt to the needs of small producers; targeting the poor in the first place; indemnifying former owners at a 'fair and impartial' price that does not automatically have to be the market price; no longer letting municipal lands on lease to commercial farmers; and ending the extension of 'elitist' projects, such as golf estates and game farms (Hall, quoted in Lahiff 2007: 21).

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Since 2014, several of these proposals have been enacted (e.g. Green Paper on Land Reform published in January 2012; Policy Framework for Land Acquisition and Land Valuation in a Land Reform Context and for the Establishment of the office of the Valuer-General, as of 18 October 2012).[18] However, most have yet to be implemented effectively. Moreover, implementing these proposals, as indispensable as they may appear, would not be enough to turn South African agrarian reform around. This would also require undertaking a major break from the development model followed up to now. Indeed, whether we are talking about land being restituted to communities dispossessed of such land or land acquired thanks to redistribution programmes, these two phases of the agrarian reform have trapped their potential beneficiaries in a unique agro-economic and social model. Caught in this net, many of them cannot get out of it.

In search of the technical model

Until 1994, South African agronomic research was entirely dedicated to the country's 60 000 'white' farms, to the point of ignoring almost entirely what was happening beyond that. That is why, when the time came to take an interest in 'black' farming, a delegation of the Agricultural Research Council (ARC) came to Paris in 1995 to ask the Institut National de la Recherche Agronomique (National Institute of Agricultural Research) and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (Agricultural Research Centre for International Development) to help it fulfil its new mission. These institutions had vast experience as far as cooperation with sub-Saharan Africa was concerned, particularly in the domain of agriculture. As a result, a Farming Systems Research section was set up at the ARC, with the first applied research programme being dedicated to the Khambashe area in the former bantustan of Ciskei (Umthiza Project, Eastern Cape). A restitution seminar was organised in May 1998 within the framework of this first research programme on farming and production systems dedicated to former bantustans (Cochet 1998). Under pressure from the country's new authorities to obtain quick results that could be used immediately for development, ARC researchers went in search of a model that could be implemented in former bantustans to boost black farming. The search focused on ready-made solutions of 'technical models'. The main questions concerned production types, cropping varieties and fertilisers. These required knowing about the optimal size of a village henhouse, as well as, more generally, technologies needed to boost black farming in the former homelands. These questions echoed, in particular, the objectives attributed to the first financing programme of the redistribution phase of the agrarian reform (SLAG), which proposed modest subsidies (R15 000/household) and was aimed at the large number of poor families in the former homelands.

In addition to the fact that the imagining of development projects 'adapted' to 'former black areas' amounted to continuing separate development, as instituted under apartheid, searching for the standard model prefigured the future difficulties

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of the agrarian reforms. The perfect small-scale commercial farming operation did not exist, nor, in fact, did the 'emergent farmer' model. The actual notion of finding a model (understood as a type of production unit to be implemented immediately) is what should have been abandoned from the very beginning, so as to avoid falling back into the errors made in the past, such as betterment planning (Chapter 1).

The 'commercial' farming model

Later, as programmes in support of communities from former homelands in the form of SLAG financing were relegated to second place in favour of LRAD-enabled land redistribution programmes, the commercial farming model came to be favoured. From then on, most of the implemented agrarian reform projects consisted of simple transfers of turnkey businesses to new farmers who were qualified as emergent, with the means being implemented aiming at reproducing, identically if possible, the commercial farming model affected by restitution or redistribution. Two consequences followed on from this:

- the non-division of the property, thus forcing the transfer of the business as a whole to the benefit of only one beneficiary or, if applicable, of a collective undertaking to operate together the business transferred in this way;
- the previous production system was maintained.

The pernicious effects of the first point are legion. By merely having a farm change hands, obviously there is no agrarian reform, nor is there any evolution in the number of people accessing the land. By transferring the land to a new individual from 'historically disadvantaged' groups, landownership is certainly 'de-racialised', but it is not democratised. The fact that agrarian reform beneficiaries are defined de facto according to racial rather than social criteria has been criticised. This was not the case at the beginning of the process. But as soon as the choice was made to transfer 'viable' farms to only one beneficiary capable of bringing in part of the capital and continuing the same production process, the agrarian reform became an opportunity for the rich (or the less poor) to grab, provided they were black. The AgriBEE programme is the expression of this choice.

Worse still, when beneficiary farmers, for lack of sufficient production means to develop the farms on their own, are forced to call on an agricultural service company to undertake the whole crop management sequence – e.g. citrus plantations in the Kat River Valley calling on Riverside (Chapter 6), sugar cane plantations committed by cane supply agreements with Illovo (Chapter 7) – or even sublet their properties to neighbouring businesses (as seen in Brits, Chapter 9), the agrarian reform process is, in practice, translated into an increased concentration in agricultural production units. This goes beyond property ownership and includes the control over production.

When an actual collective takes over the new property, two scenarios can be distinguished. On the irrigated area in Jacobsdal, for example, a small collective of

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thirteen people acquired twenty-four irrigated hectares which they developed into a livestock–crop operation. Despite the small incomes generated, this is a relative success insofar as everyone lends a hand and derives a certain satisfaction from it. However, examples of cooperative production like this one are rare, unlike the many examples where the imposed form of shared farming results in bad management, the low involvement of members, a tragedy of the commons and resources being monopolised by one or several leaders. Also described was the example (in the sugar cane area) where a small group, constituted into a trust, administers the property restituted in the name of the beneficiary community, but without the latter benefiting in any way whatsoever from the redistribution. Entrusting a production unit to a collective of labourers with a view to preventing the means of production from being dismantled can only succeed if the social relationships in the production actually change, and if sharing the value added benefits the largest number of people. If the entrepreneurial structure is maintained, the predictable drop in profitability (during the first stage at least) can only lead to a drop in salaries and to the break-up of the group.

The second point, maintaining exactly the same production system, questions the promoted development model. In the mind of the architects of the agrarian reform, particularly since 1999, a property transmitted as a whole (i.e., the land, the farm buildings, the irrigation infrastructure and the equipment) is perceived as indivisible, as a 'viable' business, the constituents of which must be transferred as a whole. This policy seems to rest on a double foundation. The first, justified, relies on the idea that there is no point in transferring land without also transferring the production means required for developing it, at the risk of repeating the same mistakes generated by so many agrarian reforms across the world. The second relies on the unchallenged dogma of the unique model of 'commercial' and supposedly 'competitive' farming, according to competitiveness criteria that are rarely explained in detail, but are de facto limited to profitability. The second point questions the development model put forward by the architects of the agrarian reform and, with them, by many South African actors from the industry.

The uniqueness of the technical model being promoted is also attributable to the 'agro-economic culture' of the consultants who are called upon for each new redistribution project, to elaborate a 'business plan' to be proposed to the future beneficiary that will be used in support of funding applications. Such a business plan invariably proposes a production model which is in every respect identical to that promoted in the past; motomechanised; specialised, with the actual separation of cultivation and livestock farming activities; a major consumer of farm inputs (on irrigated land), fossil energy and irrigation water; based on only one non-pluri-active household; and which relies for the main part on a salaried workforce.[19] These technical support packages are then immediately taken over by agricultural service companies (e.g. Riverside, Illovo, MGK) which have the know-how and the capital required for implementing the technical recommendations.

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In this regard, Lahiff (2007) highlights the fact that acquiring a whole farm is a condition imposed by the administration to obtain a subsidy or a loan, and that official opposition to the subdivision of property, anchored in South African history, has carried over to various regimes without being challenged.[20] He adds that 'alternative models, based on low inputs and smaller units of production are actively discouraged' (Lahiff 2007: 14).

The fact that white farmers volunteering to individually tutor 'emergent' black farmers is established as a model indicates, moreover, that there can be no question about changing such a 'model'.

Identifying action levers that promote black populations' development of production processes which create jobs and value added, are less costly for the community than those favoured in the past, and characterised by a less unequal sharing out of value added, seems like a particularly difficult task that nonetheless should take priority.

Yet, the study of the production systems identified in the six regions studied within the framework of this research programme gives a few interesting leads. Mixed crop–livestock production systems often give better results in terms of value added per hectare and job creation than systems specialised in only one production.

For example, based on the results of cattle farming (for the meat) in the region of Sezela (KwaZulu-Natal), one wonders whether systems combining the cultivation of sugar cane and cattle farming (which have definite outlets locally) should not be promoted, rather than reproducing and expanding sugar cane monoproduction (Chapter 7). The relative success of the small Jacobsdal-based cooperative mentioned earlier is largely attributable to the established mixed crop–livestock production system, which is far from regional standards, but requires less and less resources and employs the associates' workforce throughout the year.

'Modern' business based on employees

The other aspect of the model being promoted is of a social and organisational nature. Accessing the farming business and 'taking over' formerly white-owned farms means becoming an employer. In this regard, it is out of the question to lower oneself to the manual tasks required by farming, the idea being to deal with coordination, management, accounting and personnel management tasks. The promoted model is therefore entrepreneurial, with the production process relying very much on the salaried workforce.

This choice has significant consequences. It has been shown many times in this study that the very high level of agricultural incomes cleared by most 'commercial' farms did not come only from high labour productivity – enabled by privileged access to resources and to relatively good-quality equipment – but also and especially from the fact that the value added created is shared out unequally, most disadvantageously for the labourers and most advantageously for the return on capital and the remuneration

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of the farm manager (Chapter 10). To reproduce this social model is to reproduce the social relations inherited from the former regime; it is to found the profitability of future 'black' farms on a distribution of value added which is as unequal as it was under apartheid. In this regard, it is significant that emerging farmers, through the National African Farmers' Union, are opposed to any increase in agricultural wages, as are their white colleagues through Agri SA.

In the so-called 'commercial' farms, profitability – the capacity of the business to remunerate the managers as well as the capital invested (by the managers or other investors) – is privileged. As regards agricultural development, however, other economic indicators are more pertinent. The criteria of value added and factor productivity, those governing the distribution of value added and therefore labour and capital remuneration in particular, and those making it possible to measure job and income creation, turn out to be particularly interesting when comparing the various institutional forms of farming (for instance, family farms and agribusinesses in particular share the same productive space) (Cochet 2011).

Can the specialised, well-equipped capitalist or large-scale family-business farming model, operating also on the basis of a large salaried workforce for manual seasonal cultivation operations, meet the major challenges of the agrarian issue in South Africa? Faced with massive underemployment affecting rural areas and the entire economy in general, priority must be given to the creation of value added on the one hand, and to the distribution of a job- and income-creating value added on the other. Seen from this angle, maintaining the previous production model is no longer a cure-all remedy. Creating jobs no longer automatically means creating ('formal') salaried jobs, but can also mean creating a productive family activity that enables people to live better. This no longer exclusively means creating jobs that are necessarily insecure (flexible) within large specialised structures with increased needs in labour force during the peak periods of the work calendar, such as harvesting. Rather, it means looking for task complementarity and keeping the family workforce busy throughout the year, utilising diversified production systems (including outside the farming activity), less costly farm inputs and equipment, and giving more to work remuneration than to return on capital.

Conclusion: The need for radically challenging South Africa's present development model

The choices guiding South Africa's agrarian reform and the impasse it seems to have reached result also from the fact that South Africa is probably the first country in the world where the agrarian reform issue concerns an agrarian system which is already very much involved in a contemporary agricultural revolution. The 60 000 farms in the hands of white farmers in 1994 (around 40 000 today), which already had powerful motomechanised equipment, were largely specialised, had interests in upstream and downstream industries and were fully structured into a unique food-

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processing system. The main difference when compared to farms in Western Europe or even the United States resides in the high number of salaried workers, who are present because of their very low remuneration and the consequent maintenance of a large number of manual tasks (partial motomechanisation).[21] Under these conditions, it is clear that the issue of property division and land distribution in more equitable terms was going to be maintained. As soon as the need to prevent the means of production from being dismantled was asserted so as not to harm a dynamic exporting industry, the field of possibilities was reduced considerably, prior to any consideration of agrarian reform processes. It took French farmers several generations to accumulate, under favourable conditions and with the full support of the public authorities, the level of capital they have today within the framework of commercial farms, most of which are still family farms. How does one supply a large number of beneficiaries, and within a few years, the means to acquire costly equipment? In addition, how can former owners be indemnified at market prices? Was the only solution to meet the conditions for the simple transfer of a business from one segment of the population to another, involving no other technical or social change? This must also be recontextualised in a South African oligopolistic agricultural sector, at the level of primary production whether upstream or downstream from the industry.

Yet, the path taken did not prevent the production of farmlands affected by the agrarian reform from collapsing. Moreover, the time taken between making a land claim or redistribution claim, and the actual possession of the property, which can be several years, *necessarily* leads to degradation in the operating conditions (lack of maintenance, land lying fallow, and sometimes looting or vandalism). Seeking to circumvent this transition period through delaying mechanisms always results in extending the past conditions in one way or another, and in trapping beneficiaries into a type of production they do not choose and which does not match their qualifications, their projects or their means. In other respects, no positive objective was reached in terms of affected areas or numbers of beneficiary families. Underemployment is reaching alarming levels in the rural areas of the former homelands, and conflicts linked to resource access are still tainted by violence.

Is another way possible? Yes, undoubtedly, but it is subject to deliberately getting out from under the yoke imposed from the very first day by the selected development model, which is based exclusively on commercial farms stemming from the previous period. The main break to be carried out needs to be conceptual, and calls for radically challenging the development model followed up to now.

Notes

1 On a lease contract signed between one of the beneficiaries and the CPA, one can read, for example: Rent: R608/month. It concerned a 16-ha irrigated farm, with a three-year renewable rental (i.e., €55 on average per year).

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2 An example was given to us concerning a rent of R16 000 per month (around €1 600/month or €19 000/year) paid for 91 ha, a rent equivalent to €190/ha/year. It would seem that some of the former owners only managed to rent a portion of their former property (interview with the manager of the CPA in question).

3 Interview with a beneficiary of the land restitution process who obtained a 16 ha irrigated piece of land from the CPA.

4 At the time of the research, 1 euro was about 12 rands.

5 Two testimonies in agreement, taken down by Regourd, refer to the fact that these funds were embezzled by community leaders.

6 These lands, with a surface area of 40–80 ha, cannot be sold because they are too small to undertake extensive animal production. In this case, the state still develops an irrigation system on a small section of the land or sets up a vineyard before redistributing it.

7 This provincial bank supplied financial services to black people from KwaZulu during apartheid.

8 For the same reason, the government does not consider NFGs real beneficiaries of the agrarian reform. Some of their farms are even affected by land restitution claims.

9 In a 'Proprietary Limited' or 'Pty Ltd' company, the capital is divided between a maximum of fifty shareholders. These shares cannot be put up for sale publicly. Furthermore, the company cannot be listed on the stock exchange and shareholders have a limited responsibility.

10 However, there are cases where the beneficiaries can buy the farm if they receive authorisation from the Department of Rural Development and Land Reform (which is the owner of the farm when it is first bought out). This possibility has not been invoked in the case of Beneeva.

11 These communities are still waiting for the restitution of the other farms for which they lodged a land claim.

12 In fact, it was forbidden to convert these lands into residential areas. However, we observed plots of land formerly cultivated with sugar cane which are today lying fallow. This can be explained by the fact that Illovo, for political reasons, prefers not to bring supply agreement violations before the courts.

13 These tensions are taken seriously by the sugar industry, which has hired the services of an arbitrator to try to solve the problem.

14 The Water Act of 1956 is the expression of this compromise (Blanchon 2009).

15 Moreover, there is something paradoxical about witnessing the development of white ecological movements defending the reserved flow policy – by putting forward the protection of the aquatic life in the river – while opposing WUAs (Blanchon 2009).

16 As the water hatch on the canal is always locked open, the farmers have to take their quota even if they do not use it, and even if it means returning a large portion of the water into the river situated downstream. White farmers situated upstream only use 25 per cent of their quota, on average, with the remaining 75 per cent going back directly to the river. The quantities of water thus wasted are in the region of 12.5 million m^3 (Regourd 2012: 66).

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17 The first being access to agricultural land.

18 For more information regarding the latest Acts and policies, see Chapter 2.

19 Concerning poultry farming, the models produced are in the same vein, as found by Anjuère and Boche (2009; Chapter 4) in the Limpopo province or by Regourd (2012) in Hazyview (Chapter 5).

20 The Subdivision of Agricultural Land Act (No. 70 of 1970), prohibiting any division of property to prevent farm workers from accessing the land, has to date still not been abolished (Anseeuw & Mathebula 2008).

21 Another difference resided undoubtedly in the close correspondence between farm and property, the latter being historically and mainly in the hands of farmers.

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12 *Contract farming and strategic partnerships: A promising exit or smoke and mirrors?*

Ward Anseeuw, Sandrine Fréguin-Gresh and Nerhene Davis

This chapter situates itself at the crossroads of two core observations previously detailed in this book: the difficult integration and the lack of market access for smallholder farmers; and the high level of land reform projects, whether they are restitution or redistribution cases, that fail (at least from an economic point of view). It is in this framework that the South African government is promoting partnerships between smallholders and large-scale farmers and agribusinesses as 'new' instruments and production models for development.

> Partnerships refer to the range of relationships, which are actively entered into, on the expectation of benefit [by the private sector and smallholders and/or communities]. Partnerships may be formal schemes, contracts and agreements or informal arrangements; in some cases they may involve the brokerage or mediation of third parties, such as government agencies or NGOs [non-governmental organisations]. In some contexts, several of these forms of collaboration may overlap. (Mayers & Vermeulen 2002: 2)

This chapter intends to contribute to ongoing debates about the prospects of such types of instruments to provide viable opportunities for small-scale farmers in South Africa and whether or not they represent genuine opportunities for agrarian transformation in the country. Do such instruments represent effective tools for smallholders to overcome the obstacles related to the country's restructured and liberalised agrifood markets and its overall dualistic environment?

Based on two partnership case studies, one on contract farming in the citrus sector in Gauteng and another on a strategic partnership model in Limpopo, the chapter argues, however, that these instruments are not a panacea for smallholders. They mostly involve and benefit the already better off who have benefited from significant public support and can lead to a loss of control and decision rights over production and resources for the smallholders. The prospects of such instruments for effecting profound agrarian change are hence very limited. The first sections of this chapter detail the contract farming and the strategic partnership cases, respectively, presenting their background, their set-up and their (potential) benefits. The following sections then critically assess them and offer some concluding thoughts regarding these instruments within the broader framework of South Africa's agrarian transformation.

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Contract farming and the prospects of inserting small farmers into the juice-processing industry (the Winterveld case in Gauteng)

Following the dismantling of international commodity agreements in a context of globalisation, agrifood markets have been restructured, becoming increasingly consumer-driven and vertically integrated (Vorley et al. 2007). This is also the case in South Africa, where the restructurings of markets have resulted in, besides other things, the rise of centralised procurement and supermarkets in developing countries (Biénabe & Vermeulen 2007). In that context, market integration is seen as an opportunity for the smaller-scale farmers as it represents a possibility to access new restructured markets while reducing transaction costs and increasing their production and farm income (World Bank 2007). As such, among other integration mechanisms, contract agriculture – although it may be selective, excluding and subjecting the smaller and least-endowed farmers to high risks and agribusiness normalisation (Poulton et al. 2010) – is generally considered an attractive way for integrating small-scale farmers into the open-market economy (Key & Runsten 1999). In this context, contract agriculture has been considered a tool for integrating black smallholders into the mainstream agricultural economy and is presently recognised as a planning priority in South Africa.

High expectations thus occur in Winterveld (Gauteng), one of the largest areas of black settlement in the former Bophuthatswana homeland (Figure 12.1), where 145 members of the Winterveld United Farmers' Association (WUFA) have engaged in a contract with a local citrus processor since 2007. It is a unique case as, during the 1940s, the region had been subdivided into 5 to 10 ha plots, which were sold to black farmers on freehold basis.

Background of the contract agreement

WUFA was created in 1967 by two well-known local leaders, a clergyman and an agricultural scientist who was also the president of the National African Federated Chamber of Commerce and Industry (NAFCO) for twenty-five years. However, at that time, agriculture in the region faced major constraints (displacement and resettlement of nearly 2 million labourers into the area owing to forced policies, and the inauguration of several border industries and mines within a 20 km radius) that contributed to the decreasing interest in agriculture and in WUFA, which remained inactive for thirty years.

It was only in 2002, when one of the founding leaders of the producers' organisation used his retirement package, networking and knowledge of citrus to revitalise agriculture in Winterveld, that WUFA effectively started its activities. It initiated the Winterveld Citrus Project, a membership-based association that managed to mobilise funds from various donors, including the Department of Agriculture, Forestry and Fisheries (through the Comprehensive Agricultural Support Programme and the Agricultural Business Chamber Co-operative Development Initiative), the Tshwane

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Figure 12.1 Location of Winterveld, Gauteng

Source: Authors

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Metropolitan Municipality, the National Development Agency, the Tshwane University of Technology, the Promotion of Agribusiness Linkages Training and Technical Assistance Funds, a local supermarket, and other private donations from a neighbouring community. Most of the funding helped the smallholders to engage in citrus production: de-bushing of the area, purchasing a borehole irrigation system, fencing, construction of a packing house, purchasing of machinery for packaging, and farm equipment. Other initiatives provided administrative support and technical and business training.

In 2003, the leader of WUFA convinced a local juice processor (an acquaintance of the chairman during the time he was president of NAFCO) to receive supplies from the (black) smallholders. Later that year, the processor started providing technical assistance to the project and, in 2007, it even granted black equity ownership options to farmers involved in the project. This approach resulted in the company being granted AgriBEE status, allowing it to benefit from affirmative action incentives related to the broad-based black economic empowerment policy framework. Small-scale (black) farmers thus became shareholders, allowing them to participate in the governance and executive control of the processor.

Contract characteristics

Based on a one-year renewable formal agreement, the contract mainly deals with issues related to cultivation practices, technical assistance, modalities of the deliveries (timing) and payment according to quality specifications (Figure 12.2).

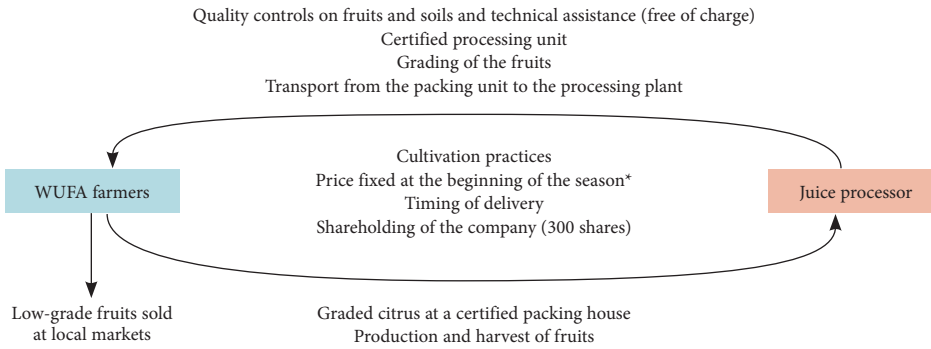
The processor adheres to various certifications (GMP, HACCP and Iso9001). Compared to the very stringent standards and certification requirements for citrus export, the standards for processing are less restrictive and therefore the terms of these contracts mostly reflect production stipulations (inputs to be applied according to a related calendar). The processor engages in providing assistance through regular visits from experts and quality controls of produce and soils. The processor does not provide any resource to the farmers. From their side, as shareholders, farmers deliver a certain quantity of ripe fruits at a fixed price. Quantity, quality and prices are determined through tested samples by experts from the processor. The contract and the payment are held at WUFA level, while farmers are paid pro rata for their deliveries, which are recorded by WUFA.

Since 2007, the farmers have harvested an average of 1 000 tons of citrus a year from 70 000 trees, of which 30 per cent is sold to the processor. The remainder of the fruit is supplied to a local retailer or traded on the informal markets in the settlement. Farmers are looking into the possibility of accessing high-quality fair trade export markets under their 'Bosele' brand.

Enhancement of production capacity: Empowerment, access to resources and capital

In a context where high-value crops necessitate input levels exceeding the financial resources of smallholder growers, and where the state has withdrawn from direct

Figure 12.2 Terms of the contracts linking the WUFA farmers with the processor



Note: * Based on a combination of preliminary tests.
Source: Authors

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support, this Winterveld citrus case study shows that contract agriculture can play an important role in smallholders' empowerment and access to resources, services and capital. In many cases, smallholders are unable to fulfil, through their own means, the costly requirements for producing according to the set standards. As such, contracts can enable smallholders to access modern markets in several ways.

Firstly, contracts enable the Winterveld smallholders to access quality seedlings and adequate inputs, and to be able to provide adequate varieties and quality fruits. Although inputs often have to be paid for, the related costs being deducted from the final payment, contracts enable them to access the right inputs at the right time and, thus, to comply with the stipulations required by the standards and certification procedures. Contracts also help the Winterveld smallholders to access funds, thanks to the agribusinesses' provision of direct loans, or of guarantees to banks, as has been done by the juice processor in this case. Furthermore, the contracts enable the smallholders to benefit from quality services. As in many contracts, agribusinesses provide frequent (and in this case, free of charge) technical, and in some cases even financial and administrative, assistance. Lastly, the contract involves capacity building and skills transfers.

Secondly, besides empowerment at production level, the contracts directly facilitate market access. The latter is of particular importance in South Africa where market access (or lack of it) represented a tool of the apartheid segregation policies. However, in addition to the emergence of standards, market restructurings have kept the large majority of doors closed to new entrants. In many cases, the public entities were privatised through the conversion of state ownership into private shares, mainly controlled by the then well-established, larger-scale and often white commercial farmers (Anseeuw 2004). As such, not only do contracts enhance the Winterveld smallholders' production bases in volumes and quality (already allowing them to compete with other farmers), they also open up market channels. Although it was not the case in the Winterveld, smallholders can be 'empowered' as shareholders, allowing them to participate (although partly) in the governance and executive control of the firms, transforming their position from 'market users' to 'market makers'.

Thirdly, the contracts enable the Winterveld smallholders to resolve the complex logistics issues with regard to the transportation from the fields to the packing houses and/or processing units. In addition, the labelling and traceability requirements, two major concerns in modern markets, are organised by the certified packing house. This has enabled the final shipment to international markets, as it is arranged by exporters who are also the only ones licensed by national authorities to conduct exports. Exporters recoup their costs by deducting the requisite charges from the gross amounts prior to paying the farmers.

Thanks to the combination of these factors, the contracts enable the Winterveld smallholders to produce according to the required quantity and quality, and can be

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considered, at least in certain ways and in theory, as positive instruments in a context of lack or insufficiency of public support, a constraint clearly faced by smallholders.

Strategic partnerships in South Africa's land and agrarian reform: The New Dawn joint ventures in Moletele (Limpopo)

Strategic partnerships constitute a second instrument, particularly used in the framework of South Africa's land and agrarian reforms. Also part of a wider response to the challenge of empowering previously marginalised groups and transforming the racially stratified economy inherited from the apartheid era, they are specifically used to revitalise struggling land reform projects. The term 'strategic partnership' is used here to signify a joint venture or other form of collaboration between an established commercial firm and a new (or 'emerging') group of workers, shareholders, small farmers, entrepreneurs or community members with limited commercial experience and little or no access to finance or leading-edge markets. Such collaborations typically have social as well as economic objectives, including the empowerment of workers, women or other previously disadvantaged groups, the transfer of skills, accelerating career paths, and the creation of trading opportunities for small and micro-enterprises (Lahiff et al. 2012).

Early experience with restitution revealed that communities faced a range of challenges in terms of agricultural production and the distribution of benefits to group members, including lack of working capital, lack of expertise in the areas of production and marketing, abuses of power by local elites and internal conflicts (Hall 2008). Although considerable financial support was initially provided by the state, this was generally not accompanied by the long-term technical support that new owners required. This led the national Department of Land Affairs (later the Department of Rural Development and Land Reform) and the Commission on Restitution of Land Rights to explore ways in which necessary skills and resources could be made available to claimant groups in order to ensure continued agricultural production on restituted land.

Background of the New Dawn strategic partnership in Moletele

Between 1920 and 1970 the Moletele were forcefully removed from their ancestral land in the Hoedspruit area (south-eastern part of Limpopo). The majority of them were relocated to parts of the Bushbuckridge area (now in Mpumalanga). The Moletele people initially resisted and fought against colonial penetration into the area, but with the death of their leader Kgoshi Aneas in 1972, they realised that their resistance was futile and the last of the Moletele were relocated. The Moletele officially registered a claim in 1992, which includes 516 high-valued agricultural farms. The claim was gazetted in 2004 and in July 2007 the first twenty-eight properties were restored to the community.

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The Moletele CPA engaged in several strategic partnerships (New Dawn, Dinaledi, Batau and Richmond) (Davis 2015), with New Dawn being the first, utilising Strategic Farm Management as the operating company. New Dawn manages seventeen of the twenty-eight properties restituted to the Moletele CPA during phase 1. These properties largely produce mangoes, citrus, seed maize and sweetcorn. They are well established with efficient irrigation systems, packing houses, easy road access to the properties, a mango atchar processing plant and two mango-drying plants. The properties on the New Dawn farm cost the government about R44 million to buy from previous owners. It should be noted, however, that R18 million of the R44 million was paid for infrastructure: pack houses, houses and facilities, which translates into a land value of only R26 million (Davis 2015).

Characteristics of the strategic partnership

These initiatives take the form of joint ventures where ownership of the land is transferred to the claimant community, which enters into agreements with agribusiness partners who commit themselves to managing the land on behalf of the community on the contractual understanding that benefits are shared between the partners (DLA 2008). Before land is handed over, the community is required to organise itself into a CPA which has to develop a business plan in cooperation with government or contracted consultants. In theory, the model should respond to the demand from claimant communities for technical and financial assistance in managing large agricultural enterprises. For private-sector partners, some of whom are former owners of the land in question, it might present an opportunity to preserve or even expand commercial activities within the agrifood sector, albeit under new conditions (Lahiff 2007; Lahiff et al. 2012) (Figure 12.3).

The responsibilities and specific rights in the newly established operating company are written into the shareholder agreements. Stipulated in all of the Moletele shareholder agreements is the fact that the dividends which the operating company declares will be paid to the shareholders proportionally to their shares, thus constituting what could be considered a 'proper partnership', where risks, investment and dividends are allocated in terms of each partner's share in the company. In the case of New Dawn, the original shareholders' agreement stipulated that the Moletele CPA would have a 51 per cent share in the company, the strategic partner would hold 47 per cent and 2 per cent was originally reserved for a workers' trust. The 2 per cent allocation to a workers' trust has in the meantime been revoked, resulting in the CPA holding 52 per cent, and the strategic partner 48 per cent, of the shares. A decision was made by the CPA to rather give bonuses to workers, as they earn salaries and therefore already benefit from the partnership arrangements. The shareholders' agreement also stipulates that, in addition to shares in the company, claimant communities should receive rental payments for the use of their land from the operating company. The shareholders' agreements indicate that the rent for the land is set at 1.25 per cent of the land purchase price (transfer value of the land)

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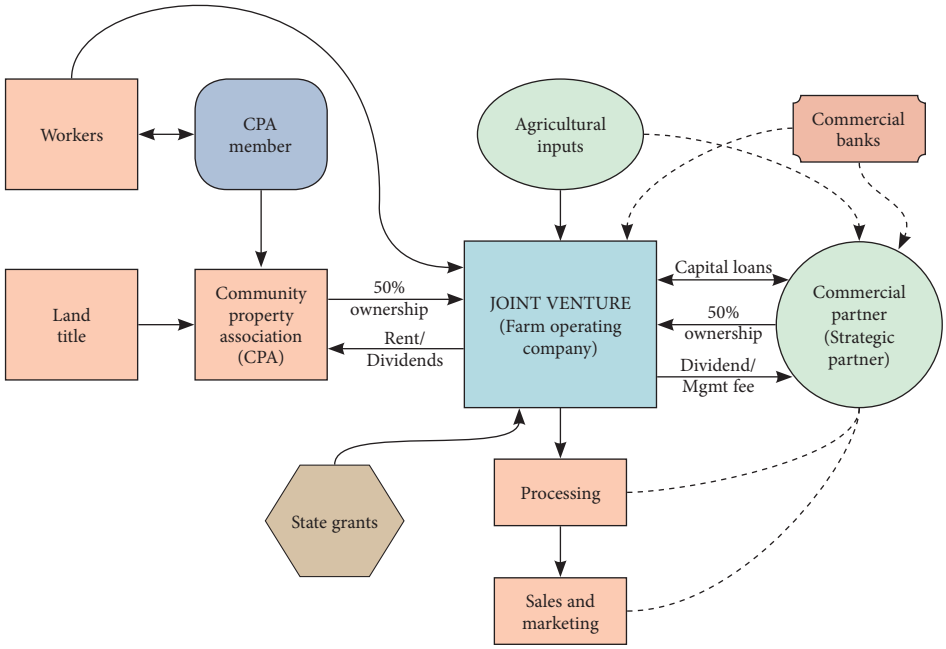
Figure 12.3 Key elements of a typical strategic partnership/joint venture



Note: Dotted lines indicate potential relationship.
Source: Lahiff et al. (2012)

and is supposed to be paid on an annual, monthly or even quarterly basis. Lastly, as part of the strategic partnership contract, skills are to be transferred to the CPA and farm workers.

As in the case of strategic partnerships in the rest of Limpopo, it is evident that, even though the majority shareholding is with the Moletele CPA, the executive administration and management decisions rest with the strategic partners. For this responsibility, the strategic partner then charges the operating company administrative fees. In terms of the New Dawn shareholder agreements, this fee, when combined with the salaries of key managers provided by the strategic partner, should not exceed 8 per cent of the turnover of these operating companies. The strategic partners are also tasked with obtaining machinery and all the necessary equipment on behalf of the operating company.

The CPA and the strategic partners are each represented by three directors on the shareholders' board of the New Dawn operating company. Also on this board are representatives from government (Department of Rural Development and Land Reform or Regional Land Claims Commission) and a representative from the main financier of the enterprise. Government is not a shareholder, but these

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representatives are on the board to safeguard the CPA's interests while it acquires sufficient capacity to engage on an equal basis with the strategic partner (Limpopo Department of Agriculture 2008).

Skills transfer, employment and revenue creation

Although decreasing significantly, production of citrus, mangoes, litchis and vegetables is ongoing (Table 12.1)

Beyond the maintenance of the project's production basis, a first major (potential) benefit for the community is labour creation. In order to ensure that benefits accrue to the members of the Moletele community, it has been agreed that at least 30 per cent of the workforce on the farms managed by New Dawn should be appointed from the Moletele community. But it was emphasised that this job quota can only apply to new jobs created and should not in any way be seen as a threat to the existing workforce who may not be members of the Moletele community. At this stage, 980 people are employed.

Second, a key aspect of the New Dawn agreement is that the strategic partner must embark on and devise a programme that will ensure the speedy transfer of skills to suitable candidates from the Moletele community, who will receive training to prepare them for eventual takeover of the company. The strategic partnership agreement is for a period of fifteen years, after which the Moletele CPA should buy out the 48 per cent ownership stake from Strategic Farm Management. It is assumed that after fifteen years of this partnership, enough members of the community will have been sufficiently trained and capacitated to take over management of the farms.

Third, another way of channelling benefits to the members of the community is that the CPA will use revenue from the business to initiate projects for the benefit of the

Table 12.1 Summary of the types of commodities and sizes of land under production in the Moletele case

Joint venture company	Total ha managed	Current ha under production	Production	Employment created
New Dawn Farming Enterprise	1 019 ha	405 ha	Citrus, mango, guava and paw-paw	123 permanent and 390 seasonal
Dinaledi Farming Enterprise	686 ha	355 ha	Lemons, grapefruit and valencia	650 permanent and seasonal
Batau Farming Enterprise	855 ha	157 ha	Mango, citrus, litchi and vegetables	72 permanent
Richmond Estate	2 434 ha	590 ha	Grapefruit, valencia and mango	135 permanent and 440 seasonal

Note: The difference between total ha managed and current ha under production indicates the potential of the farm, as well as portions that cannot be farmed owing to the terrain.
Source: Moletele CPA AGM Minutes, 2010

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community. The business plan of the strategic partner, Strategic Farm Management, commits to the following:

> A shareholders agreement and a management contract that will regulate reciprocal obligations and privileges; … incentives for ensuring that relationships between the management structures prosper; … and a focus directed at maximising value generation, growing the enterprise to create the optimum job opportunities, participation in decision making and management and finally sharing in wealth creation. (New Dawn Farming Enterprises 2006: 16)

Contract farming and strategic partnerships: A critical assessment

The analysis of instruments such as contracts and strategic partnerships shows some encouraging results from a smallholders' perspective: maintenance and even improvement of agricultural production, access to services (training, capacity building, technical assistance) and to resources (production factors, inputs, credit, information), employment and revenue creation, and development of new opportunities to participate in competitive markets which are increasingly being subjected to strict standards.

However, the two case studies presented, complemented by an extensive literature, also provide counter-arguments, emphasising that such instruments are not a panacea, particularly for smallholders. These are often presented as *the* solution that will offer justice to smallholders while still maintaining high levels of production, but the intended outcomes and assumptions of these models are being increasingly questioned (Spierenburg 2012). Concerns about the underlying assumptions of these models have been emphasised by Mayson (2003), Derman et al. (2006), Lahiff et al. (2012), Greenberg (2010, 2013), and Ducastel and Anseeuw (2013). Several aspects can be highlighted here.

A few success stories, concerning only a limited number of often better-established farmers

Positive or negative, the results of these instruments and models are diminished by the fact that very few are operational and sustainable and that they concern only a few, often already better-established farmers.

With regard to the strategic partnerships, for example, while many are still at an early stage, evidence is emerging that many are facing difficulties in establishing themselves and that a number have already collapsed (e.g. Davis 2015; Lahiff 2007; Lahiff et al. 2012). The New Dawn strategic partnership was, and still is, heavily dependent on cash flow from the Department of Rural Development and Land Reform to ensure its economic feasibility. As a result of these rather negative outcomes, failed and struggling projects have been resuscitated by means of alternative partnership

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arrangements, with strategic partners now expressing a clear preference for the implementation of somewhat more simplified, inclusive business models.

Directly related to the latter are the scarce benefits accruing from rental payment and dividends, which results in growing discontent, as is seen among the Moletele community members. A few members of the Moletele CPA acknowledge the financial difficulties of New Dawn, but since production is continuing on the land, suspicions are surfacing. By 2010, New Dawn had made a tremendous effort to pay some of the rental income owed to the CPA, but not all of it has been paid (Moletele interview). The income statement for the CPA reflects no rental income for 2007 and 2008, whereas for 2009 and 2010, R451 203 had been received, which is still less than the anticipated R550 000 as stipulated in the lease agreement. Also in terms of benefit flow, which takes longer to materialise, to date no dividends have been declared for the New Dawn partnership (Davis 2015).

In addition, the number of such projects remains low, making it marginal with regard to the broader restructuring of the agricultural sector. According to an evaluation of the Recapitalisation and Development Programme, which promotes the development of such partnerships, South Africa counts about 300 strategic partnerships. Similar observations apply to contract farming, especially when smallholder farming is concerned. Although quantifying the scale of contract agriculture is difficult, whatever the level of analysis, Vermeulen et al. (2008) in a recent study estimated that almost 80 per cent of the volumes of fruits and vegetables processed by the South African processing industry (21 per cent of the production), and between 70 and 100 per cent of the products sold in supermarkets, were supplied under contract, but only 5 per cent of these volumes involved smallholders. Consequently, compared to the existing 40 000 commercial farm units and 1.2 million small farms (DAFF 2010), only 8 per cent of South Africa's farmers and 2.5 per cent of smallholders are engaged in contract farming. In addition, analyses by Fréguin-Gresh and Anseeuw (2014) show that only certain types of farmers – the already better-off and better-integrated ones – are engaged in contracts. The large majority are being excluded, as shown in the Limpopo case study detailed in Figure 12.4.

Unequal power relations and skewed benefits, between partners and communities and within communities

The extent of the benefits is also related to the existing power relations. One of the first assumptions questioned by Spierenburg et al. (2012) refers to the notion that contracts and strategic partnerships are 'real' partnerships in which all partners are equal and have mutual goals. These authors caution that the unequal power relations between private-sector and commercial farmers cannot be 'assumed away' and that this situation poses a real threat to the long-term viability of these arrangements.

Commentators seem to share a concern regarding the nature and extent of the benefits assumed to reach the communities involved. The stipulated/intended

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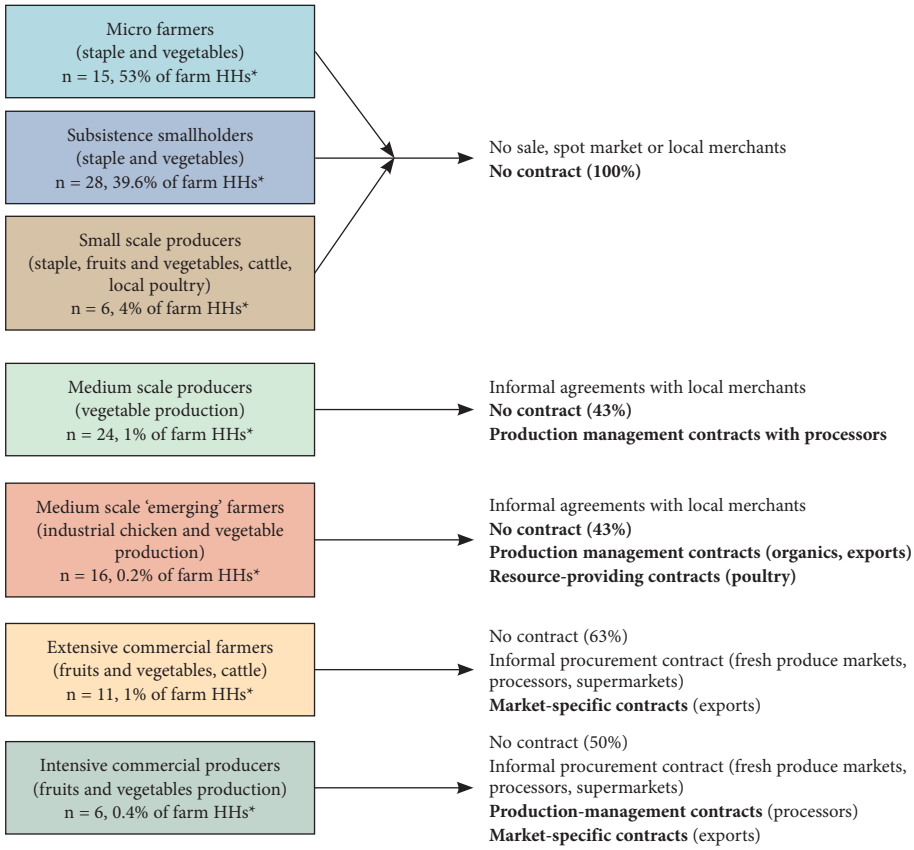
Figure 12.4 Types of farm households and participation in markets in Limpopo



Notes: * Number of detailed questionnaires to a random group of respondents allowing for the capturing of the diversity in household types. Based on the results of the 239 short interviews conducted and being representative of the population in the study area.
Source: Fréguin-Gresh & Anseeuw (2014)

benefits in terms of receiving rental for their land, job opportunities, profits, correct prices and dividends are linked to realistic contracts and/or business plans, which in some instances are not in place (Lahiff 2008), or to contractual arrangements and shareholder agreements which are skewed. As such, Spierenburg et al. (2012) question the ability of beneficiaries – whether as individuals regarding contract farming or as a CPA in the framework of strategic partnerships – to negotiate contracts and agreements with private-sector partners in the best interests of communities. They question the capacity of individual and subordinated farmers, or of an already beleaguered CPA as a landholding entity, to apply leverage on the commercial partner (Spierenburg et al. 2012).

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This bias is emphasised though intra-community dynamics. Fraser (2007) highlights unequal power relations and posits that inequality also translates into challenging power dynamics within communities, whereas James (2007) is concerned with the role of 'brokers' in communities who are able to step in and dominate the process and outcomes when restitution projects are negotiated. Power disparities within beneficiary communities could thus result in local elites presenting themselves as the legitimate voice of the community. When these elites choose to align themselves with what could be construed as a 'business discourse' aimed at ensuring the continuation of large-scale commercial farming activities on the restituted land, the voices of less strategically placed individuals could end up being muzzled. The power asymmetry and the complexity in terms of negotiating these partnerships could thus intensify the fading of voices from those unable to engage in terms of the dominant business/commercial farming discourse and those less strategically placed, but calling for restorative justice, in terms of simply being allowed to access land, either for settlement or for farming on a subsistence basis (simple reproduction).

Transferring control and decision rights over production and resources and questioning effective empowerment

Depending on the degree of integration (and thus of risk sharing), contract farming models, and strategic partnerships in particular, are characterised by the transfer of decision-making rights. From the agribusiness point of view, the transfers of decision rights offer them an opportunity to expand their activities, to access resources and to manage production at farm level, directly or indirectly. This results in the agribusinesses having major control over production, with the contract shifting most decision rights and risks to them. In many cases, smallholders lose control over the broader production-related decision processes. They are thus incorporated within production models and chains in which they represent only an isolated element and on which they have no orienting power. Generally, the technical capital used does not belong to them, but is made available by the management and operational company, which not only creates a subordinated position, but also develops a dependency situation, since smallholders become unable to withdraw from these relations without losing access to the necessary finances and inputs. The transfer of autonomous family farms into an integrated unit within an entrepreneurial structure necessarily modifies the relations with the agricultural activity per se (Anseeuw et al. 2011).

The New Dawn operating company is illustrative of the latter. Although jointly owned by the claimants and the strategic partners, its day-to-day operations and management of the company are vested in the hands of the strategic partner, who has full control of financial and operational matters. Even if the directors of the operating company also include members selected from the Moletele CPA, for now, the strategic partners' experience and knowledge of the market conditions make them de facto decision makers in the partnership.

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These assessments corroborate the results of partnerships which have been analysed in the different regions included in the framework of this book and described in Chapters 4 to 9. For example, in the sugar region of Sezela (KwaZulu-Natal), as studied by Sophie Bièque and Nadège Kippeurt (Chapter 7), the two cases examined describe the existence of a supply agreement with Illovo. The prospect of benefiting from government support intended for sugar cane planters, as well as the facilities offered by Illovo to planters who do not have equipment or capital at their disposal, are factors inciting the beneficiaries of the restitution process to pursue the cultivation of sugar cane. Yet, this apparent support has the pernicious effect of keeping planters permanently indebted to the sugar company. In the two cases studied, not only does the restituted farm seem caught up in a system compelling it to produce sugar cane, despite all the handicaps (lack of experience, skills and capital), but the beneficiary community also does not benefit from the situation. Believing, or being forced to believe, that they share a common interest with the Illovo sugar company, the beneficiaries of restitution programmes find themselves trapped in a system of sugar cane monoproduction, to the detriment of a production system diversification that, by creating more jobs and value added per unit area, would be far more in keeping with their interests.

This situation highlights the need to fully interrogate the expectations, interests and motivations of the actors involved, and to question the sustainability of contracts, economically, politically and socially, and the relevance of the 'empowerment' process. In line with large-scale commercial farming rhetoric, the partnership model often results in the consolidation of land parcels, which also opens up an avenue for strategic partners to consolidate and rationalise production in a way that was previously not possible. Critics thus warn that these types of relations, partnerships and joint ventures could become ways for commercial farmers and companies to expand their control over land and agricultural value chains (Mayson 2003).

Genuine capacity of the smallholder–agribusiness model questioned

These instruments and partnerships, based on linking smallholders to agribusinesses and large-scale farmers, are often promoted (even by the government) as an alternative to state support. The move towards private-sector involvement in South African land and agrarian reforms clearly reflects 'dominant development thinking' – not only in southern Africa, but also globally (Brinkerhoff 2002; SLSA Team 2003) – that market-orientated strategies and private-sector involvement should be regarded as the basis for future economic growth (SLSA Team 2003: 1). Private-sector involvement in development projects is thus increasingly seen as a way of meeting social justice requirements, while at the same time maintaining productivity and profits (Brinkerhoff 2002).

The fact that the described contract farming and strategic partnership cases still significantly rely on government support, questions the very nature and the

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applicability of these instruments. In both cases, besides direct (financial) support, the government engages in the negotiation, establishment and monitoring of the contractual arrangements. It can also intervene as mediator when conflicts or contract breaches occur. Other policies assist the contract formation and ensure standards. For instance, the trade and agricultural development policy, and the biosafety and biosecurity policies, promote strategic partnerships/mentorships between smallholders and large-scale farmers. Moreover, the Cooperative Development Initiative encourages farmers to form cooperatives, making it easier for them and the agribusiness to engage. Even if the role of the state has evolved, it seems that the private sector is not in a position to substitute for government, even for core economic activities.

By the same token, Greenberg (2013) contends that the uncritical promotion of such models could be construed as representing the South African state's assumption that commercial farmers do possess the skills necessary for smallholders and communities to be successful in agriculture. The idea of linking smallholders to large-scale farmers or agribusinesses transmits the idea that current commercial farming practices should be regarded as the benchmark for the kind of agriculture that the restitution beneficiaries should be aspiring to.

Fraser (2007) and Spierenburg et al. (2012), on the other hand, note that the commercial/strategic partners seemingly did not mind this 'added responsibility'. They point out that most of the white commercial farmers generally welcomed the introduction of these models as it allowed them the opportunity to access government funds in one of the least subsidised agricultural environments in the world. The chairperson of the white commercial farming group which is currently resisting the Moletele land claim also postulated in our interview that these partnership initiatives were generally perceived to be a possible 'bail out' for already failing white commercial farmers, without caring about the (potential) success of the initiatives (Davis 2015).

Contract farming and strategic partnerships: Promising exit or smoke and mirrors?

The analysis of partnerships between smallholders and large-scale farmers and agribusinesses, promoted as a solution for the stagnant agrarian transformation of the country, emphasises some encouraging results from a smallholder's perspective: the improvement of agricultural production, access to services (training, capacity building, technical assistance) and to resources (production factors, inputs, credit, information) and the development of new opportunities to participate in competitive markets, especially those subject to strict standards.

However, this chapter and some of the cases described in Chapters 4 to 9 also provide counter-arguments, emphasising that contract farming is not a panacea,

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particularly regarding these smallholders. The current number of smallholders involved in these partnerships, whether contract farming or strategic partnerships, remains limited. The engaged farmers, who are grabbing most of the benefits, are those who are already better off or who tend to be elites within the community. These observations lead to a questioning of the effectiveness of such instruments overall, and for smallholders in particular. In addition, the continual need for government and public support questions the core utility and relevance of these instruments, which are promoted in order to substitute for the state in a liberalised and deregulated economy.

Additionally, the transfer of production management decision-making processes to agribusinesses, the latter's amplified control of land resources, and the very few effective benefits (especially in monetary terms) for smallholders and communities, all lead to the need to fully examine the expectations, interests and motivations of the stakeholders, and to question the economic, social and political viability of such partnerships for sustainable and equitable relationships and for mutual benefits.

On the basis of these observations, the partnerships promoted as instruments for presenting a solution for smallholder development do not seem to constitute a promising answer to South Africa's agrarian transformation. On the contrary, they rather represent smoke and mirrors as they do not present effective tools for broad-based smallholder participation in the agrarian economy, nor do they have the capacity to profoundly reform South Africa's agricultural sector and agrarian society. This confirms findings by Spierenburg et al. (2012), who state that although the partnership model was presented as the vehicle that would foster the transformation of the South African agricultural sector into a more equitable one, it is also seen as an expression of the state's promotion of the hegemony of large-scale commercial farming. The promotion of these instruments and the establishment of such partnerships were the result of an important policy shift in emphasis, from land access by claimants and the profound restructuring of the sector in favour of previously marginalised populations, to the maintenance of agricultural productivity (Derman et al. 2006). The objective of the South African government to transfer its post-settlement support responsibility to commercial partners, in the name of efficiency and economic liberalisation, thus goes along with the maintenance of the present dual and racially segregated agrarian structures.

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13 *Far from grassroots agrarian reform: Towards new production models, increased concentration and the export of the South African model*

Ward Anseeuw, Antoine Ducastel and Mathieu Boche

> 'Transformation' was the clarion call of the transition of 1990–4, on the lips of all those who hoped, or claimed to hope, that historic change was on the agenda to overcome the inheritance of South Africa's racialised capitalism and its massive inequalities. (Bernstein 2013: 45)

The elements presented throughout this book show that transformation is yet to be achieved, with very little structural change currently occurring. This being said, transformation has taken place, if not always in ways predicted. The expectations regarding the implemented changes, embedded in the dismantling of the state marketing system within a broader deregulation and liberalisation process, should create healthy competition in the spaces opened up by the abolition of the apartheid state monopolies (see Chapter 2). With the support of mainly land reform programmes, the newly entitled black farmers would not only have land restituted and redistributed to them, they would also be enabled to access services and markets in a free and open economy. Officially, access to land, agriculture, and commercial agriculture in particular, is thus possible, but it has to be accessed at current market prices. Adopting a market-led reform makes it possible, according to the then and following ministers in charge of agriculture, land and rural development, to underscore the necessity of maintaining national productive capacities – in order to ensure economic stability – without neglecting the greater equity imperative. Such an approach is also the least costly, the easiest to implement and, above all, represents a condition for benefiting from the support of international organisations (the World Bank in particular) and maintaining investor confidence (Anseeuw 2006).

Within this policy and macroeconomic framework, changes have mainly occurred in the predominantly capitalistic section of the agricultural sector. Not only have upstream and downstream private activities undergone significant concentration in some branches and commodities since the end of apartheid (Chabane et al. 2008), primary structures have transformed into new production models engaging corporate structures and, more particularly, corporate capital. These restructurings began around 1994, but are ongoing, in particular within the framework of the new interest in agriculture, globally as well as in South Africa. Developing rapidly and according to diverse forms, these models are not only leading to a corporatisation

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and financialisation of South Africa's agricultural sector, but are also contributing to the export of the South African model to the rest of the continent.

This chapter will present these transformations, referring to changes to the social relations of production and reproduction within South Africa's agricultural sector and beyond. In contrast to those changes which did not follow where they had been expected – that is, the development of an emerging, productive black farming sector – the transformations within the commercial sector will be detailed. The chapter first presents the overall transformations regarding the agricultural sector, detailing which instruments were developed and what evolutions took place, resulting in South Africa's present oligopolistic agricultural sector. It then discusses how these new instruments and situations have led to new production models in South Africa, but also how they are presently being exported all over the continent. Finally, the concluding section looks at the consequences of these transformations in the framework of South Africa's agrarian situation, and beyond.

Deregulating and liberalising the South African agrarian economy: From a state-controlled to an oligopolistic sector

Instead of maintaining state-led agricultural marketing and control boards (or parts of them through an intermediary political economic regime) to define its power, South Africa's new power structures made the choice to accelerate deregulation and liberalisation. Indeed, South Africa made this choice with regard to the country's agrarian change under pressure from the World Bank (in line with earlier World Bank structural adjustment policies elsewhere in sub-Saharan Africa), and according to negotiations with the country's agrarian and newly established corporate capitals. This decision was made because deregulating South Africa's agricultural markets was expected to result in:

- more efficient use of South Africa's agricultural resources;
- increased investment and employment in agricultural marketing activities;
- lower real food prices;
- a further fall in real land prices;
- a shift in responsibility for managing agricultural risk from government to the private sector;
- less of a burden on government finances;
- less scope for legal challenges to the system;
- considerable savings in political and bureaucratic time and energy formerly spent on price setting;
- reduced opportunities for rent seeking by vested interests (OPM 2000).

Although the restructurings initiated from the late 1980s to the beginning of the 1990s were significant, their implications were highly biased. As Bernstein (2013) notes, transformation has taken place, if not always in ways forecasted, or at least

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presented, by the promoters of a deregulated commercial agricultural sector and economy overall. The dismantling of the state system meant endorsed access to land and agriculture, the latter regulated through market forces within an environment increasingly characterised by concentration and extremely skewed competition.

This environment of concentration and unequal competition can be presented through three major points. First, and perhaps the most significant development, was the establishment of an agricultural futures exchange in 1995. The implementation of the Marketing Act of 1996, which led to the abolition of parastatals and boards and their single-channel fixed prices, opened a period of uncertainty for farmers (Vink & Van Rooyen 2009). Indeed, the sudden abandonment of these 'cooperative risk management and multilateral price stabilisation schemes' (Newman 2009: 549) removed the commodities' prices of reference, thus exposing producers, as well as processors and retailers, to price uncertainties. Progressively, and after a period of trials and negotiations (Bayley 2000), the sector adopted a 'market-based price risk management' (Newman 2009: 549) through the Agricultural Market Division at the South African Futures Exchange Market (SAFEX). Launching its first agricultural contracts in 1995 in beef and potatoes (which have since been delisted), SAFEX presently offers futures and options contracts on white maize, yellow maize, wheat, sunflower seeds, soya beans and sweet sorghum. The futures market gives, publicly and under constant development, a commodity reference price and offers hedging instruments (such as future contracts and options) against price risks.

The success of this national commodity market cannot be understood without considering the financial market and industry development which started in South Africa in the early eighties and which was highly organised (Bayley 2000). At that time, the restructuring of the mineral-energy complex,[1] which was facing an international embargo and a progressive liberalisation of the national economy, led to an embryonic financial industry being formed around domestic opportunities, such as in the mining sector (Ashman et al. 2011). It progressed with the development of innovative finance instruments, offered by what were to become powerful private commercial banking, trading and insurance entities. On the other hand, the pre-existence of reliable infrastructure, especially silos which are used as delivery points and permitted the establishment of silo receipts to secure market transactions, was also a key factor. The SAFEX spot price for agricultural commodities is then used by insurance companies or commercial banks as benchmarks and guarantees for their services. The above-mentioned new instruments and financial channels tend to promote actors with substantial financial capacity, legal knowledge, significant production volumes (the standard contract size on SAFEX is 100 tons; Vink & Van Rooyen 2009), and access to (pre-)existing infrastructure, which results in these market transformations perpetuating discrimination.

Secondly, the privatisation of the country's physical assets (such as grain silos, maize mills, feed mills and feedlots) and financial assets accumulated from four decades of state subsidy (Co-operatives Amendment Act, 37 of 1993) led to the

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establishment of powerful agribusinesses (Amin & Bernstein 1996). As such, the former cooperatives, which were privatised around 1994, largely benefited from the above innovations. Not only did they control most of the silos (built pre-1994 in a subsidised economy and now privatised), they also engaged in trading and hedging activities. From institutional intermediaries, they have been recycled as technical and financial intermediaries. For instance, Senwes, a previous cooperative and one of the three bigger silo owners in South Africa, is presently the leading trader for white maize (Chabane et al. 2008). Furthermore, these restructurings are accompanied by vertical and horizontal integration within the agrifood systems, through mergers and acquisitions made during the privatisation process, a characteristic of agribusiness concentration globally in recent decades (Reardon & Barrett 2000). Probably the most prominent example of such trends is AFGRI, also a former cooperative which is now listed on the Johannesburg Stock Exchange (JSE Limited, hereafter JSE). It is one of the big four maize and wheat milling companies and traders, one of the big three in poultry feeds and has major stakes in the seed and pesticide production industry. It also offers agricultural services, as well as physical and intellectual inputs to farmers, producers and users of agricultural inputs – as such covering entire value chains (Bernstein 2013). As noted by Greenberg (2010), these former cooperatives and commodity trading houses have progressively acquired an increasing role in the sector's restructuring and, although they were already highly concentrated in some branches and commodities by the end of the 1990s, they have become more concentrated since then, with further processes of consolidation of market power and private regulation. This concentration in agribusiness is illustrated by a recent case which was opened by the Competition Commission for anti-competitive behaviours in different industries.[2]

The privatisation and subsequent control over and concentration of these assets have led to few agricultural service channels being available. Although the government still delivers extension services and credit through the Land Bank, their efficiency and effectiveness have been continuously decreasing. Commercial banks currently contribute 75 per cent towards agricultural financing in South Africa, while the Land Bank's 30 per cent share in 2000 has decreased in recent years. As noted by Chabane et al. (2008), 'the maintenance of supra-competitive prices and margins implies being able to prevent new entrants being effective competitors'.

Thirdly, food processing and distribution is also highly monopolistic in South Africa. As Bernstein (2013) notes, a few large corporations dominate food processing. National Brands, Pioneer Foods, Tiger Brands and Nestlé SA together account for over 80 per cent of the market share of processed food staples. In addition, the food retail sector is also highly monopolistic, continuously concentrating. Four retail chains dominate the sector, accounting for a total of 2 500 supermarkets, an increase of just under 10 per cent since 1994 (Biénabe et al. 2011). The share of this handful of supermarket chains in retail food sales increased from about 55 per cent in the early 2000s to 62 per cent in 2008 and 68 per cent in 2010. The two largest, Shoprite and

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Pick n Pay, had a combined share approaching 50 per cent in 2007 (Bernstein 2013). Not only is the dominance of the main supermarket chains present in metropolitan centres, their expansion since 1994 into townships ('no-go areas' during apartheid) and into rural areas is significant. Moreover, these major chains have developed highly centralised systems for procuring fresh produce, with their main procurement system relying on preferred suppliers (Biénabe & Vermeulen 2007a). This system aims to ensure a consistent supply. It requires farmers and processors to comply with food safety standards, such as Euro Retailers Produce – Good Agricultural Practices (EurepGap) (a set of standards for farm products) and Hazard Analysis and Critical Control Point (HACCP) (an approach to ensure food safety) (Biénabe et al. 2011).

Beyond concentration and vertical integration, these trends have the potential to exclude small-scale farmers from mainstream agrofood markets (Louw et al. 2008). While it is also argued that there is scope for restructured agrifood markets to provide viable market opportunities for smallholders, the general trends of market restructuring have clear exclusionary effects on small-scale farmers (Anseeuw et al. 2011; Biénabe & Vermeulen 2007b). Indeed, these restructurings and present practices within the agri-retail sector entail higher levels of sophistication and represent higher barriers to entry for small-scale farmers. As Bernstein (2013) states, the requirements following from the deregulation of the domestic market and liberalisation of international trade and investment have led to the removal of restrictions on the mobility of capital and commodities imposed on South Africa in the apartheid era. This has in turn contributed to greater concentration in farming and agribusiness, with new opportunities for trade and for inward and outward investment. That, together with agricultural and economic policy more generally since 1994, has done little to 'transform' the situation of South Africa's marginalised majority, who remain entangled in the legacies of racialised inequality (Marais 2011). As such, the forms of further capitalist development of agriculture since 1994 have reinforced the obstacles to the viable growth of production by small-scale farmers, thus reducing their prospects of 'accumulation from below' (Cousins 2013).

Indeed, the sector seems more blocked than ever, providing very few prospects for the now legitimised newcomers to prosper since the end of apartheid. As such, agrarian and corporate capital systems, both legacies from the apartheid era and since enhanced by the post-1994 liberalisation/deregulation process (Bernstein 2013), are still controlling the accumulation process in the agricultural sector and they curb any attempts at competition or redistribution from the insider.

The unexpected guest: Financial capital and new models of production in South Africa's agriculture

While structural transformations in South Africa's agricultural sector do not occur where expected and are not made possible from within, changes have occurred lately, related to the engagement of actors linked to the financial markets. The latter

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represent the emergence into this frozen landscape of a new form of capital, that is, the 'financial capital' coming from beyond the orthodox and historical boundaries of South Africa's agricultural sector.[3] This 'financial capital' is embodied by a plurality of actors raising funds on financial markets and allocating and managing it through a portfolio of assets. Currently, commercial banks, pension funds and endowment funds, as well as development financial institutions and insurance companies, are investing in South African agriculture and agro-industries. This attraction seems to be driven firstly by the 'multiple food-energy-climate-finance crisis' (Margulis et al. 2013: 1), triggered globally in 2008/09, which led to a renewed interest in agriculture from financial markets. Confronted with uncertainties affecting 'traditional' financial assets (e.g. bonds and equities), these financial investors diversify their portfolios, integrating more and more 'emergent' assets. Driven by the macroeconomic projections around global population and rising food prices (Daniel 2012), and encouraged by North and South American farm model innovations,[4] financial investors are more and more looking for exposure in agriculture and agribusiness. In addition, agriculture is often perceived as a strong hedge against inflation, as agricultural products are integrated into the commodities basket of inflation. As such, financial industries consider agriculture and agribusiness increasingly as asset classes (Chen et al. 2013; Ducastel & Anseeuw 2013). This is particularly the case in South Africa, where the increased liberalisation and deregulation of the economy and agricultural sector (Vink & Kirsten 2000), and the presence of the above-presented well-structured instruments, in particular SAFEX, as well as a range of risk management instruments to investors, present a convenient base for financial innovations. The country's land resources and its role as a regional power also stimulate the interest of investors in this market, not only as a laboratory for new agricultural and investment practices (Ducastel & Anseeuw 2013), but also as a stepping stone to other regions on the continent (Hall 2011).

These financial actors often perceive agriculture as two-tier asset classes. On the one hand, farmland is a class of property, like real estate, with investors expecting a return from its appreciation over time. On the other hand, farming and agribusiness operations produce agricultural commodities, and thus subsequently wealth, with investors endeavouring to capture the latter along the value chain. Both classes of investments are driven by the very same factors, but produce different structures of investments and production. To 'unlock' these and to penetrate the agricultural sector, financial investors implement different strategies. Indeed, the source of the capital, mainly related to their liability structures (Aglietta & Rigot 2009), weighs significantly on the investment policy, and thus on their choices and expectations regarding agriculture. Some of the investors acquire shares in agricultural or agribusiness listed companies on the JSE. For instance, South Africa's Public Investment Corporation, which manages the Government Employees Pension Fund, holds significant positions in the country's bigger agrofood-listed companies, such as Tiger Brands and Woolworths (Greenberg 2010). Silverlands Fund, a London-based private equity fund, owns 30.2 per cent of Crookes Brothers – a major corporate

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venture engaged in primary agricultural production in South and southern Africa (Crookes Brothers Limited 2013). Other investors prefer to commit to a financial vehicle, either listed on the stock exchange or privately owned, which is specialised in the sector (private equity fund, property fund, holding company, etc.). For example, Zeder, a public holding company launched on the JSE in 2006 by leading asset management company PSG, currently manages four agribusiness portfolios, ranging from primary production in Zambia to the seed industry in South Africa (Zeder 2013). In the case of a private equity fund, the financial vehicle pursues a private equity takeover strategy by moving the shares off the stock exchange (Burch & Lawrence 2012). But private equity funds can also target privately owned companies and play a more passive role in the daily management. For instance, the Agri-Vie Food and Agribusiness Fund has acquired a minority stake in several private agribusiness companies in South Africa (Thomas 2012). Finally, new players arise in the sector through partnerships or support by financial institutions. This is illustrated by Farmsecure, an agricultural service provider which started in 2004 and is active along the value chain. Farmsecure benefits from attractive finance provision through a contractual partnership with Standard Chartered Bank.

Although the financial channels in South Africa's agriculture are diverse, these investors tend to develop production models and management strategies which revolve around the very same mechanisms and principles. Indeed, financial capital deployed in the agricultural sector pushes for specific production patterns.

Firstly, they delegate the management of the operations to an intermediary (Figure 13.1). Such an intermediary can – as in the case of most funds – either be a trust fund manager, who invests and runs the operations on behalf of the investors, or an independent and specialised engineering company, such as Farmsecure, which benefits from structured and advantageous funding (e.g. loans). The use of such intermediaries is motivated by the lack of internal agricultural expertise in these financial institutions, as well as by the externalisation of the operational risks. The intermediary companies often hire former farmers or agronomists with solid backgrounds, expertise and networks in the country and agricultural sector. These intermediaries also monitor the daily agricultural operations, provide assistance and manage efficiently the risk mitigation instruments (e.g. futures commodity market, multi-peril crop insurances), thus enabling them to supervise and control the entire productive process, from the input supply to the storage and the sale of the commodity. In addition, these managers also offer the necessary guarantees regarding the financial management of agricultural and agribusiness operations. They offer structured finance instruments (e.g. loans or equity) which fit both the investors' risk requirements and the agricultural features and characteristics. As such, agricultural asset management intermediaries use sophisticated financial instruments and models, such as discounted cash flow models, to report to the financial investors, making agriculture a standardised asset comparable to any other asset (Ducastel & Anseeuw 2013).

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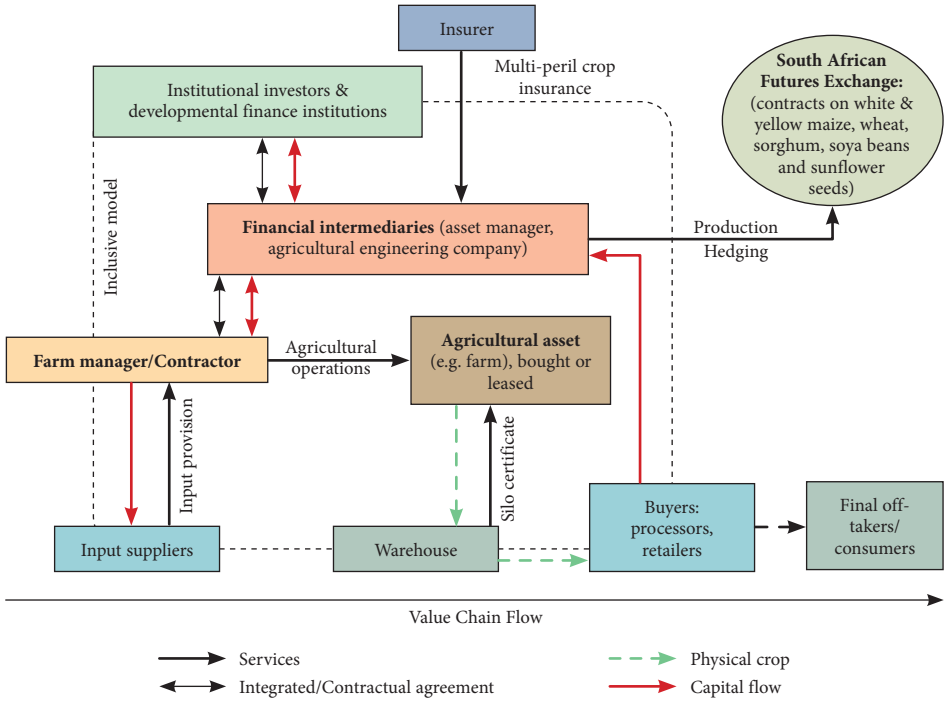
Figure 13.1 Financial capital investment and production model in agriculture



Source: Ducastel & Anseeuw (2013)

Secondly, financial investors push for the centralisation of management under the authority of the intermediary. In order to do so, they tend to gather either several farms and/or different activities along the value chain, enabling economies of scale as well as facilitating management and risk control. To start with, all the 'back office' activities (e.g. accounting) are gathered into the asset management's head office to reduce staff costs. Input costs like seeds, fertilisers and insurance are reduced as well, since they are sourced centrally and then allocated between the units. Finally, the centralisation of various farms allows managers to implement a geographical diversification strategy to mitigate the specific risk related to one asset. This is done through global mitigation in the portfolio, based on the complementarity between assets. So, by holding farms in different provinces and areas in the country, they mitigate the natural risks related to the agricultural production. Similarly, diverse crops (e.g. cash crops, permanent crops) and agricultural production (e.g. cattle and sheep) patterns are invested in, resulting in more flexibility to convert land use from one production to another. To ensure the efficiency of this centralised management, intermediaries rely on the utilisation of advanced technologies, such as precision

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farming and satellite monitoring, and implement daily reporting instruments in order to closely follow the production process.

Thirdly, intermediaries undertake or monitor the operational process as it directly impacts on the 'biological asset and value', even if they are not directly involved in the daily operations. In order to do so, they generally push for 'network organisations' (Goldberg et al. 2010), as they tend to outsource the production, partly or entirely, through contracting agreements. Thereby, the contractor can either be a service provider, paid per task in cash or in kind, or lease the land for an annual rent, becoming the owner of the crop. These organisations, corollaries of centralisation, aim at externalising the risks of such operations, as well as covering the depreciation of the agricultural equipment. In this process, the farm's staff, at least the top positions such as the farm managers, can also be hired directly with the objective to get better control over the operations. A hierarchic salary scale is then established and includes financial bonuses, in cash or as sharecropping. These practices radically transform the status of South African farmers, who become employees, managers or contractors/service providers (Ducastel & Anseeuw 2013).

The above structural elements result in a renewed configuration of the agricultural production model in South Africa, echoing agricultural transformations in other countries, such as Argentina with the development of the *pool de siembra* (Guibert & Sili 2011). These new financial capital investment and production models are developing rapidly. Indeed, this renewed capital structure and the production models it implies, which are generally externally driven, have comparative advantages for competing and upsetting the sector's historical capital structures. Firstly, they are able to raise huge amounts of capital to invest in, and grow, a specific project. Secondly, they can mobilise and import high-level technologies and/or techniques to improve the yields, such as no-till farming. Then, they benefit from their technical and legal knowledge in different areas: financial management, 'market-based price risk management' (Newman 2009), and so on. Finally, because these investments represent only a portion of a large and diversified portfolio, often with assets in different sectors and countries, they are more resilient in cases of turmoil in the South African agricultural sector. They seem, thus, to transcend the traditional rifts within the South African agricultural sector.

Confronted with the inertia of the transformation of the South African agricultural sector, these innovations seem to challenge, although still at the margins, the monopoly of South Africa's 'traditional' and inherited agrarian and corporate capital structures. Indeed, while the deregulation and liberalisation processes are blocking the possibilities for an alternative accumulation path within the sector, they have created opportunities for the expansion of financial capital into South African agriculture and agribusiness. This financial capital – and thus the transformations it implies – originates from outside the sector, if not from outside the country.[5]

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South Africa's agrarian conquest and the export of its production model

Since 1994, South Africa's agrarian and corporate capital structures have also been looking for opportunities in other African countries. This has certainly been accelerated during the last decade through the expansion of South African financial capital. Indeed, the end of apartheid opened up many new opportunities for the export of South African capital to agriculture and agribusiness (Bernstein 2013). Together, they presently contribute to the export of the South African agricultural model across the continent (Hall 2012). This spreading of the model has taken place through three different modalities and phases: the export of farmers, expertise and agribusinesses.

For several years already, there has been a movement of independent South African farmers who have established themselves elsewhere in southern Africa. According to Agri SA (pers. comm.), South African farmers are currently present in 28 African countries, with up to 800 farmers having tried to settle in Mozambique and 300 in Zambia. These farmers acquired (or tried to acquire) a few hundred, or in some cases several thousand, hectares in order to develop a production model based on the South African commercial farm model. Some of these farmers 'lost' (i.e., sold at market value) their farm(s) in the framework of South Africa's land reform programmes; others are part of those who were progressively squeezed out of the South African market. This being said, many of them still have and maintain agricultural activities in South Africa. Settling and developing agricultural activities abroad is thus not always a choice of last resort for these farmers. It also represents a way for them to benefit from cheap land and labour by expanding their activities and conquering new and less developed markets. Many of these farmers are failing, though. Although technical difficulties and institutional uncertainties are major factors for failure, the difficulty in accessing financial services and the high levels of transaction costs in Africa's less developed agrarian economies constitute the main difficulties which these farmers face (Boche & Anseeuw 2013).

The second modality is related to the export of South Africa's agricultural expertise. In the present context of a changing agricultural sector in Africa, characterised by high competition between investors interested in farmland for large-scale farming, there is a clear premium on management skills. As such, South African commercial farmers are becoming the target of an expressed demand for their skills in farm management by investors acquiring land in Africa (Hall 2012). Agri SA has emphasised that they have been invited to participate, either as farmers or as managers, by more than forty-two countries in Africa (Agri SA, pers. comm.).

Thirdly, although these first two categories represent the export of part of South Africa's agrarian capital, the country's corporate capital has recently followed the trend.[6] In search of new markets, these major South African economic actors are expanding towards less developed countries on the continent. South African

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agribusiness specialised in farm inputs (Pannar and Omnia), processing (Illovo and Tongaat-Hulett), packaging (Westfalia) and integrated service providers (Unitrans), as well as several of the now privatised former cooperatives, in particular AFGRI and Senwes, are developing and supporting activities all over southern Africa and beyond, offering their financial and technical services. Also, South Africa's major retailers and supermarkets are presently mushrooming beyond the country's borders, with the Checkers group, Woolworths and Pick n Pay leading the race. Outside South Africa, Woolworths – South Africa's luxury retail store – currently has forty-six stores in ten African countries (Botswana, Namibia, Lesotho, Swaziland, Ghana, Kenya, Tanzania, Uganda, Zambia and Mozambique). They are presently also opening stores in Nigeria and Angola (ICE 2013).[7]

While representing different modalities and having appeared in different phases, the exports of farmers, expertise and agribusinesses are complementing each other, presently leading to an accelerated and more structured conquest. These dynamics and their complementarities, pushed by the current broader rush for Africa's resources (Carmody 2011), presently structure a broader wave of a more organised expansion of South Africa's capital structures into Africa's agrarian economy. A coordinated momentum seems to be gaining speed.

Firstly, based on its experiences in the Republic of the Congo, Agri SA is organising the sector, particularly South African farmers abroad, in order to expand its activities. It does so by accessing land and negotiating favourable conditions with the host country's government, as well as by facilitating access to finance, support services and contracts through partnering with agribusinesses, beside other strategies (Boche & Anseeuw 2013; Hall 2012). For instance, Agri SA has not only formalised agreements with AFGRI in support of their activities in Africa, it has also formed a recognised structure in Mozambique, AgriSaMoz, initiated to organise the sector and its activities. With the aim of generalising more of these coordinated activities, Agri SA has recently established its Agri All Africa platform.[8]

Secondly, this momentum is reinforced through the involvement of South Africa's or South African-based financial capital looking to conquer new markets and develop their activities in gradually more deregulated and liberalised economies. This is mainly illustrated by three South African commercial banks (Standard, Absa and Standard Chartered) that support the expansion of South African farmers across the continent (Hall 2012). It is also illustrated by the export of financial capital through financial actors such as asset management companies. While based in South Africa, the large majority of these companies are developing projects in southern Africa and are endeavouring to expand their activities on the continent. Emvest is one of the most telling examples of this phenomenon. At first, the fund acquired land in several African countries and started to raise financial capital in South Africa and abroad to develop farming activities with the aim of supplying their retail facility in South Africa. Then, they started to develop retail opportunities with supermarkets based in the countries where they invest. In this context, they are in charge of

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the implementation of the Pick n Pay network in Mozambique and are trying to implement contract schemes with local fruit and vegetable producers.

Thirdly, information platforms are being organised to promote and facilitate the conquest of the continent, in the name of the necessary economic expansion and economies of scale in an increasingly competitive world. As such, Agri4Africa and How We Made It in Africa,[9] both established in 2010,[10] are opening up 'Africa's agribusinesses information highways', aiming at (South African) businesspeople as well as foreign investors with an interest in the continent.

Lastly, the South African government is also active, promoting the export of its actors, markets and models. The national government has engaged in the negotiation and establishment of several bilateral investment treaties. From 2012 to 2014, treaties were signed with Angola, Cameroon, the Democratic Republic of the Congo, Gabon, Guinea, Ethiopia, Madagascar, Mauritania, Namibia, Sudan, Tanzania, Zambia and Zimbabwe. Representing agreements on promotion and reciprocal protection of investment, they often incorporate memoranda of understanding on cooperation in the field of agriculture (Hall 2011). In addition, as part of South Africa's financial liberalisation and deregulation of cross-border capital flows within the framework of the financialisation process of its economy, the South African government promotes capital transfer legislation to promote international capital flows in and out of its economy (Ashman et al. 2011; Mohamed 2010). Provincial governments are also involved, as illustrated by the drafting of an International Relations and Africa strategy by the International Relations Directorate in the Department of the Premier of the Western Cape. This document provides 'the analysis and framework for ensuring a coherent and meaningful approach in the Western Cape's bilateral relations on the continent and build[s] on the solid foundation already in place'.[11] This was clearly emphasised during Africa Day, a platform organised by the Western Cape government and gathering together government departments, investors, businesses and service providers to promote and 'drive to create opportunities for growth and jobs by positioning the region to benefit from the untapped trade and economic potential available in [the] rest of sub-Saharan Africa'.[12]

As such, many of the struggling independent farmers are presently benefiting from the rapid development of agricultural services, technical as well as financial. From their side, the agribusinesses and retailers are dependent on the development of larger-scale farming enterprises. This leads to the development of renewed production models in African countries, varying from contract farming to more integrated models based on joint ventures and nucleus estates (Boche & Anseeuw 2013). Many of them, particularly in presence of the financial capital structures, are evolving towards the financial capital investment and production models that are developing in South Africa, albeit in different 'hybrid' forms, as they have to adapt to the local production, economic and financial situations in those countries.

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In short, the end of apartheid has opened up many new opportunities for the export of South African capital in agriculture and agribusiness. Representing an escape for some, a way of expanding markets for others, this is certainly contributing to the development of a sector that remains largely underdeveloped in many African countries. This is certainly the discourse which the South African government and actors are emphasising in order to legitimise their support for these initiatives (Agri SA, pers. comm.). As Bernstein (2013, citing Hall 2011) notes:

> Especially ironic in this process, as Ruth Hall remarks, is 'what has been called the "white tribe of Africa" – predominantly white (male) Afrikaner farmers … who see the expressed demand for their skills as affirming their "African-ness" and their place and role in the future of Africa as a whole.' So far, change since 1994 has been traced through the operations of capital in farming and agribusiness, within and without South Africa's boundaries.

These South African investments not only initiate and contribute to production in the African countries, they also inspire, as noted, institutional and organisational changes in agricultural value chains. The latter are, however, inherent in the strategies of South Africa's dominant actors – including the country's as well as foreign, but often South African-based financial capital – in their efforts to develop their activities on the continent by exporting large-scale farming models and oligopolistic value chains.

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South Africa's agrarian transformation?

Despite the few changes presented in this book, which are strongly related to the country's legacy, agrarian transformations in South Africa's agriculture have thus appeared in a sector and according to particular trajectories that were not expected. This description of South African agrarian dynamics, based on the production models currently being established within and beyond its borders, highlights several trends and brings to the fore a number of questions.

The financialisation of South Africa's agricultural sector

The first modality is related to the financial strategy and ownership which has become central within the agricultural sector. Indeed, the above dynamics emphasise the engagement of new types of actors in the South African agricultural scene. Originating from financial sectors, engaging as entrepreneurs, investors or even as pure speculators, the suppliers of capital seem more and more exogenous to the agricultural sector. Besides financing, these actors bring along renewed systems of business logic and modes of action, which stem from other sectors and are redefining the traditional borders of the agricultural one. Such evolutions are part of what Bernstein (2013) calls the normalisation process of South African capitalism

following the end of apartheid and the opening of its economy. Indeed, described for other productive spheres in many countries (including in South Africa),[13] this process of financialisation and the increasing role of financial capital is spreading into South Africa's agriculture.

Two groups of actors seem to benefit in particular from the agricultural restructuring. First of all, the financial actors become the regulators of the sector, by directly controlling an increasingly large portion of primary production and by imposing their model on producers. The second group to benefit from this evolution comprises the agricultural intermediaries. The financial institutions which intend investing in the agricultural sector increasingly depend on the services of agricultural engineering and asset management companies. As managers of both the field operations and the financial transactions, these companies are capturing an increasingly large portion of the margins generated by the agricultural activity.

Towards corporate production models within South Africa's agricultural sector

The second modality concerns both the governance structures and the production models being developed in the agricultural sector. The latter leads to corporate production models within South Africa's agricultural sector. This specific corporatisation dynamic is not related to mechanisation per se, but rather to a transformation of the production structures and their interactions (Reardon & Barrett 2000).

Whether it is how investors are linked to the sector through asset management companies or through the development of shareholding entities engaging in primary production, the renewed production models are increasingly based on the direct engagement of corporate entities in primary production. The engagement of corporates in South African agriculture is not new (e.g. the Crookes Brothers, incorporated in 1913 and listed on the JSE since 1948, which started its own sugar plantations in 1957). However, its development tends to be generalised post-1994. Corporate engagement develops not only through the financialisation process and the engagement of financial capital, it also grows organically, related to the concentration process within primary production, through the expansion of agribusinesses' activities into primary production (in South Africa and in the other parts of Africa).

The corporatisation is also related to the production models being implemented. As detailed earlier, these production models are generally based on delegating the management of the operations to intermediaries, such as fund managers; outsourcing the operational activities and production, partly or entirely, through contracting agreements; centralising the governance structures under the authority of this intermediary; and top-down monitoring of the concrete activities. Although the set-ups can vary significantly from a structural point of view, the corporate structures tend to develop according to 'network organisations' (Goldberg et al. 2010).

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The globalisation – or 'foreignisation' – of South Africa's agricultural sector

As for the other economic sectors, the end of apartheid has opened up many new opportunities for the export of South African capital in agriculture and agribusiness. It is actively supported by the government through bilateral deals, as well as through its participation in regional and continental organisations (Bernstein 2013). While it certainly fits within the country's endeavour to alleviate pressure on its domestic problems (stagnating land reform, in particular), it is part of South Africa's view of contributing to Africa's renaissance, the emblematic basis of the New Partnership for Africa's Development, which South Africa supports. Furthermore, and related to the country's support of the latter, it is part of its grand vision of expanding its markets and its hegemony onto the continent (Alden & Le Pere 2009).

This being said, the process of 'foreignisation' is also happening in South Africa. The financialisation and corporatisation process is related to what has been called the direct engagement of financial capital in South Africa's agriculture. Through direct private acquisition or through equity acquisition, based on a particular financial capital investment and production model, domestic capital (often associated with foreign capital) is being invested in South African and African agriculture and agribusinesses. The most illustrative case of this is AFGRI's recent takeover by a multinational consortium, AgriGroupe, with roughly 70 per cent of the investors coming from North America.[14] This acquisition did not go through unnoticed as it has been subject to a legal challenge, with black commercial farmers claiming that this constitutes the loss of public investment in agricultural infrastructure, taken from South African ownership, including AFGRI's extensive grain silos and agricultural marketing and logistics infrastructure.[15] This call was informed by the fact that, as the Competition Act now stands, the competition authorities may not be empowered to challenge such takeovers, as demonstrated by the United States Pioneer acquisition of South Africa's Panaar Seeds just a few months previously.

These observations lead to two points. First of all, it draws attention to South Africa's being a subject, an actor and an intermediary of Africa's agricultural foreignisation process. Secondly, it brings to the fore issues related to the country's and the continent's food security and sovereignty.

Vertical integration, primary production concentration and further dualisation of South Africa's agricultural sector

Similar to the downstream and upstream sectors, the evolution of the primary production segments is presently characterised by comparable trends of vertical integration and concentration.

Through the financialisation and corporatisation processes, the primary production segment becomes embedded in broader entities. As such, it is being integrated into structures and production/business models that have ramifications in other

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sectors (finance and insurance) and/or other segments of the value chain, which in many cases are already characterised by a limited number of actors controlling these markets at national level (Greenberg 2010). The oligopolistic structure of the downstream and upstream sectors is thus spreading into primary production, presently resulting in entire agricultural value chains tending to be controlled by a limited number of dominant actors. The control over various segments along these chains is established either through direct acquisition, or through contractualisation of the actors. The process of vertically integrating primary production is thus accompanied by a concentrating process.

These observations highlight the fact that primary production is actually more concentrated than is reflected in regular statistics. This is not only linked to the decrease in agricultural production units in South Africa (from 60 000 commercial farms in the early 1990s to about 40 000 presently – see Chapter 2), but is also related to these corporate structures taking control over several farm units. Figures regarding these concentration patterns are not readily available, but several examples are illustrative of this trend. For instance, the above-mentioned financial channels fund and directly control several farms covering important areas. Farmsecure, for example, has continued to grow both organically and through acquisitions, and currently contracts and or partners with farmers on approximately 140 000 ha on which they farm about 650 000 tons of grains and oilseeds (approximately 7 per cent of South Africa's grain production), raise 100 000 head of cattle and farm 3 200 ha of fruit across the nine provinces of South Africa (IFC 2012). On the other hand, and probably more important, the concentration is related to the vertical integration processes, which presently include the primary production segment, implying greater concentration through the control of production in these oligopolistic, or what some call 'closed-value', chains (Reardon & Berdegué 2002). In addition, monopolies in key industries like maize milling (Traub et al. 2010) not only have an impact on the repartition of the margins and the bargaining power along the agricultural value chains, they also consolidate their strength and their positions through several mechanisms of 'private regulation' (Bernstein 2013).

From independent farmers to global service providers: Farmers' changed status in the agricultural society

While the emergence of these new production models generates numerous economic-related transformations, their social impact should also be highlighted. Indeed, a common characteristic of these innovations seems to be a significant change in the status of farmers. These transformations not only impact on the producer as economic agent, but in particular also as social actor. The evolutions described disturb the social relationships and traditional features characterising South Africa's agricultural and rural environments (Anseeuw et al. 2011).

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To begin with, the centralised and networking nature of these models produces an 'a-territorialised' agricultural sector (Guibert & Sili 2011), as the property (the land) and the socio-economic activities (agriculture and the control over farm produce) become increasingly separated. This separation leads to a transfer away from the local level of regulatory powers on issues such as rural development and agricultural development, thereby raising questions as to the decisions over standards, norms and regulation mechanisms which are applied within these territories (Bühler et al. 2012).

Secondly, although in many cases the main actors within these new production models are previous farmers, their status changes significantly along the process: from independent farmer to service provider or even employee of the intermediary company within a complex networking organisation. As such, the incorporation of autonomous family enterprises into corporate structures or network organisations necessarily modifies the relationships within the agricultural sector. Farmers find themselves incorporated into production chains in which they are isolated actors with little or no decision-making or orientation power. Generally, the technical capital used, characterised by ever-increasing costs, does not belong to them, but is made available, owned and managed by the management company. Although in some cases they remain the owners of the land, their situation is increasingly similar to that of proletarian agricultural employees, service providers or rent seekers (Anseeuw et al. 2011).

The family farming structure, which until recently constituted the basic entity around which agricultural production was organised, is presently fading away in South Africa. This is the case within the commercial farming sectors, where struggling medium-sized farms are being bought out by these new structures. It is also true of the smallholder sector, since the South African government is promoting these production models through strategic partnerships between agribusinesses and land reform beneficiaries, and even communal farmers (Lahiff et al. 2012). In both cases, the independence of the farmers and landowners is dwindling. This seems to lead, on the one hand, to conflicts, particularly within Agri SA, as some farmers use the new financial channels and production models to develop their activities (especially in the rest of Africa), where others would rather remain independent. On the other hand, this might result in new alliances being formed between farmers of historically different constituencies, now defending their rights as independent family farmers.

Conclusion: Top–top transformation, elite redistribution and an increasingly blocked sector to restructure

Despite the modest transformation presented in this book, particularly related to the entangled legacies of racialised inequality and the development of a productive and competitive smallholder farming sector, the dynamics presented in this chapter reflect profound economic and social transformations in agricultural

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structures, which are occurring primarily in the large-scale, previously established commercial sector. Agrarian transformations in South Africa's agriculture have thus happened, but not in a sector and not according to particular trajectories that were expected in the framework of land and agrarian reform. Little evidence is presently available on the extent of these trends. However, they certainly have wide-ranging implications for the agricultural sector. These implications are directly related to the transformation of the country's agrarian societies through corporatisation, financialisation, concentration, dualisation and foreignisation. They also cause a shift towards a dominant corporate-based paradigm and lead to questions regarding the future of small-scale commercial farming within agricultural development. As such, in addition to restructuring not taking place where it was expected, the forms of capitalist development of agriculture since 1994 reinforce the gap between the different production models – smallholder farming and the mainstream agrarian structures – and, consequently, aggravate the obstacles facing small-scale farmers on their path to 'accumulate from below' (Cousins 2013).

Such evolutions are part of what Bernstein (2013) calls the normalisation process of South African capitalism following the end of apartheid and the opening of its economy. The increasing role of financial capital in the productive spheres has been described and analysed in many different industries and countries as a process of financialisation. Regarding the South African agricultural sector, this process is embedded in the long-term relationship, competition and/or complementarity between the country's agrarian and corporate capital structures on the one hand, and financial capital on the other.

However, their potential for transformation and their capacity to contest the 'vested interest' (Bernstein 2013) are not obvious. Not only are they leading to financialisation, corporatisation and foreignisation, as well as to a more concentrated and dual sector, their development also raises questions regarding their substantiveness and sustainability. On the one hand, new alliances seem to emerge between corporate or agrarian capital and financial capital, as illustrated by the recent takeover of AFGRI or by the massive use by investment funds or companies of former white commercial farmers as farm managers or contractors. Such alliances mostly revolve around expansion into the rest of the continent. In addition, as observed, 'traditional' actors are engaging themselves – voluntarily or forced where their viability as independent farmers is not secured – with financial mechanisms, such as private equity strategies or leverage on their assets, what Burch and Lawrence (2012) call 'financialisation in reverse'. As such, the actors engaged are – at least partly – from the same communities that are reshaping their positions within the renewed geopolitical environment. On the other hand, the sustainability of these investments and models can be questioned as the intermediaries, being subject to investor and shareholder pressure aimed at quick and high returns, have limited capacities to engage in long-term productive investments, and tend to focus

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rather on company restructuring (i.e., bundling and de-bundling their assets). Their intentions are often short term and can be redirected at any time.

The commitment period of most of these funds–production models is limited to ten to twelve years, raising questions about the durability of this model. Fligstein and Markowitz (1993: 11) state that these new investment vehicles see companies as 'a bundle of assets to be deployed or redeployed depending on the short-run rates of return that can be earned'. This potential lack of transformation capacity is all the more apparent when the renewed capital structures are assessed in the framework of South Africa's attempts regarding land and agrarian reform. Not only have the country's land reform programmes had limited results, the 'conquest' of the sector has become increasingly organised from the top. Indeed, through the Agricultural Black Economic Empowerment Fund (DTI 2008), black ownership and management throughout the agricultural value chains is encouraged. Equity and share deals seem to have become a preferred redistributive route for the government and the actors involved, as shown by the many case studies listed by Greenberg (2010: 10):

> … acquisition of a 25.1 per cent stake in KWV by Phetego Investments; acquisition of a 15 per cent stake in Distell's South African Distilleries and Wines by a BEE consortium; acquisition of a 26.77 per cent stake in AFGRI Operations by the Agri Sizwe Empowerment Trust, for R502 million; acquisition of a 4 per cent stake in Country Foods by the Kagiso Trust, for R5.5 million; and acquisition of a 30 per cent stake in exporter Afrifresh Group by Vuwa Investments.

These mechanisms strengthen redistribution from above into the sector, for the benefit of an emerging black elite which is linked to the African National Congress and its politicians (Marais 2011), without fundamentally unsettling the inherited capital structures.

To conclude, the potential for transformation borne by this segment of financial capital has still to be revealed, as it seems often interlaced with more 'traditional' forms of capital in the sector and is used as a political tool for 'top–top redistribution'. In South Africa, these evolutions tend to exacerbate the breach between the diverse production models, actors and power structures within the agricultural sector. Whereas the historically established actors of the agricultural sector and the food-processing industry see their dominant positions strengthened, entire sections of (rural) South African society are excluded from these dynamics. In the meantime, smaller and medium-size farms (including South Africa's traditional commercial farmers, the larger ones being able to sustain themselves) are being bought out or controlled by corporates or integrated into networking organisations. But, small-scale farmers and land reform beneficiaries are presently also affected, because government policies – with the aim to find solutions for its failing land reform programmes and lack of agrarian transformation – promote strategic partnerships between smallholders and land reform beneficiaries and agribusinesses (Lahiff et al.

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2012). In full contradiction of South Africa's political objectives to undo the legacies of racialised inequality and to develop a productive and competitive smallholder farming sector, the government is presently promoting the expansion of the very same socio-economic structures into the historical black territories. It is also doing so by promoting the export of its capital and production models to the region and continent. Although Agriculture Minister Tina Joemat-Pettersson has emphasised that the government is not supporting the export of apartheid to the continent, it will certainly contribute to corporatisation and concentration within less developed agrarian societies in search of alternatives.

Notes

1 For further details on the mineral-energy complex, see Fine and Rustomjee (1996) and Padayachee (2010).

2 Competition Commission vs Grain Silo Industry (09/11/2011), which imposed penalties on seven companies in the grain storage and trading industry for collusion in setting silo tariffs. In 2009, the Competition Tribunal found Sasol, Omnia and Yara/Kynoch guilty of cartel conduct in the supply of nitrogenous fertiliser, and Sasol and Foskor guilty of cartel conduct in the supply of phosphoric acid (Greenberg 2010).

3 On the 'financialisation' process of industries, value chains and firms, see, besides others, Epstein (2005); Krippner (2005); Fligstein & Shin (2007). For a focus on the food industry, see Palpacuer et al. (2006); Baud & Durand (2011); Burch & Lawrence (2012); Isakson (2014); Fairbairn (2014); and Clapp (2014).

4 See, for instance, the Argentina case (Guibert & Sili 2011).

5 This being said, these innovations rely on and fit into the long-term path of the South African sector, as most of the staff involved (asset managers, farm managers, etc.) are former independent farmers or cooperative employees. Faced with the post-apartheid restructuring, they found conversion opportunities within these new structures.

6 Although South African corporates have been operating in Africa for decades, particularly in the mining sector, their engagement in agriculture is rather recent.

7 See Jaco Maritz, Woolworths adopts new business model for African expansion, *How We Made It* in Africa, 13 September 2011; The grocers' great trek, *The Economist*, 21 September 2013.

8 See http://www.agriallafrica.com.

9 See http://www.agri4africa.com.

10 See http://www.howwemadeitinafrica.com.

11 See http://www.gov.za/africa-day-should-spur-renewed-drive-get-serious-about-growth-and-jobs.

12 See http://www.gov.za/africa-day-should-spur-renewed-drive-get-serious-about-growth-and-jobs.

13 For some case studies, see, for instance, Kadtler and Sperling (2002) or Widmer (2012); for South Africa, see Mohamed (2010).

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14 For more information, see http://www.afgri.co.za/news_19112013.php.

15 See http://www.reuters.com/article/2013/10/04/safrica-afgri-idUSL6N0HU0ZH20131004.

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14 Conclusion: Towards effective transformation of agriculture in South Africa?

Hubert Cochet, Ward Anseeuw and Sandrine Fréguin-Gresh

South African agrarian reform: Back to its old ways

Redistributing land in order to give a new boost to 'black' farming in South Africa presupposed that the causes and mechanisms leading to the collapse of black farming under minority rule would be explained beforehand. A diachronic analysis of the agrarian systems (Chapter 1) made it possible to measure the extent of the planned destruction of black farming. Sometimes dynamic and fast expanding during the second half of the 19th century, black farming was gradually taken apart and methodically destroyed so that all available resources – land, water and the labour force – could be devoted to the 'separate' development of the white minority in power. As soon as the African populations were gathered inside reserves, a process that culminated in the promulgation of the Land Act of 1913, African farming represented a sector to be used as labour in the service of 'white' farming and of the mining industry (Fine & Rustomjee 1996).

During the 1950s, the idea arose to constitute 'viable' farms within these reserves, to be entrusted to a small and carefully selected black elite. 'Agricultural development' reserved for black people was then planned within the framework of betterment planning programmes, in which arable land, pastures, urban estates and wooded areas were artificially grouped together and reorganised according to a standard plan of spatial planning. This development contributed to the breakdown of the structure of former agrarian systems, following on from the vast land-grabbing process that preceded it.

Through the then promoted farm models, this new policy prefigured that which was to be established within the framework of the post-apartheid agrarian reform for emerging farmers. The promotion of a small number of black farmers was carried out on the basis of an agricultural model copied from so-called 'modern and commercial' farming established on white farms: large production structures, often specialised in only one type of production (strict separation of the cultivation and breeding activities), relying on the massive usage of farm inputs (fertilisers and crop protection products), partially mechanised and calling heavily on a salaried workforce, with the whole enterprise being massively subsidised.

The models promoted in this 'development' policy were a total failure. Public funds were transmitted via the puppet governments of the bantustans, to be used for the

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benefit of a handful of elected representatives, thereby actively contributing to the proletarianisation of the majority.

As such, in the restricted spaces of the national territory where black populations were constrained to reside by the laws of apartheid, farm labour productivity diminished even more. Any potential hope for accumulation was destroyed by the limits imposed on access to land, water and innovations; forced decapitalisation (e.g. cattle destocking campaigns); and the deprivation of any autonomous access to markets, whether input and production means supply channels, or product marketing and value addition ones. The result is the alarmingly dilapidated state of black farming.

On the one hand was a highly subsidised production system benefiting from privileged access to production factors and markets, based on an employers' or entrepreneurial socio-economic model and exclusively reserved for white people. On the other was a proletarianised black population, confined to survive and ensure, without any support, the reproduction of their workforce for the benefit of a process from which they were largely excluded. Today, this unique situation makes the indispensable revitalisation of forms of farming which can create value addition, jobs and incomes for the great majority extremely complex.

With the quasi-disappearance of small-scale commercial, family forms of production in South Africa and, with this, the entire 'peasant' know-how, which is unlikely to be reactivated today, the only current perspectives of development for 'black' farming are limited to the reproduction of the entrepreneurial model established by white farmers. However, twenty years after the end of apartheid, what has happened to 'white' farming, heavily subsidised under apartheid and partly deprived, today, of these advantages? The detailed case studies presented in this book show quite clearly that white farmers are still dominating – even more than before – the South African agricultural sector.

Although the low cost of the workforce has not always incited farmers to invest with a view to increasing their productivity at the same pace as farmers in Western Europe or other historical regions of European colonisation, productivity differentials between these farms and the dying remnants of black farming are considerable. In all the regions studied, these differentials are of the order of 1 to 100 or even 1 to 300. In the 'black' production units situated in the quasi-unchanged territories of the former homelands, which are often still without the most basic means of production, labour productivity often remains very low, equivalent to a few hundred rands per labourer per year, increasing to R14 000–R28 000/labourer/year (or €1 000–€2 000) in the most favourable situations (Chapter 10). On motomechanised farms which are larger and historically held by white farmers, levels of labour productivity are much higher: from R42 000–R56 000/labourer/year (€3 000–€4 000) in the sugar plantations of KwaZulu-Natal; about R140 000/labourer/year (€10 000) in fruit arboriculture; from R168 000–R182 000/labourer/year (€12 000–13 000) in field-

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scale horticultural production; and from R224 000–R336 000/labourer/year (about €16 000–€24 000) in irrigated cereal production.

The difference in terms of incomes between these types of farming is even higher. Incomes cleared on commercial farms frequently reach several million rands per year, the equivalent of several hundred thousand euros, such sums remunerating the farm manager as well as capitals invested. Between these farmers and the small producers generating an annual income of a few thousand rands maximum (several hundred euros), the ratio is 1:1 000, a differential which is ten times more significant than labour productivity differentials (Chapter 10).

Contrary to the generally held idea and irrespective of what white farmers say, in particular those who are quick to denounce wage increases and the subsidies which smallholders and emerging farmers would benefit from today, farms held by the white minority still receive considerable support. White people still have greater access to land, which has been little challenged by agrarian reform processes and is unaffected by land taxation. Access to irrigation water still works in favour of white farmers, despite the progressive application of the law on water and the establishment of Water User Associations. Access to markets largely favours those who were historically integrated into the most remunerative value chains. This is accentuated by the restructuring of networks and the imposition of norms and standards that are impossible to penetrate or reach by those who are less well off. In addition, the very low cost of the labour force, despite a recent wage increase, results in the return on capital invested still getting the lion's share of value added. Finally, the measures established to accompany the emergence of black farmers were translated, in many instances, into disguised subsidies granted to commercial farmers and strategic partners, agricultural service companies, former cooperatives maintaining the supply of farm inputs and marketing, and the agro-industrial sector as a whole, which is largely controlled by white people and an often urban black elite (Chapter 12). The number of farms in the hands of the white minority decreased significantly over the last twenty years, dropping from 60 000 to around 40 000 units. This evolution resulted, on the one hand, from the pursuit of the expansion/concentration phenomenon within a sector, which was already ongoing and is presently intensified by the restructuring of food-processing markets. On the other hand, it was an effect of the threats posed to the security of the assets and people linked to these farms. This decrease does not in any way result from a declining economic situation, the result of a drastic reduction in public support that would threaten the profitability of these farms.

Twenty years after the election of Nelson Mandela as president of the republic, the 'agrarian question' seems far from resolved. Despite the constantly reasserted political will (in the discourse at least) to end racial segregation inherited from the past, and despite the fact that considerable means have been allocated to agrarian reform programmes, inequalities concerning access to productive resources and income gaps remain considerable. The areas affected by agrarian reform, through

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restitution or redistribution programmes, remain marginal and the numbers of beneficiaries are extremely limited. Moreover, many examples show that the effect of the agrarian reform, far from leading to an increase in value added and job creation, has been a considerable drop in production and income precisely where it was supposed to improve the situation (Chapter 2).

Of course, public financial support focusing on the agrarian reform beneficiaries was manifestly insufficient to start the activity up again, albeit under satisfactory conditions. This is particularly the case as the initial capital was often damaged. However, another element contributed to the failure of the operation: the support brought by the authorities to the beneficiaries conformed to a standard and unilateral production model, identical in every respect to that promoted in the past: motomechanised; specialised, with the de facto separation of the cultivation and breeding activities; great consumption of farm inputs (on irrigated land), fossil fuel and irrigation water; and relying for the most part on a salaried workforce (Chapter 11).

On lands restituted to the original communities or those affected by a redistribution programme, it is not only the land which is being restituted. Also included, at least on paper, is the agricultural development model through the transfer of the farm: buildings, irrigation and drainage infrastructure, fences and equipment. As such, it appears that the architects of South Africa's agrarian reform perceived it as an indivisible whole, an undertaking in which the ownership is to be transferred as a whole to a new individual (or a group of individuals) from 'formerly disadvantaged' groups. What we are dealing with here is a company transfer, not a redistributive agrarian reform. The principle of accompanying the land transfer with the means of production required for its development is not in itself contestable. But the non-divisible nature of the asset being transmitted relies on the unchallenged dogma of the unique model of the 'commercial' and supposedly 'competitive' farm, according to competitiveness criteria that are rarely explained in detail but are de facto limited to profitability. The latter point raises the issue of the 'development model' put forward by the architects of the agrarian reform, as well as by many other South African actors (Chapter 11).

Similar questions arise regarding the country's latest land reform and agricultural development frameworks, as well as the measures promoting partnerships between smallholders and large-scale farmers and agribusinesses (related to the Recapitalisation and Development Programme, in particular). The analysis of partnerships between smallholders, large-scale farmers and agribusinesses, which are promoted as a solution to the stagnant agrarian transformation of the country, shows encouraging results (improvement of agricultural production, access to services and resources, and participation in competitive markets). However, it also shows that these instruments are not a panacea, particularly from a smallholder's perspective. The current number of smallholders involved in such partnerships remains limited, and the engaged farmers are already better off or tend to be

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elites within the community, grabbing most of the benefits. Worse, in many cases these partnerships lead to the transfer to agribusinesses and/or white farmers of production management and decision-making processes, as well as control over land resources, as such amplifying past legacies (Chapter 12). Here again, the idea of linking smallholders to large farmers or agribusinesses transmits the idea that current commercial farming practices should be regarded as the benchmark for the kind of agriculture which the restitution and redistribution beneficiaries should aspire to.

As soon as it was decided that only 'viable' farms should be transferred to a limited number of beneficiaries who could contribute part of the capital and pursue the same production process, the agrarian reform became a mere tool of the economic deracialisation policy (as part of the black economic empowerment programme). But when beneficiary or 'emerging' farmers, for lack of sufficient production means to develop their properties on their own, are forced to call on an agricultural service company to carry out the entire crop management sequence, or even sublet their property to a neighbouring business, the agrarian reform process is, in practice, translated into an increased concentration in agricultural production units, in addition to property ownership, held for the most part by the white minority.

Moreover, the promoted model relies highly on a salaried workforce. The consequences of this choice are considerable. The very high level of farm income cleared by most commercial farms does not only come from the high level of labour productivity, but also and especially from the fact that the value added created is shared out unequally – most disadvantageously for the labourers and most advantageously for the return on capital and the remuneration of the farm manager (Chapter 10). To reproduce this social model is to reproduce the social relations inherited from the former regime. It is to found the profitability of future 'black' farms on a distribution of value added which is as unequal as it was under apartheid, to the detriment of the creation of a more fairly distributed income.

Can the specialised, well-equipped entrepreneurial or large-scale employers' farming model, operating on the basis of a large salaried workforce for manual seasonal cultivation operations, meet the major challenges of the agrarian issue in South Africa? Faced with poverty, inequalities and generalised underemployment affecting rural areas and the entire economy in general, the issue concerning South African agriculture is not so much to create formal salaried jobs – which are in fact becoming less permanent, in favour of precarious temporary contracts, often allocated to migrant populations from the sub-region, Mozambique and Zimbabwe in particular, as they are less likely to request decent working conditions – but rather to increase activities in rural areas in order to create value added as well as income. Nothing suggests that the farming model relying on a salaried workforce is better indicated for this. On the contrary, it will be necessary to promote production systems and access resource methods giving more to work remuneration than to return on capital.

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Is the development of black farming possible, despite everything?

It is a priority to identify action levers promoting agricultural development involving black populations, based on production processes that create jobs as well as value added, that are less costly for the community than those favoured in the past, and that are characterised by a less unequal sharing of value added and wealth. It also seems that no solution can be envisaged without questioning the uniqueness of the development model proposed for, or imposed upon, the beneficiaries of South African agrarian reform and, beyond that, upon the farming community as a whole. To this end, the issue concerning the redevelopment of commercial family farming, not (infra-)subsistence farming, also appears to be a priority. Four million South Africans from 2.5 million rural households are supposedly involved today in farming (Aliber & Hart 2009). Despite very limited access to farm inputs, equipment and markets, and despite clearing extremely low incomes from these production systems, these activities contribute significantly to the food security of many people.

The development of farming for the great majority of people is all the more difficult because, from the 1990s onwards and the liberalisation and deregulation of the South African economy, the entire sector seems to have become 'blocked' (Chapter 13). The privatisation process led to the establishment of powerful agribusinesses. These restructurings are accompanied by vertical and horizontal integration within the agrofood systems, through mergers and acquisitions during the privatisation process, which is a characteristic of agribusiness concentration globally in recent decades. As such, a few large corporations dominate food processing as well as the food retail sector, and are continuously concentrating. These major chains have developed highly centralised agro-systems, functioning according to preferred channels (suppliers, producers and transformers). Beyond concentration and vertical integration, these trends have major implications with regard to the country's agrarian transformation. On the one hand, it presently leads to a corporatisation and financialisation of the sector, which seems to extend beyond the traditional cleavages within the South African agricultural sector. On the other, these trends have the potential to exclude small-scale farmers even further from mainstream agrofood markets. While it is argued that there is scope for restructured agrofood markets to provide viable market opportunities for smallholders, the general trends of market restructuring have clear exclusionary effects on small-scale farmers, as they entail higher levels of sophistication and represent higher barriers to entry for small-scale farmers. That, together with agricultural and economic policy more generally since 1994, has done little to 'transform' the situation of South Africa's marginalised majority, who remain trapped in the legacies of racialised inequality. As such, the forms of further capitalist development of agriculture since 1994 have reinforced the obstacles to the viable growth of production by small-scale farmers, thereby reducing their prospects of 'accumulation from below' (Cousins 2013).

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Having said this, there is hope: usually when access to resources, and water in particular (an important stake in South Africa, considering the agro-ecological conditions), is ensured, relatively dynamic commercial family farming overcomes adversity and develops again. Although there are not many of these situations, they deserve our attention as they show that another development model is possible. We describe a few examples here.

Upstream from the New Forest canal (Bushbuckridge), farmers usually have enough water to carry out two cultivation cycles per year on surface areas of between 0.5 and 1 ha, and they complement this activity with small poultry farms meant for home consumption and/or with cattle farming on communal lands. Despite the very small size of the farms, they provide farm incomes of between R15 000 and R30 000/labourer/year, which is not negligible and contributes, together with social grants, to supporting the families. All of them use manual tools, own a knapsack sprayer and call upon service providers for labour (Chapter 5). As to the horticultural producers located downstream from the canal on the Sabie River, in the former bantustan of KaNgwane, they are less limited as far as land areas are concerned. They have between 10 and 25 ha under permission to occupy, but only use between 2 and 6 ha for cultivation. As such, they could potentially expand their cultivated surface area if they had access to more water (Chapter 5). These farmers have easier access to the market than upstream farmers, owing to the proximity of the town of Hazyview, and they sell their production in the small shops in town and on the side of the road.

Chapter 4 noted the extent to which the families of Mandlakhazi and Nwadjaheni villages, in the former bantustan of Gazankulu (now Limpopo province), were limited by – among other things – access to irrigation water for the development of their agricultural activities (gardening for the local market). Yet, as soon as this constraint was (partially) removed, the agricultural activity could take on another dimension and succeed in creating a minimum income, clearly not sufficient to live on, but significant.

As soon as secured and continuous access to water becomes possible (e.g. from an individual borehole or pump, often financed by extra-agricultural income), the value added per hectare and per labourer is significantly increased, as the family can dedicate a more important part of its workforce to agriculture. The 'traditional' cultivation of mielies, beans and marrows carried out in summer with rainwater and meant for home consumption, is then followed by a cycle of intensive horticultural production under irrigation during winter. Small farms of 3 to 4 ha, of which 0.5 to 1 ha are irrigated during the dry season for vegetable cropping, occupy a family labourer full time and often call on the services of a salaried worker, also employed full time. Labour productivity is in the region of R42 000 (€3 000), five to ten times more than that cleared by families on 2 000 m² residential plots with no access to water. These farmers generate around R60 000 (€5 000) per year, an income that contributes significantly to the family income (50 per cent). In addition to creating employment, market-oriented horticultural production also creates very high value

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added per hectare (in the region of R140 000/ha, i.e., €10 000/ha) that makes the most of irrigation water, which constitutes a rare resource (Chapter 4).

When two successive cycles of vegetable cropping are possible, at least on a portion of the irrigable surface area, results improve even more. Mathieu Boche and Maud Anjuère (Chapter 4) describe small 2 ha farms with intense cultivation, occupying two family members (often a couple) and, at the same time, four permanent salaried workers. General labour productivity is in the region of R56 000 (€4 000) and the annual income of the couple in the region of R280 000 (€20 000). The family can then live from farming despite the very small size of the farm, with external income only playing a secondary role in the total family income.

In addition to horticulture, today cattle and goat breeding remains one of the rare farming activities within reach of 'historically disadvantaged' farming communities. Furthermore, the studies conducted within the framework of this research programme show that these activities are likely to generate a not insignificant farm income, although it can be subjected to many uncertainties and variations. On the communal grazing lands of Bethanie (Chapter 9), families that keep cattle for breeding, including a dozen cows, can, when all goes well, make an income from it close to R20 000/year (slightly more than €1 400/year). Those who have at their disposal a larger herd (twenty breeding cows and one breeding bull) can earn between R75 000 and R80 000/year (around €5 000–€6 000/year).

In the region of Jacobsdal, the only grazing lands accessible to black farmers are the few municipal commonages, with very limited surface areas. While these commonages were rented out to white farmers under apartheid, municipalities are now requested to allocate them preferentially to black farmers. On the commonage of Jacobsdal, which is managed by the municipality of Koffiefontein, a plot of 250 to 500 ha has been put at the disposal of a small group of cattle breeders. With a dozen cows and around fifty small ruminants, these breeders manage to clear a modest income of between R15 000–R20 000/year (around €1 000–€1 400/year). Access to municipal lands for some can constitute an intermediate phase before gaining access to land through agrarian reform programmes (Chapter 8).

Yet, for these activities to be developed, and for an accumulation of cattle not to be synonymous with overgrazing and irreversible degradation, the constraints on access to land would need to be eased. But we are far from it at present: the majority of the grazing lands despoiled in 1913 remain in the hands of white farmers and are largely exploited for extensive grazing or as game or leisure farms. In recent years, more than 10 million hectares of these lands were converted into game farms rather than restituted to neighbouring black communities. The examples studied in the region of Kimberley (Chapter 8) and those south-west of Fort Beaufort (Chapter 6) show that these 'production systems' produce as much value added as extensive animal production (and sometimes even more, considering the exorbitant price of certain trophies), but fewer jobs per unit area.

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As limited as they are, these examples still show that another development model is possible in South Africa. There are suppliers of activities and jobs, requiring less inputs and resources, who are able to produce value added and generate incomes that are shared more equitably. How to extend this new model to the other agricultural subsectors of South Africa, and finally overcome the impasse which the failure of the country's agrarian reform has placed before the vast majority of the South African rural population? This huge problem represents a major challenge for the future of South Africa. This book has shown that a major breach is necessary, at the level of the structuring of the actual primary production, as well as at the upstream and downstream segments of the industry. Even though it has been partly deracialised, the identical reproduction of the development model inherited from the past is not sufficient.

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Contributing authors

Maud Anjuère was a research assistant and Master's student at AgroParisTech at the time of the study, specialising in comparative agriculture and agricultural development research. She is presently responsible for the agricultural insurance unit of Pacifica, a branch of the Crédit Agricole bank in France.

Ward Anseeuw, a development economist and policy analyst, is a senior research fellow at the Agricultural Research Centre for International Development (CIRAD) seconded to the Post-Graduate School of Agriculture and rural development of the University of Pretoria. He is also the co-Director of the Center for the Study of Governance Innovation (GovInn). He has conducted research for the last 15 years in Southern Africa and the African continent, more particularly on the issues of agricultural and land policies, agrarian and land reforms, land conflicts and large-scale land acquisitions. He has published extensively on these issues in scientific journals and with renowned publishers, including *Land, Liberation and Compromise in Southern Africa* (with Chris Alden, Palgrave, 2009), *The struggle over land in Africa*: *Conflicts, politics and change* (with Chris Alden, HSRC Press, 2010) and 'South Africa's Agrarian Reform – The maintenance of a post-apartheid agricultural segregation' (In French, Editions Universitaires Européennes, 2011).

Audrey Arrazat was a research assistant and Master's student at the Institut des Regions Chaudes (Montpellier SupAgro) at the time of the study. She is presently working as a technical sales representative for the Bio3g company in France.

Sophie Bièque was a research assistant and Master's student at AgroParisTech at the time of this project, specialising in comparative agriculture and agricultural development research. She is presently in charge of the rural development programme at the European Institute of Cooperation and Development.

Mathieu Boche was a CIRAD research fellow and doctoral candidate at the University of Paris XI at the time of this project. He is presently working as a land tenure expert at the French Ministry of Foreign Affairs.

Jérôme Busnel was a research assistant and Master's student at AgroParisTech at the time of the project, specialising in comparative agriculture and agricultural development research. He is presently working as a consultant in value-chain and spatial analyses for the Abso Conseil Cabinet in Montpellier, France.

Alice Clerc was a research assistant and Master's student at AgroParisTech at the time of the study, specialising in comparative agriculture and agricultural development research. She is presently working for the association of organic farmers of the Ile-de-France region, where she is responsible for developing the regional organic value chain for the collective catering sector of the region.

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Hubert Cochet, agricultural economist and geographer is specialised in agrarian systems and their evolutions, with a particular focus on the ways in which they are influenced by development policies and projects. He currently works as a professor and researcher at AgroParis Tech (The Paris Institute of Technology for Life, Food, and Environmental Sciences), where he is the coordinator of the comparative agriculture and agricultural development research unit. He's also member of the Prodig research unit. He has participated in multiple research and training missions in a variety of Latin American, African, Southeast Asian, and Eastern European countries. He has published several works concerning agricultural transformations in different regions of the world, as well as numerous scientific articles.

Nerhene Davis is a senior research fellow at the Centre for Environmental Studies of the University of Pretoria, South Africa.

Antoine Ducastel is a doctoral candidate and research fellow at CIRAD and at the Department of Agricultural Economics/Post Graduate School of Agriculture and rural development of the University of Pretoria, South Africa.

Sandrine Fréguin-Gresh is a senior research fellow at the CIRAD, currently seconded at the Central American University in Managua, Nicaragua, as a visiting scientist. She has more than 10 consecutive years of proven working in research in agricultural economics and rural geography in various African and Mesoamerican countries. Her key areas of expertise are in agrarian dynamics, rural migrations and local governance of natural resources. In particular, she has worked as a research fellow seconded at the Post Graduate School of Agriculture and rural development of the University of Pretoria in South Africa, where she developed and supervised several studies on agrarian dynamics, structural transformations of rural areas and contract farming.

Nadège Kippeurt was a research assistant and Master's student at AgroParisTech at the time of the project, specialising in comparative agriculture and agricultural development research. She is presently working as technical advisor regarding education matters for Fert, a French association for international cooperation for agricultural development in developing and emerging countries, in Madagascar.

Johann Kirsten is the director of the Department of Agricultural Economics of the University of Pretoria, South Africa.

Frikkie Liebenberg is a senior research fellow at the Department of Agricultural Economics of the University of Pretoria, South Africa.

Anne Périnelle was a research assistant and Master's student at the Institut des Regions Chaudes (Montpellier SupAgro) at the time of the study. She is presently working as a consultant in conservation agriculture for the International Fertilizer Development Center in the north of Ghana.

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Patrick Quinquet de Monjour is a former research assistant and Master's student at AgroParisTech, specialising in comparative agriculture and agricultural development research. He is presently working as advisor in organic farming to the Agricultural Chamber of the Hautes-Alpes, France.

Hélène Regourd is a former research assistant and Master's student at AgroParisTech, specialising in comparative agriculture and agricultural development research. She is presently a lecturer in economics at the Technical University Institute of Rodez, France.

Clémentine Rémy was a research assistant and Master's student at AgroParisTech at the time of this project, specialising in comparative agriculture and agricultural development research. She is presently a technical assistant to the Confederation of Farmers Unions of Lower Guinea, in support to the rice sector.

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