



Resilience in the palm oil value chain in Sabah, Malaysia

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We report, here, on the output of a collaborative project between The Forest Trust (TFT) and the Sustainable Agroecosystems (SAE) group of ETH Zurich. Additional support for executing the study in Sabah was received from the University of Malaysia in Sabah. The project included the training of the Malaysian TFT staff and extensive field work to assess the resilience of the palm oil value chain in Sabah, Malaysia. This summary report is based on a recently published master thesis by Olivia Pfister, available on <http://www.resilientfoodsystems.ethz.ch/>.

Background

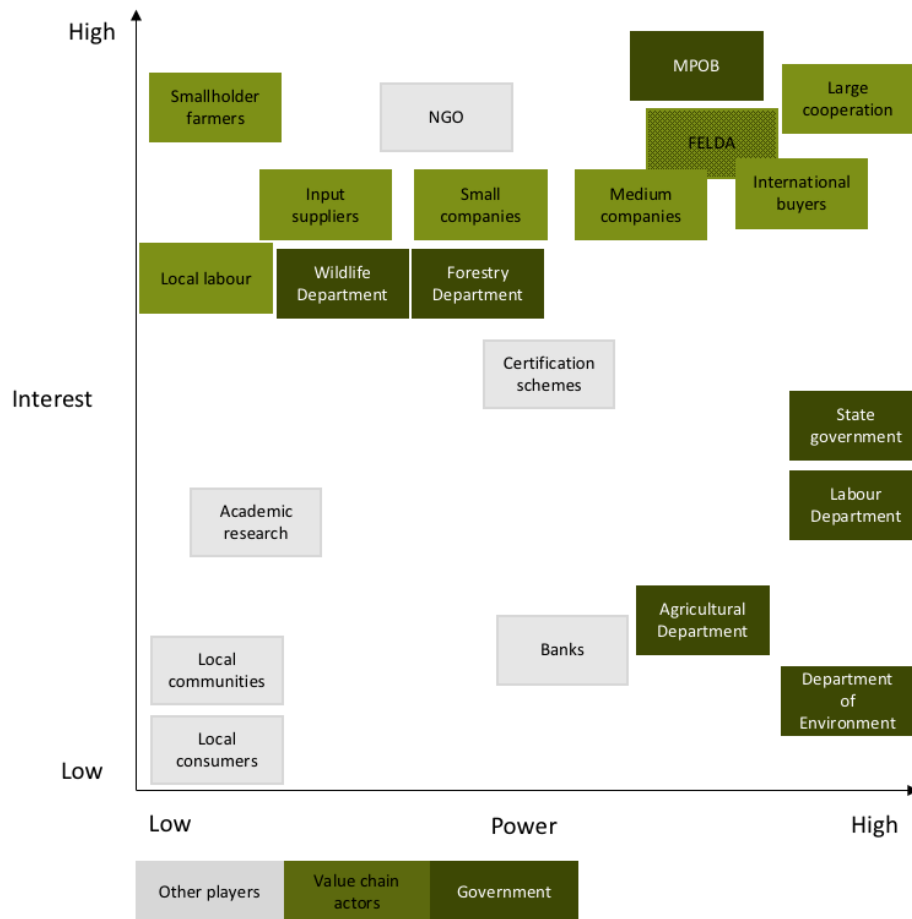
Palm oil is a globally traded cash crop. As of 2015, two countries, Malaysia (31.67 percent) and Indonesia (53.33 percent), account for 85 percent of the global palm oil production (MPOB, 2016). Its demand has quadrupled during the last 25 years due to its flexible processing characteristics for food (vegetable oil) and non-food items (cosmetics, plastics, etc.). However, the expansion of the palm oil industry has led to concerns about cutting of rainforest for palm oil production and non-sustainable farming practices (e.g. monoculture). Furthermore, weather impacts in form of drought and heavy rainfall events frequently cause price changes with implications across the whole palm oil value chain.

Among the 13 states of Malaysia, Sabah is a key palm oil producing state with a share of 9% of the global crude palm oil supply. 87% of the agricultural land in Sabah is used for palm oil production and the palm oil industry is the third biggest contributor to Sabah's economy. Located on Borneo, separated from Peninsular Malaysia, it enjoys a certain level of autonomy in administration, judiciary, immigration, etc. However, the palm oil industry in Sabah is also frequently exposed to shocks and disturbances; for example, flood events are common and may hinder the harvesting of fresh fruit bunches and transportation of palm oil products. In 2015/16, the industry experienced a severe drought caused by El Niño. This dropped the palm oil production by 14% in 2016 compared to the average of the previous ten years. Thus, Sabah serves as an ideal case study to assess the resilience of the palm oil value chain within clearly defined geographical and socio-economic boundaries.

TFT workshop

In a first step of this project, a training workshop was held in October 2016 in Kuala Lumpur to train the staff from the Malaysian TFT section about resilience in food systems. During this workshop, the palm oil value chain in Sabah was analysed and discussed. In one particular task, the TFT staff was assigned to map-out the role of different actors in the palm oil value chain in Sabah (Figure 1). Using Bryson's (2004) 'power and interest' technique, they identified that the Malaysian Palm Oil Board (MPOB) and international companies have the highest interest and power in the palm oil value chain in Sabah. In contrast, local communities and local consumers have little power and interest. This asymmetry of power and interest between local and national and international stakeholders was discussed to be problematic for the functioning of the palm oil value chain. Although, all palm oil value chain actors have 'interest', the smallholders and local labour have very limited power. This exercise visualised to the TFT staff that smallholders are part of a large group of stakeholders which means that to improve the livelihoods of smallholders interactions and cooperations with other stakeholders is inevitable. Findings and discussions from this workshop were of direct relevance to the second step of this project, which was to assess the resilience of the palm oil value chain in Sabah.

Figure 1: 'Power and interest' of key stakeholders in the palm oil value chain in Sabah



Resilience assessment in Sabah

Based on the resilience guidelines developed by the SAE group of ETH Zurich, a qualitative and holistic (based on key resilience attributes) approach was adopted to identify the resilience of key activities (input supply, production and processing) of the palm oil value chain in Sabah during drought and heavy rainfall events. In total, 57 survey-based interviews were conducted and complemented with available secondary data. At the end of the data collection, a stakeholder workshop was held in December 2016 in Sandakan. At this workshop, 19 key stakeholders (input traders, smallholders, millers, estates and government representatives) discussed potential interventions to increase the resilience of the palm oil value chain against drought.

Overall, the resilience of the palm oil industry in Sabah is relatively high, whereby the resilience for flood events (Table 1) is higher compared to drought events (Table 2). The reason for this difference is that flood events, in the form of flash floods, are common in Sabah and therefore, capacities have been developed to deal with them. Droughts are usually linked to El Niño events and thus, do not occur often. The recent drought event in 2015/16 highlighted that, apart from refineries, all value chain actors are highly exposed to this shock and have limited buffering capacity. While the duration of a drought is longer compared to a flood event, the limited resilience of input suppliers, producers, estates and mills is largely due to their heavy dependence on focusing almost exclusively on selling palm-oil related products. Thus, a lack of production, markets, and thus income diversity was identified as a major factor for the lack of resilience in the palm oil value chain.

Table 1: Summary of resilience scores for 'flood' events

Value chain step	Input supply		Production		Processing		Distribution	Whole value chain
Attribute	Input Traders	Nurseries	Small-holders	Estates	Mills	Refineries	Transporters	
Exposure to pressure								
Modularity								
Buffering capacity								
Environmental capital								
Governance capacity								
Profitability & financial capital								
Information & learning								
Transformability								

Table 2: Summary of resilience scores for 'drought' events

Value chain step	Input supply		Production		Processing		Distribution	Whole value chain
Attribute	Input Traders	Nurseries	Small-holders	Estates	Mills	Refineries	Transporters	
Exposure to pressure								
Modularity								
Buffering capacity								
Environmental capital								
Governance capacity								
Profitability & financial capital								
Information & learning								
Transformability								

Resilience
Score

Very low resilience	Low resilience	Medium resilience	High resilience	Very high resilience
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In general, all the companies that are producing for buyers within Sabah are dependent on stable palm oil prices. Despite this dependency, palm oil does generate a considerable profit for all actors in the value chain, including smallholders. The greatest beneficiaries are those actors that are at the upper-

end of the chain and are linked to international markets. Thus, for estates, mills and refineries it is possible to invest into sustainable management structures (ISO certification), financial capacity and education. Smallholders also get additional income, but find it more difficult to make use of this cash crop. The reasons are inadequate farming management practices, low knowledge levels, and insufficient access to information.

As drought is the shock of greatest concern to stakeholders in Sabah, the workshop participants, identified that water management and soil conservation practices need to be improved to better sustain periods of dryness. Interestingly, income diversification and improved self-organisation capacities were seen as other interventions that would really help to build resilience in the palm oil value chain.

Recommendations – way forward

The findings from the TFT workshop and resilience assessment show that the palm oil value chain in Sabah is vulnerable and more efforts are needed to generate a smooth transformation into a prosperous and sustainable industry that is resilient to multiple types of shocks. Despite the generation of profits, there is great dependency on this one single cash crop by all actors across the value chain. Although, laws restrict any further cutting of rainforests, the currently used agricultural land is almost entirely deemed for palm oil production in monocultures. While the certification of palm oil products is a popular topic, initiatives such as the Roundtable on Sustainable Palm Oil (RSPO), had so far little effects on stimulating context-specific transformation processes in the palm oil value chain in Sabah. The reason is that stakeholders in the palm oil value chain are complying with environmental standards and provide social security to their labour according to existing laws. Thus, there are little incentives to engage into complex and time-consuming certification schemes, such as RSPO.

The greatest challenge is to find ways to diversify the industry as a whole. At the moment, palm oil significantly contributes to Sabah's economy and also constitutes an important source of income to the Malaysian government. Furthermore, it enjoys a great demand from consumers around the world. Thus, the question is not about how to conserve (e.g. apply certification) the palm oil industry, but rather how to transform it and how to make Sabah's agricultural economy more diversified and resilient.

Thus based on our study, we suggest that the palm oil industry would benefit from a strategy that stimulates the building of a more diversified resilient food system in Sabah. This strategy would not only address issues that are directly related to the palm oil industry, such as certification of palm oil products, developing drought resistant farming and processing practices (water management, soil conservation practices and income diversification), but it would simultaneously show pathways on how to diversify Sabah's agricultural economy as a whole. In this process, the State Government of Sabah and the University of Malaysia in Sabah could be potential actors who could take the lead and steer the process of engaging with all key stakeholders in Sabah. Outside support in form of knowledge transfer and technical assistance could help to accelerate the process. However, it is crucial that this transformation process is led by people and organisations who are rooted in Sabah and enjoy the support from the public. Changes in agricultural land-use lead to trade-offs and considering that palm oil is a cash crop with rising global prices, this process will require time. To convince all involved stakeholders that diversification is indispensable for the resilience of the industry, trust and understanding for different interests will need to be installed.

References

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