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► **To cite this version:**

Raphael Belmin, Chengole Mulindo, Martin Welimo, Geoffrey Kamau, Bernard Triomphe. Building on illegal value chains to achieve sustainable management of natural resources? The case of indigenous aloe exploitation and trade in Baringo, Kenya: The case of indigenous aloe exploitation and trade in Baringo, Kenya. Rural resilience and vulnerability: The rural as locus of solidarity and conflict in times of crisis, Università degli Studi di Firenze [Firenze]. Florence, ITA.; Città di Firenze. Florence, ITA., Jul 2013, Florence, Italy. pp.382. hal-01059063

HAL Id: hal-01059063

<https://hal.science/hal-01059063>

Submitted on 29 Aug 2014

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Building on illegal value chains to achieve sustainable management of natural resources? The case of indigenous aloe exploitation and trade in Baringo, Kenya

Raphael Belmin, Chengole Mulindo, Martin Welimo, Geoffrey Kamau, Bernard Triomphe¹

Abstract – This paper explores the consequences of ignoring pre-existing un-official and illegal networks for external interventions with approaches to sustainable management of natural resources in marginalized areas of the developing world. To do so, it assesses the effects of a public Research & Development (R&D) intervention aimed at promoting sustainable exploitation and trade of aloe-based products in the semi-arid Baringo County (Kenya), and how it interacted with an existing illegal supply chain dedicated to the exploitation of indigenous aloe species. Data were collected through a qualitative and participatory assessment that was conducted between April and November 2012, using an analytical framework and guidelines derived from the innovation system perspective. The study shows that geographical disparities in the effect of external intervention are the result of unplanned interactions between project stakeholders and actors from the illegal supply chain. The Baringo aloe case suggests that networks involved in illegal trade of natural resources should not be ignored or sidelined by R&D interventions but should on the contrary be supported to allow them to evolve towards certified trade.

INTRODUCTION

In developing countries, inclusive approaches to improve access to natural resources are perceived as a way for public action to break the 'downward spiral' of rural poverty and environmental degradation (Scherr, 2000). But livelihood strategies sometimes rely on illegal exploitation and trade of natural resource through non-official supply chains. Such configurations often lead to environmental threat that governments fail to mitigate (Ascher, 1999). Therefore a challenge for public action is to jointly address poverty and environment degradation by intervening at the supply chain level.

This paper explores the hypothesis that chances of success of public interventions with approaches to sustainable management of natural resources increase when external interventions build on pre-existing illegal supply chains. We illustrate this idea by reporting how official and non-official stakeholder networks have been interacting with each other in

Baringo (Kenya), within a six years period. During that time, a public Research & Development (R&D) intervention actively promoted sustainable production and export of aloe-based products as an alternative to illegal Wild Aloe Exploitation (WAE). Trade of all aloe species (except for *Aloe vera*) is regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

METHODS

A qualitative and participatory assessment was conducted in Baringo between April and November 2012, with the purpose of analyzing the multi-stakeholder process in which aloe cultivation and certified trade were introduced as 2 innovations to replace illegal WAE. We used an analytical framework and guidelines derived from the Innovation System (IS) theoretical framework (Lundvall, 1992). The framework paid particular attention to how this innovation process unfolded over a 30 year period, and focused among others on stakeholders and their roles, the types of innovations developed, the triggers and drivers, the role of markets and projects. This study was conducted in the framework of the JOLISAA project (Triomphe et al. 2013), by a team comprising of researchers, students, and community representatives. Data were collected through individual interviews, group discussions, workshops as well as from published and unpublished documents.

RESULTS

Baringo County lies in the Rift Valley Province of Kenya. South-North geographical disparities lead to differences among farmers in terms of poverty, market access, and livelihood systems. WAE has been occurring without control from the 1980s in the drought-prone and poverty-stricken pastoral areas of northern Baringo. Demand for aloe sap created by traders supplying the growing international market for aloe sap derivatives triggered WAE in the early 1980s. Traders put in place logistical arrangement (decentralized processing units, storage facilities, transportation), and set up networks of aloe sap buyers/processors spread across the territory. They also played the role of knowledge brokers by developing a series of innovations in aloe harvesting and trade and by training local farmers on harvesting methods, sap quality tests and sap processing. In doing so, traders became the central node of a vibrant supply chain linking northern Baringo households to the global market (**Fig.1**). In northern Baringo, the illegal aloe value chain offered marginalized stakeholders a fragile livelihood source, as

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traders offered low sap buying prices. But in their dire context aloe represented a diversification option and a drought aversion strategy well fitted with the social organization of pastoral households.

In 1986, uncontrolled commercial harvest was accused of destroying aloe populations and WAE was declared illegal through a presidential decree. Since this decree was not translated into law, nothing hampered the illegal supply chain with the exception of occasional custom seizures. In 2004, growing attention on the issues raised by unchecked WAE prompted the Kenyan government to try and establish a legal and administrative framework to enable the country to export aloe derivatives in accordance with CITES, with Baringo selected as a pilot area for aloe certified exploitation and trade.

From 2004 to 2009, public R&D interventions took place in Baringo to promote aloe cultivation and to build up a certified, sustainable aloe supply chain (Fig. 1). Most activities focused on the more accessible agro pastoral areas of southern Baringo, an area in which WAE had never occurred. In contrast to Northern Baringo, opportunity cost of harvesting aloe was higher because smallholders benefited from a relative diversity of livelihood sources and good market access. Smallholders received trainings and aloe seedlings, a sap-processing factory was built in partnership between a private trader and the communities, a farmer organization was empowered and Aloe Management Units (AMUs) were established. AMUs were delineated areas from where registered smallholders harvested and sold aloe sap to certified collection points following production rules and quotas. Despite this flurry of interventions, several challenges reinforced each other and contributed to the quick paralysis of the newly-emerging certified supply chain: low interest by southern Baringo farmers in aloe cultivation and sap selling, conflicts between project partners leading to market uncertainties and to limited development of certified trade.

Meanwhile, in northern Baringo unintended interactions between official and non-official networks had positive consequences, despite limited external interventions. Aloe cultivation met with a favorable interest from local farmers, and smallholders started supplying AMUs collection points before certified trade stagnated. Farmers perceived aloe cultivation as a strategy for reducing the risks linked to a fragile dependency on spontaneous aloe. Moreover, uncertainties in certified commercial outlet were reduced by relying on - or reverting to - the historically much more stable and effective non-official supply chain. Lastly, adoption of aloe cultivation was made easy by the anchorage of aloe-related activities in pastoral households' social organization, as well as by the knowledge accumulated on aloe harvest. On the negative side, the official/non-official networks interaction also led to price competition between the legal and illegal channels. This encouraged smallholders to harvest more spontaneous aloe than

usual, thus increasing the pressure on the resource (Fig. 1).

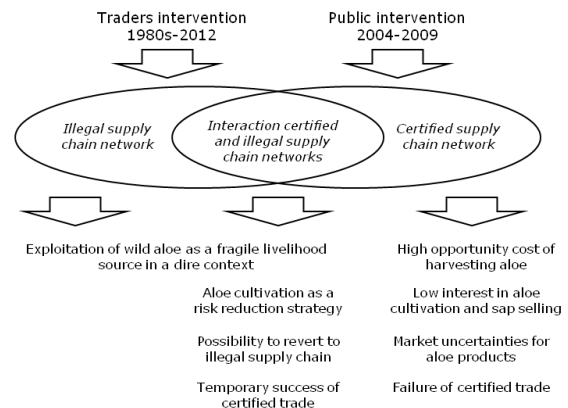


Figure 1. Interactions among illegal and public networks for aloe exploitation and trade.

DISCUSSION

In northern Baringo, temporary success of public interventions was the consequence of unplanned hybridization between official and non-official supply chain. On the other hand, by ignoring prior existing practices and networks, projects were confronted by a double challenge: low interest from smallholders in the south, and competition with illegal supply chain leading to accelerated natural resource depletion in the north. The Baringo aloe case suggests that wild harvesters and illegal value chains' stakeholders are fully part of natural resource management systems, and that intervening agencies should explore ways of recognizing and incorporating their experience to allow them to evolve towards certified trade (in this view, innovation system theory provides relevant analytical framework). Doing so appears to have a greater potential to achieve sustainable management of natural resources and poverty reduction.

ACKNOWLEDGEMENT

This work was carried out as part of the EU-funded FP7 project Joint Learning in and about Innovation Systems in African Agriculture (JOLISAA, www.jolisaa.net).

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