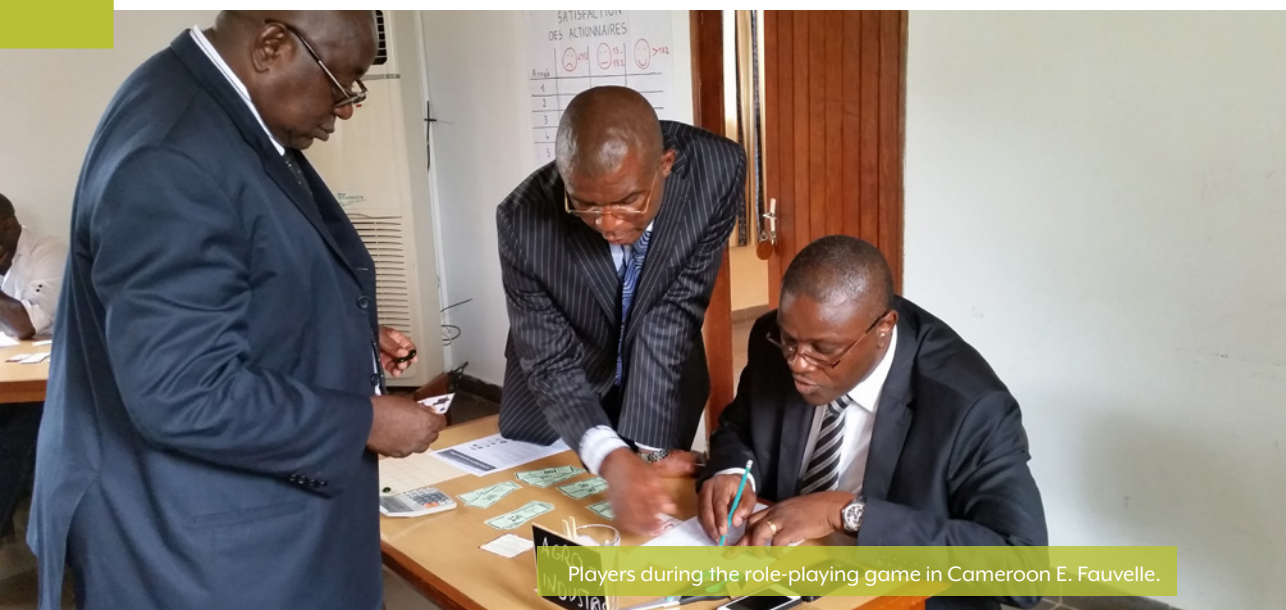


Using role-play to explore strategies for improving palm oil production and sustainability in Cameroon

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Players during the role-playing game in Cameroon E. Fauvelle.



“The game has helped us understand many things...”

Introduction

Despite being one of Africa's largest palm oil producers, with an estimated annual production of 300,000 tonnes, Cameroon also imports 130,000 tonnes per year, mostly from Malaysia and more recently from Gabon, according to the national oil refiners association. Cameroon has three main palm oil production areas, in the South-West region (100,758 t/yr), Centre (57,584 t/yr) and Littoral (47,658 t/yr) (INS 2015). Although the industry provides significant revenues, yields per hectare are relatively low. This is attributed to aging plantations and the limited use of improved seeds and technical knowledge, particularly related to fertilizer use. The extraction rate of palm oil from fresh fruit bunches in Cameroon is 21% in local industrial mills and 14% in artisanal mills (Nadjogui et al. 2014).

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To reduce imports, the government aims to increase production and productivity, but there are concerns that such plans could negatively affect the biodiversity in the country's dense humid equatorial forests, or worsen existing power asymmetries and disrupt local livelihoods. With the development of such projects since 2003, there was an urgent need to develop a national sustainable palm oil strategy to provide a framework for sustainable development of the sector (Hoyle and Levang 2012).

Can decision makers design strategies that will generate inclusive development and avoid negative environmental impacts? Ensuring increased palm oil production without negatively affecting smallholder livelihoods and the environment is a daunting challenge, not just for Cameroon. To develop strategies leading to sustainable solutions, decision makers must better understand the needs, constraints and aspirations of all stakeholders in the supply chain, from smallholders to millers and second-level processors, and pay greater attention to feedback loops and the variables affecting social, economic and ecological processes.

To tackle complex issues in renewable resource and environment management, role-playing games and simulation models are increasingly being used, some based on the participatory approach of companion modelling (Etienne 2014). This article describes an approach initiated by WWF and its partners in Cameroon aimed at fostering dialogue among value chain stakeholders, academics and government. The purpose of the initiative was to help national supply chain actors and policy makers design trajectories for sustainable green development that balanced development with social and conservation objectives. Role-playing games were carried out with stakeholders to validate and explore possible future scenarios and actions. Analysis of game sessions would illustrate the differences between the assumptions behind policies and the actual practices.

The process

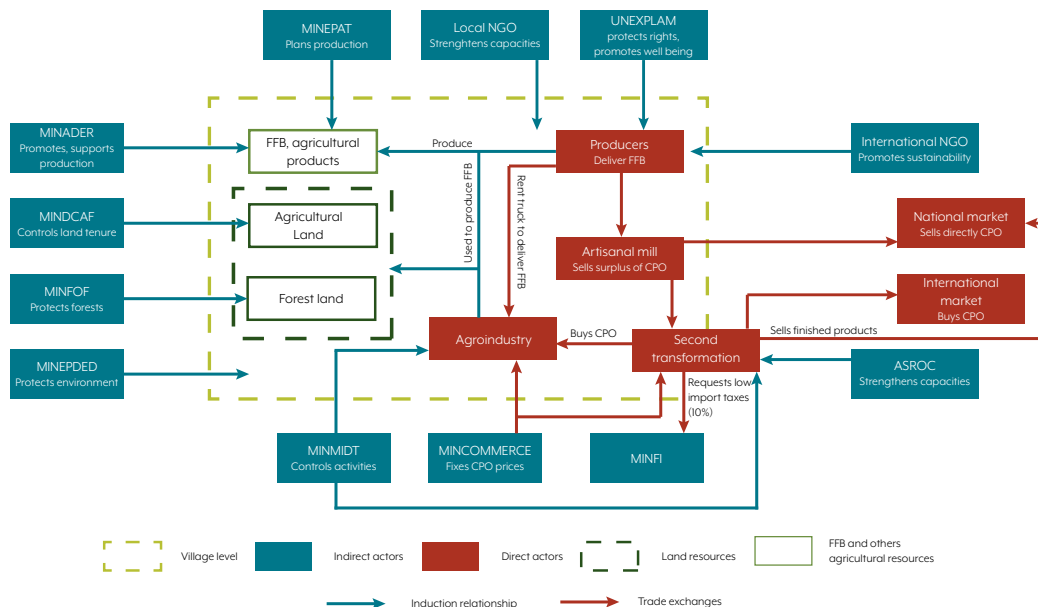
A model describing the supply chain in Cameroon was developed through participatory modelling. In January 2015 at a WWF scoping workshop, partners of the Oil Palm Adaptive Landscape (OPAL) project noted the low productivity in Cameroon, and noted that smallholders were delivering to low-yield artisanal mills instead of more efficient industrial mills. At the workshop, local producers and processors described their needs, expectations and constraints. These were formulated into possible strategies that were presented to the Inter-ministerial commission for palm oil pricing and to other policy makers, who drew insights and explored possible interventions. This was followed by workshops and interviews in all three production areas, leading to a prototype of a game, co-developed with producers and industrial actors. The game represents the current realities of oil palm landscapes, because it is based on the real lives of producers and processors in the field. During the design of the game, great care was taken not to influence specific behaviour or *what* decisions were made by any of the players/roles, but to explore *why* certain decisions were made.

One supply chain, multiple actors

Local producers, artisanal and industrial mill owners, secondary processors, local markets, domestic consumers, and international markets are the main direct actors in the supply chain. The eight national ministries involved are important indirect influencers. Other indirect actors include the UNEXPALM producer organization, the national Association of Oil Refiners (ASROC), and numerous local and international NGOs who help strengthen the capacities of producers and decision makers to adopt sustainable palm oil solutions. Figure 1 shows the complex roles and interactions between

these multiple direct and indirect actors, and the high level of policy fragmentation such as between the many ministries involved. In addition, it shows the potentially overlapping and conflicting messages sent by indirect actors when trying to influence the evolution of the supply chain.

Figure 1. Interactions between actors of the oil palm supply chain in Cameroon



Game rules – a reflection of the Cameroonian palm oil system

In April 2016, the first game in the Cooperation in the palm oil supply chain in Cameroon (CoPalCam) initiative was played by the Committee for Palm Oil Price Regulation in Yaoundé, based on the conceptual model (Figure 2). Each game begins with a short introduction by a trained game master, who facilitates the role-play. During sessions, the decisions of players and the interactions between them are observed and recorded, before a final debriefing that encourages players to draw lessons from their experiences (Garcia, Dray and Waerber 2016).

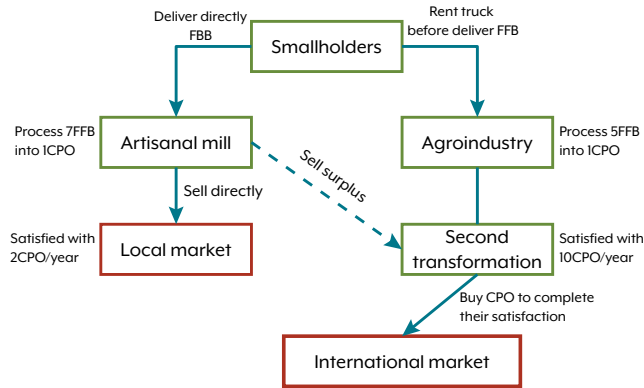
This article presents experiences from games played in Littoral (Douala) and South-West (Limbé) regions. They included 14 players from a range of backgrounds, including producers, mill owners, secondary processors, decision makers and researchers; one game was played by 14 members of a national policy dialogue for sustainable palm oil organized by WWF Cameroon.

Players can choose from four main roles: smallholder producers, industrial or artisanal mill owners, or secondary processors (soap, vegetable and cosmetic makers), all located in the same production area (Figure 2). Smallholders decide where to deliver their harvest. Industrial mills are more efficient, requiring only five fresh fruit bunches to produce one unit of crude palm oil, whereas artisanal mills need seven fresh fruit bunches for the same output. Delivery to artisanal mills is direct, whereas delivery to industrial mills requires the renting of a truck. Crude palm oil from industrial mills is sold directly to secondary processors at a price set by government. Palm oil produced by artisanal mills is sold

in local markets, satisfied with two units of crude palm oil per year, with surpluses eventually sold to secondary processors with a capacity for up to ten units. If this is not met by domestic production, processors will source from international markets, but the extent of imports in turn influences market prices at artisanal mills.

The game is played in turns for a hypothetical year, with a high and low season with three and one harvest rounds in each, respectively.

Figure 2. The CoPalCam conceptual model.



Note: Green boxes represent players; red boxes represent counters whose decisions are scripted by the research team. Adapted from Fauvelle et al. 2016.

Challenges and bottlenecks

The debriefings that followed each game were found to be crucial learning events, building on what was learned while playing the game. During debriefings, players highlighted the difficulties they faced in the game, and linked these to the challenges and bottlenecks they were familiar with in their everyday lives. Various issues were raised, two of which are described below.

Price volatility, taxes and lack of transparency. The price that secondary processor pay industrial mill owners for crude palm oil is regulated by the government. But this is not the case for the price of fresh fruit bunches delivered to artisanal mills or the price in local markets. As a result, differential treatments, unequal profit margin distribution and a lack of transparency affect smallholders, who lack bargaining power. Playing their own roles in one game, some complained. “The real problem is the unstable market price, and the government doesn’t want to homogenize it so producers can benefit. Buyers impose their price.”

However, one consequence of power asymmetries between industry and producers is that producers tend to prefer artisanal mills. Tabe Robert Taku, who works at an industrial mill in Dibombari, playing his own role, confirmed that in reality, “Some people can never come to us because our prices are too low.” The issue of taxes was also mentioned by Tsewele John, a producer in Eseka: “VAT is imposed on smallholders who supply to industry, so it’s better to go to artisanal mills.”

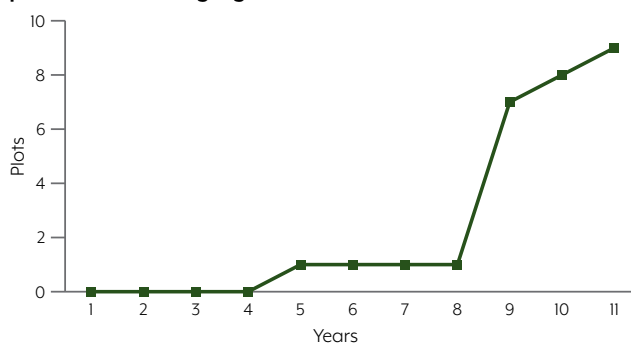
The poor state of roads. Delivery to industrial mills is tied to the low availability and expense of trucks, reflecting the logistic constraints faced by smallholders. During one game, someone who played the

role of an industrial mill owner observed that “no farmer can rent a truck to bring fruit to me in the low season, so they rather sell at the same price to artisanal mills.” Why would farmers incur transport costs when artisanal mills are nearby and offer the same price? Ebanda Ernest, a producer from Dibombari, lamented the poor roads, particularly in the July low season, when rains make transport very difficult. New contracts between industrial mills and smallholder producers can be redesigned based on such observations.

Silent expansion and the fate of the forest

One strategy to increase production is to expand the cultivated area, but communities and conservationists alike are concerned about the impacts this will have on biodiversity and alternative livelihood options (Strona et al. 2018). Once raised, this new possibility was added to the game rules. This allowed players the option of clearing forests and expanding the production area, provided that they complied with a set of conditions imposed by formal and customary tenure rights. This in fact very complicated, since control over land is not straightforward and a new layer of regulation is unlikely to change matters. Although changes on the board are slow to happen during the game, a sudden transition in the latter part shows that expansion by smallholders into public land is a possibility and is likely to happen if not adequately prevented (Figure 3).

Figure 3. Number of plots cleared during a game in Douala.



Source: Game session data, 02-06-2017, expansion scenario played

One smallholder confirmed this during a debriefing. “I find a forest. The first year I can cultivate 5 to 6 ha. I do not inform the administration and neither is the administration aware. After five years I have 90–100 ha. That’s why I say [speaking to the Ministry of Forestry] that the authorization you talk about is in reality not applicable, if I deal directly with elders and the village head.”

Proposed smallholder strategies for sustainable palm oil production

Many suggestions arose during and after games. They provided valuable and often innovative insights into ways forward. In response to the high costs of establishing and maintaining plantations, players suggested that the government promote the creation of nurseries and provide training for smallholders in agricultural techniques. They requested fertilizer subsidies to increase yields without expanding the production area, and discussed taxation and price control, not only for crude palm oil but also for fresh fruit bunches. They suggested that support was needed to improve the efficiency of artisanal mills and to develop infrastructure in order to reduce costs of production. And to prevent the loss of critical forest habitats, participatory local zoning was suggested for each village.



Role playing allows stakeholders in the oil palm supply chain to understand the needs of others. Photo: E. Fauvelle

These issues deserve to be taken seriously by decision makers, and various policy options can also be tested in the safe context provided by the game. Several layers of complexity emerged from the messages that participants took home, also indicating the different depths of strategic thinking. For example, is it possible to anticipate the impacts of fertilizer subsidies on the system? The immediate effect would probably be to increase productivity, and a shallow strategic analysis could stop there and proceed to implementation. But a more careful analysis may suggest that this will result in an increased capacity by smallholders to convert forest — the opportunity costs of conserving forest having increased, precisely because fertilizers have increased productivity. Instead of concentrating production in existing areas and reducing pressure on the forests, this measure could fuel a wave of silent expansion, as farmers respond to new opportunities. But to identify indirect and long-term impacts and integrate them into the analysis is not easy. Such analytical depth requires a vantage point, and the game offer this to the participants, making links obvious, even if it takes a few games.

Conclusions

The role-playing CoPalCam game creates conditions for integrative dialogue, allowing stakeholders with different and sometimes opposed objectives to better understand each other and negotiate joint strategies. “The game has helped us understand many things, especially in face-to-face discussions with the Socapalm mill,” says one smallholder Ebanda Ebanda Ernest. The game also highlights the many challenges faced by the oil palm value chain in Cameroon, such as low productivity, infrastructure and transportation issues, lack of social cooperation and price volatility. The political will to improve the production system, modernize the artisanal sector and collaborate with civil societies is a move in the right direction.

However, the issue of sustainable management of agricultural land remains inadequately addressed and is as yet unresolved. The continuing but silent expansion of smallholders into forested areas has the potential to change the landscape in the long run. The game allowed all these issues to be highlighted and discussed by all stakeholders in a transparent, fair and dispassionate manner. In game sessions, hard facts were discussed and constructive ideas proposed; this led to changes in perceptions and attitudes, a critical first step towards behavioural changes. As Ebanda concluded: “We noticed direct engagement from Socapalm after the game, as they organized two sessions of discussion with producers and promised they would help us with fertilizers and help us to work together.”

The game has since been used for education purposes in Cameroon, played with national and international media for further diffusion of outcomes, and in Switzerland, played with primary and secondary school children. Most recently, the game was used to explore scenarios regarding oil palm developments in a changing landscape in Uganda (Tropenbos 2018).

Cameroon is moving toward sustainable palm oil production. The government has taken up many initiatives to achieve this, including a commitment to adopt a national strategy for this aim. CoPalCam can help in the discussions to follow. All stakeholders are keen on ways to increase their incomes, but not if this causes a loss for the environment. As one player said, after discovering the benefits of smallholder cooperatives during the game: “We need to go back in the village and practise the same cooperation as we did in the game.”

Acknowledgments

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