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RESEARCH PAPER

The Evolution of Certified Teak Grower Groups in Luang Prabang, Lao PDR: An Action Research Approach

Stuart Ling[1] · Hilary Smith[2,3] · Lamphoune Xaysavongsa[4] · Richard Laity[5]

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Abstract Tree grower groups have been promoted by governments and development programs worldwide as a means to generate income and improve the livelihoods of smallholders by generating economies of scale and improving their bargaining power. In Luang Prabang province, Lao PDR, three plantation teak grower groups were examined using an action research approach over a 4-year period between 2013 and 2016, with the aim of fostering improved returns to group members. At the beginning of the study, it was observed that despite the existence of a price premium from certification, the unpredictable nature of sales, complex government regulations and the small contribution of teak to total household incomes combined to thwart efforts by the group to sell trees on the regular basis that would make membership worthwhile for growers. An intervention by group members and researchers to develop an internally funded enterprise unit within the group structure which added value to local timber proved to be technically feasible, although it is still too early to judge its sustainability. However, this opportunity did not immediately benefit smallholders since high entry costs, poor technical knowledge and low financial transparency dissuaded group members from buying shares in the enterprise. Improved returns to smallholders will likely occur in time as a result of local enterprises paying higher prices for timber, rather than through active group membership.

✉ Stuart Ling
stuart.ling@y7mail.com

1 Independent Consultant, Houayxay, Bokeo, Lao PDR

2 Latitude Forest Services, Batemans Bay, NSW 2536, Australia

3 Fenner School of Environment and Society, Australian National University, Canberra, Australia

4 Department of Forestry, National University of Lao PDR, Vientiane, Lao PDR

5 Independent Consultant, Sapangmor, Vientiane, Lao PDR

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Introduction

The development of tree grower groups has been promoted by governments and development programs worldwide as a means to generate income and improve the livelihoods of smallholders. The Food and Agriculture Organisation (FAO 1994: 1) observes:

> By working in groups, rather than as individuals, the rural poor are able to combine and make best use of their skills and resources. They can exchange views and ideas and choose the best options. Working together makes work lighter and easier. Most important of all, a group has more bargaining power than an individual.

Four basic requirements for group sustainability are observed by the FAO. Firstly, the group should not be too large, so that all members have the chance to contribute their energy and ideas to group development. Secondly, they should be socially and economically homogeneous, which enhances mutual trust and willingness to accept joint liability for their activities. Thirdly, the group should be formed around income-generating activities, to produce assets which help build self-reliance. Finally, groups should be voluntary and democratic, with members deciding who can join, who will lead, what rules to follow, and what activities to undertake. Groups may evolve into cooperatives, which are usually larger and more structured, and take on a role in the value chain between companies and smallholders.

This research paper examines the evolution of three certified teak grower groups in Luang Prabang, Lao PDR, using action research methods over a 4-year period, to determine if the groups are feasible, sustainable and have improved returns to members. It was conducted as part of a broader research project implemented by the Australian Centre for International Agricultural Research (ACIAR) aimed at improving the efficiency of the planted wood value chain in Lao PDR.[1] The three groups were initially established with the facilitation of the Luang Prabang Teak Program (LPTP), a government-led initiative supported by The Forest Trust (TFT), which aims to provide growers throughout the province with the skills to govern, productively manage and market their teak. Subsequently, LPTP assisted the three groups to become Forest Stewardship Council (FSC) certified, in the expectation that they would be able to access higher value markets and boost member incomes.

This paper first describes the research context within Southeast Asia and Luang Prabang, before outlining the theory and methodology of action research. We then present the findings chronologically as the grower groups evolved over the 4 years, before discussing the underlying factors that affected group feasibility and sustainability. It concludes with some observations about implications for grower groups and their stakeholders.

[1] Entitled enhancing key elements of the value chains for plantation grown wood in Lao PDR (VALTIP2).

Grower Groups Within the Regional Context

There are numerous farmer organisations in Southeast Asia based on the collective marketing of agricultural commodities such as rice, coffee and vegetables (see Manalili et al. 2013), tree grower organisations are less common. While farmers must harvest on a seasonal basis, tree growers are able to manage the timing of harvest according to specific, irregular and ad hoc cash needs. Roshetko et al. (2013: 245) express this flexibility for Indonesian teak growers on private land in Gunungkidul:

> Teak trees served as a living savings account. Trees were harvested when significant cash needs arose, such as weddings, school fees, large medical expenses, periodic social commitments, or emergencies. Generally, farm families refrained from selling their teak trees until other disposable assets, such as motorcycles, electronic goods, jewellery, or livestock, had been sold. The practice of selling teak to meet financial needs was called *tebang butuh* ('felling for needs').

This type of irregular and autonomous production leads to low incomes, since silvicultural management is poor, transaction costs are high, access to market information is limited and government policies are unsupportive (Rohadi et al. 2012; Roshetko et al. 2013). To overcome such limitations, Indonesia promoted community based commercial forestry (CBCF) organisations as a "means of achieving the twin goals of alleviating rural poverty and building a sustainable forest industry" (Race and Wettenhall 2016: 6). The 300-member KHJL[2] teak cooperative, for example, was established, nurtured and provided with FSC certification from TFT in 2003 following the transfer of a state-owned teak plantation in Sulawesi Tenggara to the local community. Its initial success has been attributed to the availability of initial start-up capital, a price premium to members and financial transparency (Barr 2006). By early 2015 however, a lack of sales forced KHJL to relinquish its FSC certificate, with its decline attributed primarily to the fact that it lost its focus as a social organisation and became accountable to its donors rather than its members (Elson and Unggal 2016). In a review of 10 years of CBCF in Indonesia, Race and Wettenhall (2016: 21) reiterated the challenges of sustaining member participation amongst existing grower organisations:

> The needs-based harvesting system tends to encourage individualism. Groups often consist of the better-off members in the community, who own larger pieces of land and can afford the risk to invest in new practices. Women have a limited role in the forestry groups. Financial service providers fail to support farmer groups or cooperatives in CBCF, with the long-term return on investment in tree production acting as a serious barrier.

In both Thailand and Vietnam, the major pulp and paper companies rely on outgrower agreements with thousands of smallholders to provide their timber requirements. For Thai farmers, these autonomous arrangements make it difficult to

[2] Koperasi Hutan Jaya Lestari, which translates to "cooperative for sustainable successful forests".

interest them in forming groups, since trees are primarily regarded as a secondary and low input commodity for underutilised land (Boulay et al. 2012). In Quang Tri province Vietnam, a FSC certified *Acacia* grower group with 334 members was reported to be receiving a 25% premium on a 7-year rotation compared to their non-certified counterparts, but this represented only a small proportion of a total plantation area numbering hundreds of thousands of hectares (Hoshino and Hashimoto 2015).

Participation in grower groups by smallholders is also influenced by poor governance and unequal power relationships within the region, which influences their ability to comply with government plantation regulations. In the Philippines, Baynes et al. (2016) report that successful community forestry requires a devolution of power from central governments to local governments, and subsequently to grower group leaders and their members. To demonstrate the dependency of a grower group in Leyte on the cooperation and goodwill of the government, they cite the case of an application to harvest a farmer owned *Acacia* plantation of 244 trees which took 5 months to be approved. Such delays lead to disillusionment within grower groups and encourage illegal activities.

Smallholder Teak in Luang Prabang

Luang Prabang is a mountainous province located in the north of Lao PDR with a tropical monsoon climate and an ethnically diverse population, many of whom rely upon swidden agriculture for their livelihoods. Teak was first planted in the 1950s, with the area increasing rapidly in the 1990s as revised land allocation policies encouraged the planting of teak in the uplands as an alternative to swidden, which was perceived to be environmentally destructive (Newby et al. 2012). The majority of the teak estate is therefore owned by smallholders, with an average holding of 1330 trees, or 1.4 ha/household (Newby et al. 2012). A recent inventory mapped the area of teak in Luang Prabang at just over 15,000 ha (Boer and Seneanachak 2016), with the majority of stands in small size classes due to the tendency of farmers to thin from above.

Local growers have traditionally sold their wood at low prices through middlemen, who need to compensate for the costs of purchasing limited quantities of small diameter logs from individual farmers (Midgley et al. 2007). Low prices are exacerbated by the numerous institutional constraints middlemen face, including opaque and contradictory legal frameworks and high transaction costs for administrative processes (Smith et al. 2017; Said 2016). While middlemen have often been reviled for taking advantage of smallholders, Anttila (2016) concludes that they are preferred by Luang Prabang teak growers who lack the time and motivation to undertake these complex processes.

Like other parts of Lao PDR, Luang Prabang has undergone rapid socio-economic development in recent years which has led to rising inequality and an increased reliance on off-farm income (Rigg et al. 2016; Warr et al. 2015). Newby et al. (2012: 44–45) point out that the security of tenure provided to teak growers allowed them to accumulate land, thereby contributing to social differentiation amongst traditionally close-knit farming communities:

> A small group of better-off farmers, urban-based outsiders and absentee owners, have captured the majority of the benefits, while those with greatest dependence on shifting cultivation are actually made worse off through declining access to land.

They conclude that technical interventions aimed at reducing poverty need to be seen in the context of agrarian change and differentiation. This has implications for actions such as the formation and sustenance of grower groups.

Methods

Study Area

The three FSC certified teak grower groups in this study were established in three villages by LPTP between 2009 and 2011, and are located in a cluster about 10 km south-east of the provincial capital of Luang Prabang (Fig. 1).

Key characteristics of these villages at the beginning of the research in 2012 are given in Table 1.

According to LPTP data, only about one-third of teak growers within each village had chosen to become grower group members, with commitment to meetings, uncertainty about the benefits and compulsory selling within the group being cited as reasons for not wishing to join (LPTP 2010). Also unrepresented are the generally wealthy absentee owners who have bought-up plantations within the village, and

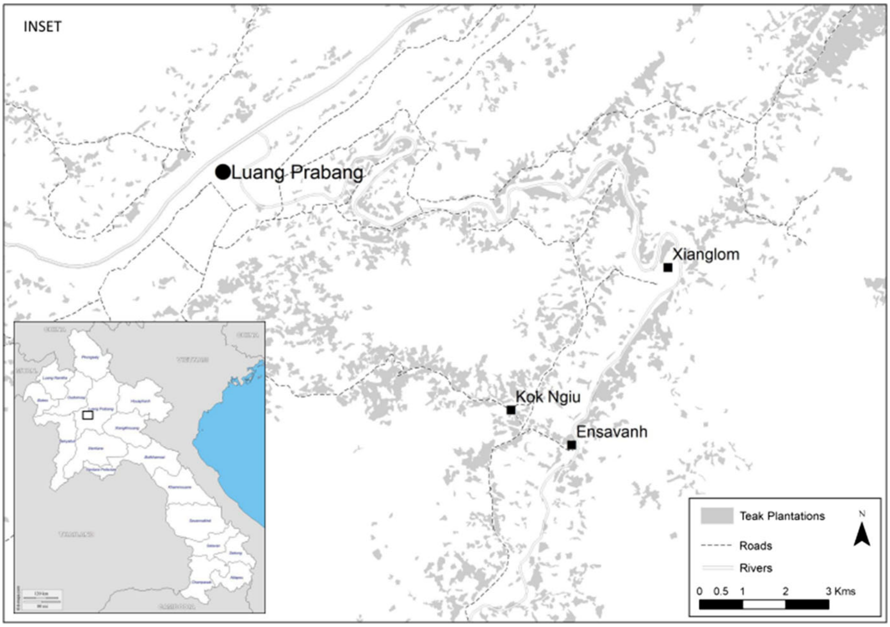


Fig. 1 Location of study villages and teak plantations

Table 1 Baseline characteristics of study villages

Village	Ethnic majority	Total households	Number of group members	Area of FSC plantation (ha.)	Year of group establishment
Kok Ngiu	Khmu	186	54	90.9	2009
Ensavanh	Lao	103	38	61.6	2011
Xianglom	Lao	157	27	36.5	2011
TOTAL		446	118	189.0	

whose holdings may make up 50% of the total teak estate in some villages (Newby et al. 2012).

Nature of Action Research

Action research (AR) has been described as a rich and diverse family of approaches, which seek to bring together action and reflection, theory and practice in participation with others (Gill et al. 2010). It was considered the most suitable method to answer the research question, given the range of stakeholders and the anticipated changes the groups would experience as they navigated through certification and an uncertain policy environment over the 4-year timeframe of the project. All AR starts with identifying problems with clients (in this case grower groups), and then proceeds to design practical interventions with the group and other relevant stakeholders aimed at resolving these problems. The effects of these interventions are then jointly evaluated to determine the extent to which the problem has been resolved, to learn from the results obtained and then adjust the mode of operation before moving to the next AR cycle. There are an indeterminate number of cycles of diagnosis, planning, intervention and evaluation, as shown in Fig. 2.

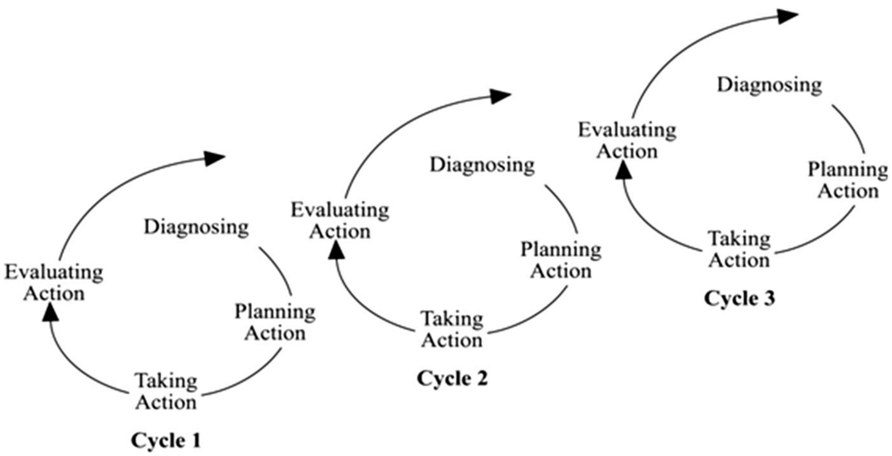


Fig. 2 The action research cycle (*Source*: Coghlan and Brannick 2001)

This cyclical model, which emphasises mutual learning from feedback and critical reflection, differentiates AR learning from the conventional research process, in which a problem is studied and then action is taken.

Research Process

The AR team was established in early 2013 and comprised four people, including two researchers from Lao universities, one technical officer from LPTP, and one international researcher.

Each of the three villages was visited on six occasions between May 2013 and September 2016, which corresponds to six cycles of AR. Within each village, the AR team undertook semi-structured interviews with two subgroups, being firstly the grower group committee (usually 5 people), and secondly ordinary members of the grower group (typically 6–8 people, with an insistence that female growers be represented). Based on their identified constraints, each subgroup developed an action plan for the subsequent cycle of 6–12 months, before coming together to agree on a joint action plan. It was this joint action plan which was then evaluated during the subsequent cycle of AR, in accordance with Fig. 2.

All group action plans were drawn on large sheets of paper and hung in the village meeting room for reference. For practical and ethical reasons, the semi-structured interviews were not recorded, but field notes were taken in Lao and English and analysed as a team at the end of each field visit to understand their implications. The presence of the LPTP technician within the AR team ensured that support was available to implement the action plans. Each AR cycle included interviews and meetings with government officials and other key stakeholders, which contributed to their knowledge and ability of the AR team to implement the group action plans. To enable comparisons and generate ideas for the research team, a long–established and successful rubber growing group in Hat Nyao village, Luang Namtha province also participated in the study.

Results

The results are presented chronologically, beginning with the baseline situation in May 2013 as the AR team began work and concluding with the situation in September 2016.

Baseline: Collective Marketing Under Threat—AR Cycle 1 (May 2013)

At the start of the research in May 2013, the teak grower groups were active. To satisfy the requirements of the newly issued FSC certificate, they had received training from LPTP in a suite of topics, including silviculture, safe harvesting practices and group management. As an incentive to join the group, growers were issued free plantation registration certificates, a normally costly regulatory requirement which certifies their ownership and entitles them to land tax exemptions (Smith et al. 2017). Growers were also anticipating higher prices for harvested wood, due to sales based on volume rather than standing trees, and four FSC sales totalling 197 m^3 had been recently concluded with a furniture company in Vientiane.

It emerged during the AR however, that even though the prices paid by this company were about 30% higher, growers perceived that they were not necessarily better off. Firstly, the combination of government transaction costs associated with harvesting approvals and grower group management fees meant that growers lost up to 12% of tree values in additional costs. Secondly, the 3-month wait to be paid in full by the company while it concluded contracts and followed due legal process, was seen as an unacceptable risk by growers who were used to being paid ‘on-the-spot’ by middlemen. Thirdly, the group had to contribute their own labour to cut, transport and measure the trees, and growers with more lucrative off farm employment were unwilling to participate. Finally, and perhaps most importantly, growers felt pressured to harvest their trees when the market wanted them: this is the opposite of their original planting intention, which was to harvest their trees when they needed the money, such as to send their children to college or pay hospital costs.

Despite these early misgivings, growers reiterated the importance of the group while preparing their action plans, and acknowledged that both the committee and ordinary members had to be more proactive if the growers group was to be effective and sustainable. Although encouraged to do so by the AR team, groups were not prepared to combine their teak lots between villages to allow a larger consignment of timber to be marketed, since they felt that those from outside their village would be less trustworthy when it came to making payment.

Teak Groups Struggling: AR Cycle 2 (November 2013)

While all teak groups had prioritized regular meetings in their action plans following the first cycle of AR, only Ensavanh reported that it had actually held its meeting as planned, when the AR team visited again for Cycle 2. All three groups reported that member interest was waning since there had been no FSC wood sales since January 2013, and so no proof that membership continued to deliver a higher price.

Some ordinary members in Kok Ngiu reported that they had been forced by economic circumstance to sell timber outside of the group over the previous 6 months, and blamed the group committee for not organising regular sales. In turn, the committee stated that they had tried to organize a harvest planning meeting for members, but those few that actually turned up had no interest in selling timber and so it was not worth contacting the market. This cause and effect dilemma became a downward spiral, with the end result being the same as the pre-group situation-group members sold their standing trees to middlemen in an ad hoc manner, on a needs basis. The penalty clause to discourage outside sales under the group’s rules was not invoked, thereby setting a precedent for others to follow.

The reason for the disinterest in groups was stated clearly by all members interviewed during the AR, being that the benefits of group membership did not outweigh the costs. During an LPTP stakeholder workshop in October 2013, the head of one grower group stated:

> There is no incentive for other farmers to join our group, as those that have sold their wood as standing trees through middlemen receive the same price as those who are in the group and sell their wood following all legal administrative processes.

This statement highlights the cost of attaining legality as yet another disincentive to group formation by smallholders. Only experienced middlemen who can bulk-buy timber are capable of negotiating the complex procedures required for compliance and paying the associated transaction costs along the value chain.

Limited opportunities to market small logs from plantation thinnings, which would boost stand productivity and generate regular supply for industry and income for growers was a particular frustration for stakeholders. An industry representative reported at the same stakeholder workshop:

> Purchasing small logs from farmers is unviable because of the flat rate of tax levied per cubic metre. Buyers can only offer a low price to farmers and then farmers won't cut their trees.

A further constraint to group solidarity is the increasing role of off farm livelihoods, which lessens the relative importance of teak to the household. In a complementary study, Smith et al. (2017) found that teak made up only 7% of household income within 68 grower households in 5 villages in Luang Prabang,[3] although there was a high variation between individual households. At this proportion, a net 14% premium on teak prices would be needed just to boost annual household incomes by 1%.

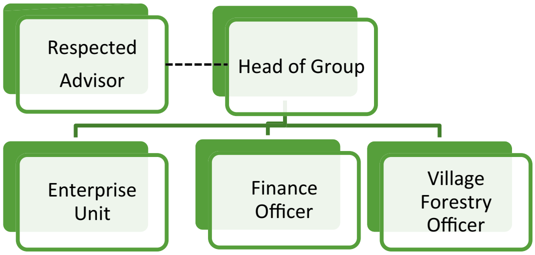
While teak groups struggled, the rubber group in Hat Nyao used for comparison by the AR team continued to grow over the course of the research. Rubber was the primary source of household income, and payment to growers was made within 2–3 days of the group's monthly tenders of raw latex. Fees were less than 3% of sales and included access to a grower provident fund, and the government took no transaction costs. Sales outside the group were almost non-existent.

Implementing Change: from Group to Enterprise (December 2013–June, 2014)

Following two cycles of AR, the AR team and the groups agreed that some form of local processing was needed to increase returns for smallholders within the value chain. There was debate, however, as to whether it should be in the form of a cooperative, in which all members buy at least one share and have voting rights, or an enterprise with a limited number of shareholders. While there is provision for cooperatives in Lao PDR under the existing legal framework, group members rejected this model based on their experiences of the enforced collective farming following Lao independence in 1975. Instead, an enterprise model was endorsed by

[3] This study was also supported by VALTIP2, and included Xianglom and Ensavanh villages.

Fig. 3 Grower group committee structure incorporating the enterprise units



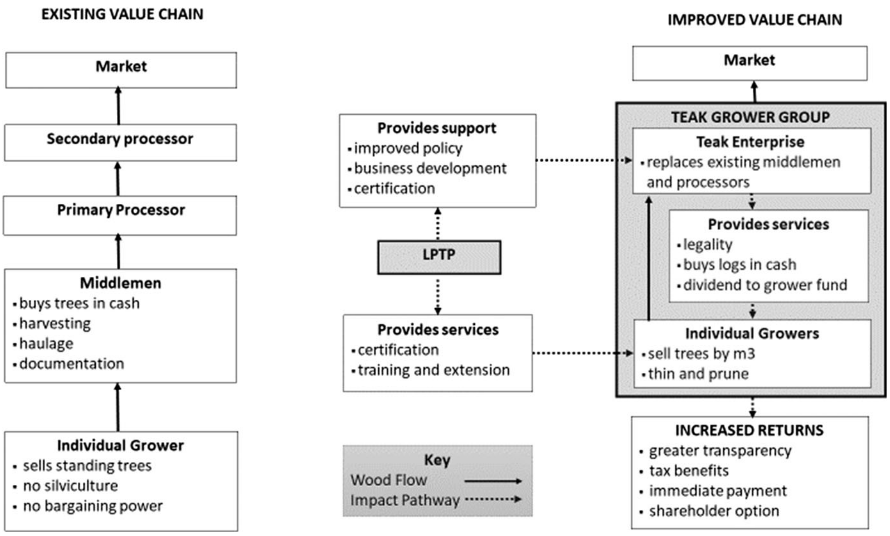


Fig. 4 Existing and improved teak value chains in Luang Prabang

growers and a business plan was prepared. A further decision retained the enterprise unit under the existing group structure to ensure that its social benefits would be recognised by local authorities and potential donors, rather than forming it as a separate entity (Fig. 3).

The enterprise unit was intended to take on the existing roles played by middlemen and processors in the chain, with the objective of increasing returns to growers. Figure 4 was developed by the AR team to compare the position of teak growers relative to other actors in the existing and improved value chains.

In the existing smallholder value chain, individual growers (whether in the group or not) sell standing trees through one or more middlemen, each of whom needs to make a profit. Many of these middlemen are traders from outside the village, so the profits do not flow back to local people.

The improved value chain, with the grower enterprise, was expected to increase economic and social returns to smallholders by adding value to wood within the local community, regardless of whether it was FSC certified or not. Firstly, transparency would be boosted by volume based sales (as distinct from standing tree sales) to members of the local community. Secondly, the enterprise could take advantage of government tax exemptions for processing locally grown timber which would boost competitiveness and enable it to pay higher prices to growers. Thirdly, the enterprise would provide immediate payment to growers, or at least be able to demonstrate the trust that growers require for delayed payment. Finally, it was hoped that local growers would invest their own capital to become shareholders in the enterprise and so receive dividends.[4]

Enterprises Approved and Operational: AR Cycles 3–6 (July 2014–September 2016)

During the second half of 2014 all three teak groups had their enterprises registered as businesses under the 2007 Forest Law by the Provincial Agriculture and Forestry Office (PAFO). The Xianglom group formalized its existing small furniture operation with six members as shareholders, while Kok Ngiu constructed and equipped a small furniture factory with four shareholders. In Ensavanh, processing machinery was purchased, but soon after the enterprise unit leader moved out of the village and left the business to his relatives. It remained unused during the final visit of the AR team (September 2016), and its future was uncertain.

The approval process to legally recognise the enterprises highlighted inconsistencies in policy between different provincial departments. In September 2015, the Industry and Commerce Office stated that it did not recognise PAFO's approval of the enterprises, on the grounds that that the number of sawmills that did not meet advanced processing standards should be reduced (MOIC 2015). They did however, continue to permit the export of teak round logs to China, which was contrary to other government policies promoting domestic processing (PMO Lao PDR 2016).

Action plans made during the AR cycles 3–6 by the three teak groups and their enterprises promised regular meetings to present financial reports, collect membership dues and discuss group affairs. However, group records showed that meetings were sporadic, with none considered to have discussed the issues that had been identified in the preceding action plans. The Kok Ngiu group did not hold a single meeting during this period, with the group committee explaining that "people who aren't ready to sell timber aren't interested in coming to meetings." In Ensavanh, meetings were regarded as unnecessary, since "only two out of 38 members owned merchantable timber." Without meetings however, transparency suffered, and ordinary group members remained disinterested:

> I know nothing about the group finances. I have seen wood being sold, and have paid my 5,000 kip[5]/ha [membership fee] for the year, but I know no details. I am no longer interested to participate.

As intended, growers were offered the opportunity to sell their wood to the enterprise by the cubic metre, instead of by the standing tree (Fig. 4). However, one

[4] There was no support from LPTP or other donors to subsidise capital expenditure.

[5] Equivalent to USD$0.60 cents.

enterprise shareholder stated that growers continued to prefer to sell standing trees, "since they understand their visual value, and are suspicious of a list of log measurements". The importance of understanding risk when dealing with smallholders was again reflected in the following statement by one grower:

> If I don't like the standing tree price I don't have to sell, but once it is cut down I have lost my bargaining power.

In April 2016, the 5-year FSC certificate expired, and PAFO and TFT jointly agreed not to renew it. Although access to FSC markets was the initial justification for group establishment by LPTP, the high annual certification fees, auditing costs and lack of FSC sales meant that it was not viable to continue. These circumstances mirror the KHJL situation in Indonesia described earlier (Elson and Unggal 2016).

End line: Enterprises Expanding, but Without the Participation of Smallholders—September 2016

A key question asked at the end of the research was whether the addition of the enterprises had succeeded in improving smallholder returns, in accordance with the impact pathway (Fig. 4).

In Xianglom, the enterprise paid a premium of about two per cent on the value of standing trees when sold directly to the enterprise, along with a small annual dividend into the group revolving fund. Ordinary growers justified selling their trees to the enterprise on the basis that social ties within the village were maintained, thereby reinforcing their preference noted earlier to deal with locals rather than outsiders, as well as receiving immediate cash payment. In Kok Ngiu, group members continued to sell through the usual middlemen since unlike Xianglom, the new enterprise had no harvesting equipment and villagers chose not to harvest themselves. It paid a dividend equivalent to USD$37 into the group bank account from the processing of about 20 m^3 of timber in 2015, or an annual return of less than one US dollar for each of the 54 members. In 2016, the Kok Ngiu enterprise provided timber to repair the group meeting hall instead of paying a dividend. In both villages, returns to ordinary growers did not meet their initial financial expectations.

While ordinary group membership numbers remained steady over the AR period, none had eventually purchased shares in their respective enterprises as had been anticipated. Reasons given to the AR team were firstly, there was a 'wait and see' attitude, while growers assessed whether or not the enterprise would be profitable. Secondly, there was a relatively high cost of entry, with the value of one share being the equivalent of USD$375 in Kok Ngiu. Thirdly, growers lacked technical expertise, such as calculating harvesting costs or mill recovery rates, which made it difficult to determine whether or not their dividends were calculated fairly. Fourthly, there was a perception that the enterprises were not transparent, with a potential investor in one village stating:

> I am not going to invest in the enterprise, since the shareholders are not my close relatives.

A group committee member in another village observed:

> I don't know how much wood has been sold by the enterprise, since it is not my role to go and ask them. I am waiting for them to send us a report.

In response to the fourth point, the enterprises pointed out that the regular costs needed to run a furniture business on a fulltime basis, and the lack of a proper accounting system, made it difficult to be fully accountable to their members. Finally, the enterprises themselves were selective in ensuring that new shareholders had the same values and work ethic as they did, with a member of the Xianglom enterprise remarking:

> Every shareholder in our enterprise has a role, and is renumerated with a dividend. We cannot pay dividends to those who don't want to contribute.

While the enterprises could offer only limited returns to ordinary members, their short-term future seemed assured. By September 2016, both Xianglom and Kok Ngiu had expanded their operations with investments in new buildings and machinery. Justifying the initial decision to maintain them under the grower group structure (Fig. 3), a 10 m^3 timber drying kiln to be jointly managed by both enterprises was donated by a development partner at the end of 2016. One committee member wryly acknowledged that "even if growers don't pay their fees or be active group members, they will still maintain their membership."

Discussion

The evidence from 4 years of AR in Luang Prabang suggests that it is difficult to form feasible and sustainable teak grower organisations that truly represent and benefit ordinary growers, despite the large investment by LPTP in group facilitation processes and certification. Quite simply, from the viewpoint of the ordinary grower, the economic benefits from group membership do not exceed the overall costs under current circumstances. This finding is perhaps not surprising, given the recent literature on the challenges faced by other regional grower organizations (Race and Wettenhall 2016; Elson and Unggul 2016; Midgley et al. 2017). Yet when this study began in 2013, there was a genuine belief amongst the development community that organized growers selling certified wood was the future of smallholder forestry, and this was reflected in the work of organizations such as TFT (Barr 2006; Perdana et al. 2012; Bowers et al. 2012; Roshetko et al. 2013).

Five factors were identified by the AR team as leading to the disinterest of ordinary members in the grower groups, with or without the addition of the enterprise unit.

FSC Certification Failed to Deliver Anticipated Benefits

The teak groups were formed due to a desire on the part of donors and government to produce FSC certified teak. Only growers who were willing to meet FSC compliance standards became group members, and even then, most only registered a proportion of their holdings until they could see whether FSC markets would deliver real benefits. When this proved not to be the case, farmers returned to their traditional market of selling standing trees via middlemen, and no longer required the group services.

The failure of FSC certification to deliver better returns to growers has also been observed elsewhere in Southeast Asia. In Indonesia, Race and Wettenhall (2016) report that FSC premiums of less than 30% are not worth the additional efforts tree growers must undertake to provide evidence of compliance, and so logs are sold to middlemen. In Vietnam, perceived risk was a factor behind twenty members leaving an FSC *Acacia* group: the price premium for maintaining a plantation to its 7-year rotation was not offset by the probability of either fire or storm damage or simply doubts that there will really be a price premium after such a long wait for a return (Hoshino and Hashimoto 2015).

The Proportion of Income from Teak is too Small to Entice Growers into Groups

This study accords with previous research on the limited economic importance of tree plantations to most smallholders within the region (Boulay et al. 2012; Obidzinski et al. 2014). With teak representing just 7% of average household income, the FAO principle mentioned of forming groups for income generation purposes is undermined. Like Newby et al. (2012), this study found that increased off-farm income and its accompanying social differentiation undermined social capital measures of groups such as reciprocity and connectedness. Wealthier group members were not available for meetings or willing to contribute their labour for joint harvesting operations, while poorer members had no capital reserves and needed to sell outside the group structure. Other growers plant teak as a means to secure land and profit from its speculation, rather than as an income stream, leaving them disinterested in silviculture.

In the rubber village of Hat Nyao by contrast, sales are made every month and rubber is the primary source of household income. Unlike rubber growers, who rely heavily on their committee to facilitate monthly sales, individuals in Kok Ngiu "may feel no reticence about taking advantage of opportunities to sell outside the group if they are offered a higher price elsewhere, since sales may be perceived to be a one-off" (Smith et al. 2017: 12).

The Needs Based Nature of Teak Harvesting is not Conducive to Group Formation

An advantage of teak for the smallholder is that unlike seasonal agricultural products which must be harvested at a certain time, teak can be harvested when it suits them. Like their Central Javan counterparts practising '*tebang butuh*' described earlier (Roshetko et al. 2013), Lao teak growers dispose of their assets not to enjoy regular income, but to pay for 'one off expenses' or overcome household shocks, thereby trading-off increased economic returns for improved social security and reduced risk. Such needs based harvesting was contrary to the expectations of

LPTP, which sought regular thinning to improve stand quality and maintain a steady market supply. Ironically, the bargaining power of poorer farmers is enhanced when collective selling is not enforced, since, if they don't like the price offered or don't need the money, they can simply leave the tree standing. Without the need for collective selling, groups are unnecessary.

The risk minimisation strategies of smallholders in Luang Prabang are consistent with the growers in Indonesia and Vietnam described earlier (Race and Wettenhall 2016; Hoshino and Hashimoto 2015). It is interesting to speculate on feasibility of forming a group were these risks to be reduced: for example, if a processing factory was able to give premium prices for small logs, would farmers decide to organise themselves, or would they default to the kind of out-grower models that already occur in Thailand and Vietnam?

Groups were Dependent on External Actors to Sell Their Legally Grown Teak

To produce FSC certified teak, LPTP and the government were the service providers while farmer groups were the receivers. In a review of farmer organisations in Lao PDR, Folkard et al. (2011: 27) cite similar examples in which self-reliance is compromised, noting that such "groups are unlikely to persist once inputs end, nor … likely to mature or evolve towards more dynamic farmer organisations on their own." LPTP made great efforts to encourage the grower groups to be sustainable, and on several occasions facilitated group restructures when it was felt that the committees were not performing. A similar dependency was observed in Indonesian grower groups, in which NGO's sought to "mobilise the community for service delivery efficiency, rather than to improve the people's ability to participate in their own development" (Race and Wettenhall 2016: 109).

While trained village Forest Officers have been promoted by the government as an integral part of the group structure, (Fig. 3), they have no official authority to register plots, measure logs or approve the sale of timber. Smith et al. (2017) recommend that they should be responsible for the official documentation needed to prove legality, thereby eliminating the need for district involvement and its associated delays and costs. This contrasts with the situation in Vietnam, where growers may legally harvest their trees if there is no objection from the village-based forest officer within 10 days (PMO Vietnam 2006).

Enterprises are Technically Feasible, But Limit Grower Participation

The introduction of the enterprises was designed to overcome some of the above challenges, and transition the group towards a commercial operation linked to the market. As subsequently recognised by Perdana and Roshetko (2015) and Anttila (2016), the presence of existing middlemen in the enterprises, with their capital and market connections, contributed to their short-term success. However, it may still be too early to assess long term sustainability, especially given that the enterprises are still receiving project support.

While technically feasible, the initial assumption that growers may become shareholders in the enterprise was unrealistic. Transparency was compromised without a regular cycle of harvest, profit calculations and dividend distributions. In an international review of successful, locally controlled forest enterprises, Macqueen et al. (2015) repeatedly emphasises the importance of accountability and transparency for sustainable business. An additional constraint on participation was that the enterprise members sought to limit the number of shareholders in order to boost operating efficiency, maximise their own returns and reduce the risk of losing their own capital.

Conclusions

This research has provided insights into teak grower group dynamics as circumstances evolved over a 4-year period, beginning in 2012 with the expectation that FSC would provide group members with reliable markets and premium prices, and ending in 2016 when the FSC certificate was discontinued due to a lack of interest. While it is true that certification failed to deliver sufficient benefits to smallholders, the insignificant contribution of teak within household income, the preference of risk averse smallholders to harvest on a needs basis and a reliance on external actors to sell their trees were equally important factors leading to the decline of groups.

While two of the three enterprise units established within the grower groups had confidently invested additional funds over the course of the AR and appear to be profitable, ordinary group members have not yet improved their returns. They have not become enterprise shareholders, and continue to sell standing trees through existing market channels. Improved returns will likely occur in time as a result of local enterprises paying higher prices for timber, rather than through active group membership. These findings reinforce the conclusions of other studies on plantation grower groups within the region, which note the challenges of sustaining groups when individual production is small-scale and irregular. Ironically, even though there are no regular group activities, the viability of the grower group is maintained by favourable government and donor policies.

For LPTP and the Lao government, an immediate implication of the research is to provide certainty to actors within the value chain through 'proof of legality', rather than certification systems which place the burden of compliance upon smallholders. In addition, simplification of the current plantation registration and harvesting regulations, and decentralisation of this process to the village level under the umbrella of the grower groups, would result in greater transparency and ownership and would improve returns to ordinary growers.

While this AR study was confined to only three teak groups, its conclusions may possibly be extended beyond Luang Prabang given the resemblances of these grower groups to others in Southeast Asia, including Indonesia, Vietnam and other parts of Lao PDR. More research is needed to understand the cultural and historical factors in Lao PDR that also influence group success. It is likely that the current debate in the literature about the merits of grower groups will continue.

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