

Learning through practice? Learning from the REDD+ demonstration project, Kalimantan Forests and Climate Partnership (KFCP) in Indonesia



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ABSTRACT

Despite a growing recognition of the importance of social learning in governing and managing land use, the understanding and practice of learning has received limited attention from researchers. In global environmental programs and projects aimed at supporting sustainable land use in developing countries, learning is often promoted but without explicit learning goals. The focus may be on capacity building and community participation, and on testing policy tools, rather than on collaborative social learning. In this study, we looked behind the rhetoric of learning in the Kalimantan Forests and Climate Partnership (KFCP), a large demonstration project for Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Indonesia. The novelty of such mechanisms, linked to international forest carbon outcomes, means that learning lessons provides a rationale for REDD+ pilot activities. We used a qualitative approach to examine the nature and type of learning that occurred in the KFCP. While the stated project aims were to support policy experimentation and apply learning, the project design was highly technical, and project decision-making did not explicitly encourage joint problem solving. Despite the project's shortcomings, we identified that learning did occur by the end of the project in ways that were different to the initial goals. Our findings suggest that flexibility and openness in project design and implementation can enable different local actors to define shared learning agendas in ways that are meaningful for them. Designing and implementing environmental projects, and learning goals within them, should attend to the needs and aspirations of those who will have to live with their long-term consequences. Learning should be integrated into international environmental programs and projects at all levels, including for policy and funding bodies, rather than focusing on local capacity building and similar project 'benefits'. Interviewees' eagerness to learn suggests that building approaches to social learning into program design has the potential to yield opportunities for learning beyond REDD+ to other forms of policy experimentation and governance innovations.

1. Introduction

Collective or social learning is considered desirable in environmental governance and in adaptive collaborative management of complex land use systems, partly as a way to grapple with complexities and work with risk and unpredictability (Leeuwis, 2004; Röling, 2002). Although desirable, social learning can be hard to define (Baird et al., 2014) and difficult to achieve, typically occurring through an iterative and collaborative process of problem solving and critical reflection (Berkes, 2009; Keen et al., 2005). Different learning types and levels have been identified, but how learning is practised, and what people understand by 'learning', is highly varied (Armitage et al., 2008; Reed et al., 2010). Learning is essential in international efforts to address tropical deforestation and climate change, which have implications for

land use policies in developing countries. This is particularly the case in Reducing Emissions from Deforestation and Forest Degradation (REDD+). REDD+ is a developing package of international policies and programs to support sustainable land use in developing countries under the United Nations Framework Convention on Climate Change (UNFCCC) (La Viña et al., 2016). As such, REDD+ departs from direct regulatory forms of governance and development finance. Over the last decade, it has entailed policy experimentation and implementation of pilot activities to learn how international funding and programs can reduce greenhouse gas emissions (Korhonen-Kurki et al., 2017; Tehan et al., 2017). A key focus of REDD+ literature has been on 'learning lessons' from pilot activities, often projects engaging with local communities, and requiring collaborative relationships at multiple levels (e.g. Angelsen et al., 2017; Jagger et al., 2009). The understanding and

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practice of 'learning' through such relationships has received less attention. To unpack assumptions about learning in REDD+ and increase the extent to which learning goals are achieved, more attention is needed on analysing the detailed processes of learning within global environmental programs and projects that seek to influence local land use.

International efforts to improve environmental governance and support sustainable land use in developing countries are often undertaken through programs and projects funded by multi-lateral or bilateral agencies. Implementation often occurs through a mix of governments at multiple levels, donors, expert advisors, and local actors, which necessitates collaborative management arrangements. Adaptive collaborative management, designed to foster social learning, is most commonly studied in discrete local (community) projects (Colfer, 2005; Evans et al., 2014, forthcoming), rather than in large programs and projects of global interest. While the diversity of backgrounds and perspectives involved in REDD+ creates a potential for social learning, studies of pilot activities reveal challenges for collaboration and problem solving in these project settings (Myers et al., 2018; Nantongo, 2017; Pasgaard, 2015; Sanders et al., 2017). Previous research on policy and governance reform agendas has identified a need for political support and dedicated financial resources to encourage social learning, as an alternative to conventional technocratic policy experimentation (Bos et al., 2013). Studies in adaptive governance and social-ecological systems have identified that learning is enabled by appropriate goal setting (Beierle, 2005), flexibility (Pahl-Wostl, 2009), knowledge transfer, leadership (Folke et al., 2005), and project timeframes (Baral et al., 2007). While these features potentially enable learning, they are difficult to build into REDD+ pilots. Pilot activities seek to deliver project benefits and training to local recipients, like some development projects. Additionally, these activities require mechanisms for measuring and valuing forest carbon and other forms of accounting and payment mechanisms (Arora-Jonsson et al., 2016; Mahanty et al., 2013; Mathur et al., 2014; Milne et al., 2018), often with complicated multi-level governance arrangements, limited or uncertain timeframes for implementation and involvement of local and indigenous communities, therefore suggesting particular challenges for social learning.

Adaptive management and social learning are often put forward as desirable within complex environmental initiatives, but without explicit learning goals or indicators for assessing performance, or scope for the intended beneficiaries (often local communities) to define the terms of their own participation. This has been observed in REDD+ studies (e.g. Myers et al., 2018; Pasgaard, 2015; Sanders et al., 2017) that echo findings of empirical research on environmental governance and international development literature (e.g. Carrier and West, 2009; Li, 2007a; Mosse, 2004; Ojha et al., 2016; Pasgaard and Nielsen, 2016; West, 2006). In these studies, externally-defined 'blueprint', or 'top-down', interventions are commonly criticised for ignoring local realities and politics (Kemerink-Seyoum et al., 2018; Ojha et al., 2016). A key argument is that it is important to investigate how project relationships are established and negotiated in practices at local levels. These project relationships are often far messier and complicated than observed in international aspirations and project design documents (Carrier and West, 2009; Mosse, 2004). While related issues, such as power asymmetries and privileging of expert knowledge (Holmgren, 2013; Ribot, 2018) have been identified, little research has specifically examined learning processes in REDD+ pilots. Informed by broader insights into learning, we analyse how learning was approached and occurred in a large REDD+ demonstration project in Indonesia. Given the experimental nature of REDD+ in learning how to reduce emissions, a demonstration project makes a valuable case to study learning in a relatively new environmental mechanism that seeks to influence local land use.

Social learning is seldom explicitly identified as a topic or gap within REDD+ literature (e.g. Mbatu, 2016). Learning has been

discussed in project documentation and in the REDD+ literature primarily as policy experimentation and governance innovations (Angelsen et al., 2017; Jagger et al., 2009; Korhonen-Kurki et al., 2017; Tehan et al., 2017). Implementing REDD+ within selected countries through learning pilots, often short-term and donor-funded projects, has usually meant 'seeing what works', not social learning. Many barriers and limitations on social learning have been indirectly, rather than explicitly, identified related to multi-level coordination, vested interests and power relations, and constraints on local participation in REDD+ projects (Korhonen-Kurki et al., 2017; Larson et al., 2019; Ravikumar et al., 2018). Many authors have identified lessons from 'first generation' projects and other implementation that could inform REDD+ design and policymaking (Caplow et al., 2011; Jagger et al., 2009; Murdiyarto et al., 2012; Mustalahti et al., 2012; Mustalahti and Rakotonarivo, 2014; Myers et al., 2016). Another focus has been on identifying lessons in other arenas, such as community forestry, forest governance and land tenure reforms as being relevant to REDD+ (Atela et al., 2015; Blom et al., 2010; Cronkleton et al., 2011; Kanowski et al., 2011; Larson, 2011; Saunders et al., 2008). Despite this large literature on 'learning lessons' from REDD+, a detailed examination of learning in REDD+ is lacking at any level, including in specific projects (with some exceptions; e.g. Mulyani and Jepson, 2015). These studies have generally not explicitly addressed the learning that occurs *during* project implementation, or what happens *after* a project has ended. Addressing this gap in empirical research on REDD+, we focused on learning in the Kalimantan Forests and Climate Partnership (KFCP), which was a high-profile, 'first-generation' REDD+ demonstration project.

The KFCP was part of the Indonesia-Australia Forest and Carbon Partnership (IAFCP) as a bilateral government initiative. It was a large, complex and relatively expensive undertaking with the Australian government investing in excess of AUD 40 million over several years. The KFCP sought to test, trial and demonstrate approaches to improving forest management and reducing emissions in Indonesia's tropical peatlands (Indonesia Australia Partnership, 2009). The project has been widely reviewed from different perspectives and its design and implementation heavily criticised. Some authors have critiqued the original public announcement, in 2007, as setting up unrealistic expectations of what could be achieved (Olbrei and Howes, 2012). The Australian Government's decision to end the project, by June 2014, was critiqued for abandoning the performance-based elements of REDD+ (Davies, 2015). Case studies have explored community participation and justice concerns (Lounela, 2015) and social learning in the initial village-level negotiations for the project (Mulyani and Jepson, 2015). NGO politics, and the leveraging of community views in opposition to the KFCP, have also been raised but not deeply discussed (Atmadja et al., 2014). These studies, along with the KFCP documentation and project design (Indonesia Australia Partnership, 2009), provide background and point to some initial perspectives on learning. While indicating some underlying assumptions about learning and challenges faced during project implementation, the nature of relationships among different actors and government levels has not fully been considered, nor has the learning associated with the project been explored in the wider project setting, in Central Kalimantan province, at provincial and district levels, as well as in participating villages. Understanding these project relationships is important for approaching land use change, and for international efforts to intervene to achieve policy outcomes in complex and contested resource environments.

Our study addressed two specific questions. Firstly, how did KFCP design and decision-making affect learning processes and outcomes? Secondly, what did learning mean for different actors? Our overall approach is grounded in a desire to understand learning processes in novel and emerging environmental programs and projects requiring local implementation. By focusing on learning, we hope to encourage reflection on policy and governance reform agendas and international efforts to support sustainable land use in developing countries.

2. Approaching learning in REDD+ as an emerging global environmental program

Social learning is essential in policy and governance experimentation for achieving desired innovation and changes, and conversely such experimentation has potential to create the conditions for social learning to occur (Bos et al., 2013). Collaborative social learning in REDD+ is subject to multi-level, multi-sector and multi-stakeholder processes (Korhonen-Kurki et al., 2012; Larson et al., 2019; Ravikumar et al., 2018). It is complicated in the forms of governance being promoted, including those that incorporate payment for environmental services (PES) and other market elements within a rationale of piloting activities to learn how to reduce emissions. REDD+ learning pilots differ, for example, from international development projects, which may have established project cycles for monitoring and evaluation. A learning pilot is a form of experimentation within global forest and climate governance. It has political implications and entails complex interactions with local power relations and livelihoods in diverse sites and countries (Milne et al., 2018).

Different approaches to social learning, policy experimentation, and learning through project cycles have origins in international legal scholarship (Armeni, 2015; Hoffmann, 2011; Overdevest and Zeitlin, 2014), monitoring and evaluation of development projects (Mosse, 2004; Phillips and Edwards, 2000; Saito-Jensen and Pasgaard, 2014), and adaptive environmental governance (Folke et al., 2005; Holling, 1978; Walters, 1986). Experimentalist governance, in international law, is concerned with flexible, dynamic pathways. Rather than legal prescriptions, such experimentation depends on the dynamics of interactions of actors and processes at multiple levels (Tehan et al., 2017, pp. 339–345). One recent study identifies how ‘processes for REDD+ implementation’ opened up new political arenas for reform in Indonesia (Afiff, 2016). Another study of REDD+ in Indonesia highlights that policy experiments are unpredictable and not linear (Korhonen-Kurki et al., 2017). In that study, REDD+ was found to depart from direct regulatory forms of governance and implementation has proceeded under conditions of ‘institutional uncertainty’. To harness learning opportunities, many authors have called for REDD+ processes to be flexible, rather than applying a ‘one-size-fits-all-approach’ (Nantongo, 2017; Pasgaard, 2015; Sanders et al., 2017). They emphasise that political organising over time can support multi-level collaborations (Ravikumar et al., 2018) and resonate with key elements of learning, as we elaborate below.

2.1. Learning concepts and levels of learning

We identified several learning concepts. Experiential learning explores how people learn in practice and the transformation of knowledge through their applied experience in an iterative cycle of: concrete experience; reflective observation; abstract conceptualisation (concluding); and active experimentation (Kolb, 1984; Kolb et al., 2001). This kind of learning has been described as ‘learning by doing’ (Leeuwis, 2004) and very loosely fits the stated desire to learn-by-doing in REDD+ and its climate policy antecedents. A distinction is made in experiential learning in which ‘conclusions drawn by people themselves on the basis of their own experiences tend to have a greater impact than insights formulated by others on the basis of experiences that learners cannot identify with’ (Leeuwis, 2004, p. 149). We consider that social learning incorporates experiential learning in forms of collective action (Röling, 2002) through collaboration, problem solving and reflection (Berkes, 2009; Keen et al., 2005; Leeuwis, 2004). Social learning is both a condition and outcome of collaborative relationships and interactions between different types of knowledge (Berkes, 2009; Reed et al., 2010). Many authors have recognised imbalances of power and knowledge, the role of risk and ethical ambiguities faced by different actors, and their varied willingness to collaborate to pursue goals that may be conflicting (Armitage, 2008; Armitage et al., 2008; Reed et al., 2010). They have

also identified that successful learning, leading to policy and governance innovations, is negotiated through lengthy social processes that often do not have a clear ending (Armitage, 2008; Armitage et al., 2008).

Research has further distinguished single-loop learning that corrects errors in routine, double-loop learning that examines values and policies, and triple-loop learning that affects the design of norms and protocols (Armitage et al., 2008; Reed et al., 2010; Röling, 2002). For example, in a classroom setting, if, only a teacher can articulate or present a problem (the task) and determine/suggest the tools (strategies/approaches) to be used, it is difficult for students to pose questions and offer strategies (Stone et al., 2012, p. 77; see also, Hodkinson et al., 2007). This hierarchy between the teacher and students offers limited scope for critical reflection and problem solving. It indicates single-loop learning, such as what might occur in a relationship between the ‘expert’ and ‘project recipient’ if knowledge transfer is assumed to move downward in only one direction. Triple-loop learning, by comparison, is potentially transformative for individuals (Evans et al., 2019), and can reach beyond an individual to generate new forms of collective action and problem solving (Armitage et al., 2008). It can occur ‘when we share our experiences, ideas and environment with others’ (Keen et al., 2005, p. 9). Triple-loop learning is considered important for governance innovations, and it has also been described as ‘learning about learning’ that emphasises the reflection stage in the discovery and questioning of social practice (Leeuwis, 2004).

All learning is situated in specific relationships and conditions. One way of conceptualising change is as proceeding in ‘a stepwise fashion moving from single to double to triple loop learning’ (Pahl-Wostl, 2009). Incorporating the concept of experiential learning outlined above, along with literature on adaptive governance, *applying* learning should not imply a chronology such that one step necessarily leads to the other. Single-loop learning does not necessarily lead to problem solving and critical reflection. It is important to consider the role of experiential learning, and the conditions for learning to occur, in whether those engaging in learning practices are supported, or constrained in higher level learning. It is important to add that even, in a classroom, if a teacher imposes a specific task, ‘the students, through resistance or cooperation, may in fact transform the task into something other than what the teacher had originally envisioned’ (Stone et al., 2012, p. 76). In other words, learning is dynamic and involves negotiation, which may be more important to learning outcomes than the task or project deliverables.

2.2. Key elements of learning in adaptive environmental governance

Many elements contribute to learning in environmental governance and adaptive collaborative management of complex land use systems: goal setting, adaptability and flexibility, knowledge transfer, appropriate leadership, project timeframes and duration, interaction between bottom-up and top-down approaches, and stakeholder participation and inclusion at all levels (Elbakidze et al., 2015; Pahl-Wostl, 2009). Appropriate and deliberative processes are needed to encourage social learning (Schusler et al., 2003). Informal networks can also play a crucial role in social learning through knowledge integration and flexibility (Pahl-Wostl, 2009). Bridging organisations can encourage collaboration and interaction between different actors and kinds of knowledge in complex project settings (Berkes, 2009; Leys and Vanclay, 2011). Network building and negotiations are considered ‘integrative’ when they encourage problem solving to generate shared goals and meaning (Leeuwis, 2004, p. 169). Simplistic, technical or externally-defined goals can limit flexibility and learning opportunities (Dale, 2003; Leeuwis, 2004) often by using tools and indicators for assessing performance such as program logic (Ebrahim, 2003; Sage et al., 2013). Such goals may not be about learning at all, but about controlling information and convincing others to accept already-made decisions. Social learning requires shared goals and cannot be defined as having a

single goal or goals isolated from each other (Reed et al., 2010; Van Assche et al., 2013). Broad social goals that transcend the immediate interests of those involved in a decision can enhance social learning by fostering trust and reducing conflict (Beierle, 2005).

Monitoring and evaluation in development projects identify a need for dialogical and nuanced approaches at all stages of the project cycle from design to implementation and assessment (Dart and Davies, 2003; Phillips and Edwards, 2000). These approaches are important for learning outcomes. Flexibility within project design and timeframes is important to develop trust and shared understanding (Bos et al., 2013) and transition toward a longer term focus (Baral et al., 2007). For example, helping farmers to adapt to change is not captured by a narrowly-defined technical-economic approach that may limit learning opportunities (de los Ríos et al., 2016). The group setting is important in whether those involved feel safe and comfortable, and share a willingness to collaborate, respect each other's differences and empower each other (Elbakidze et al., 2015). Within literature on adaptive governance, social learning occurs through inclusive leadership and encouraging participation (Folke et al., 2005). Appropriate leadership can provide guidance and steering, facilitate others to take responsibility and appropriate action, and encourage conflict resolution and dialogue (Carmeli and Sheaffer, 2008; Leeuwis, 2004; Senge, 1990).

Participant-centred or 'bottom-up' frameworks are found in adaptive collaborative management involving local communities (Colfer, 2005; Evans et al., 2014, forthcoming). Such frameworks potentially accommodate different learning styles and perspectives, but require attention to barriers to effective engagement and stakeholder participation. 'Barriers' are not only about the experience of learning recipients, but depend on specific relationships and conditions. For example, an assumption that 'people cannot do it themselves' implies learning deficits (Leeuwis, 2004, p. 16). In this scenario, one-sided knowledge transfer devalues non-science perspectives and indigenous knowledge traditions (Blaser, 2013, 2009; Davidson-Hunt and Michael O'Flaherty, 2007; Natcher et al., 2005). 'Outside' experts often provide what is 'missing' in capacity building and training, rather than treating local participants as rights-holders and co-contributors (Li, 2007a; Ribot, 2018). It is therefore essential to carefully reflect on assumptions about learning and how different actors are positioned and interact in specific conditions and project relationships.

3. Research methods

The case study incorporated ethnographic techniques within multi-level analysis of REDD+ (Saito-Jensen, 2015). The focus of this study is in Central Kalimantan province, where opportunities for social learning were primarily seen in the implementation of the project. We used a qualitative approach to understand the experience and perspectives of different actors (Table 1) directly or indirectly involved in KFCP design and/or implementation. The study is based on approximately 10 months of fieldwork conducted in Indonesia between 2013 and 2015. In Central Kalimantan, we selected the KFCP for this study due to its high political profile, size and complexity. At the time of fieldwork, it was the most advanced REDD+ project in the province (see, Sanders et al., 2017). The study area comprised the project site of 120,000 ha in Kapuas district. A total of seven villages participated in the KFCP, and we

Table 1
Summary of field data used to study learning in the KFCP project.

Actor type	Total respondents	Total interviews / field data entries
Project	11	25
Government	12	16
Expert	9	8
NGO	13	14
Villager	39	42
	84	105

focused on five villages based on their land use and social characteristics. The villages are Mantangai Hulu and Kalumpang in the southern section, Katunjung and Tumbang Mangkutup in the middle section, and Petak Puti in the northern section immediately above the project site (Fig. 1).

Qualitative social research methods used were participant interviews, observations, and document analysis. While we sought the perspectives of senior project actors involved in the project design, explicitly, we focussed in Central Kalimantan. Some interviews were conducted at the national level. We did not conduct interviews with the Australian Government, and this side of the bilateral partnership has already been documented (Davies, 2015). Interviewees included government officials, project managers and field staff, local academics, NGOs and activists, and villagers. Some interviews were repeated and/or combined with observations at project workshops and meetings, and in villages (Table 1). In each village, we sought to interview a cross-section of people who had different roles and experience of the KFCP, including village and customary leaders. Separate interviews were conducted with women who were active in project implementation. Fieldwork was fairly evenly spread across the five villages shown on the map (Fig. 1) with an average of three visits to each section lasting approximately one week, and shorter trips for observation of project activities. NVivo qualitative data analysis software (QSR International Pty. Ltd., 2015) was used to organise the data for thematic analysis. During the analysis, we compared views across and between actor types (Table 1) and triangulated these expressed views with participation observation of meetings and other project documentation.

4. Case context

The Australian Government invested significant financial resources in the Indonesia-Australia Forest and Carbon Partnership (IAFCP) (see, Atmadja et al., 2014; Barber et al., 2011; Davies, 2015). As a high-profile REDD+ demonstration project, the main goal was:

[T]o demonstrate a credible, equitable, and effective approach to reducing greenhouse gas emissions from deforestation and forest degradation, including from the degradation of peatlands, that can inform a post-2012 global climate change agreement and enable Indonesia's meaningful participation in future international carbon markets. (Indonesia Australia Partnership, 2009, p. 2)

Learning objectives were not explicitly developed within the overall project design, but the design implied that learning would occur by piloting activities on the ground. Not all the intended project components were fully implemented (Table 2).

The IAFCP had a bilateral structure (Fig. 2). The main partners in Indonesia were the National Forestry Department (MoF)¹, the National Development Planning Agency (BAPPENAS), and the provincial and district governments. Project decision-making was dispersed by inter-agency relations in Australia and Jakarta (Barber et al., 2011; Davies, 2015). In Jakarta, expert consultants and a private consultancy company, Aurecon-IDSS, were contracted. In Central Kalimantan, project offices were established at provincial and district levels. Kapuas District Government was nominated as a key partner. A working group, established at the district level, was indirectly linked to the Steering Committee at the national level (Fig. 2). The field teams had responsibility for operational decisions. The teams were drawn from the NGOs, CARE International for community outreach and the Mawas Conservation Program (BOS Mawas) for monitoring and research. BOS Mawas is a long running program focusing on forest conservation for orangutan habitat (Fig. 1). Prior to the KFCP, both NGOs were involved in the Dutch Government-funded Central Kalimantan Peatland Project (CKPP) (Myers et al., 2018). Local NGOs were mentioned in project

¹ Currently, Ministry of Environment and Forestry.

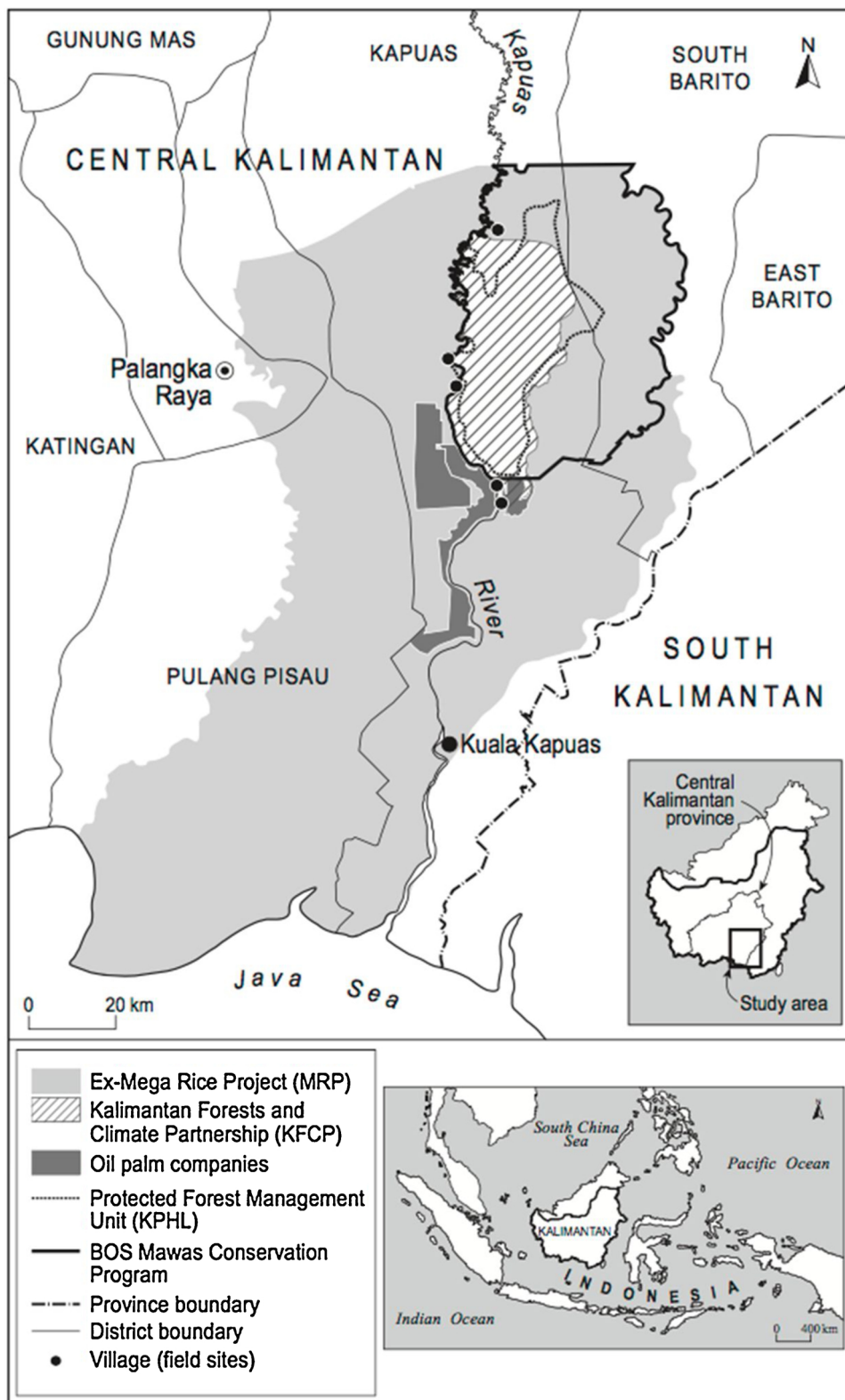


Fig. 1. Map of study area.

documentation (Indonesia Australia Partnership, 2009) as potentially supporting the village-level processes through grants or supervision by the implementing partners, but neither option eventuated.

The KFCP focused in tropical peatlands that store vast amounts of carbon underground. Land use change processes associated with degradation and fires release greenhouse gas emissions (Hoscilo et al.,

2011; Page et al., 2009, 2011). The project site, in Kapuas district, comprised intact tropical peat-swamp forest in the northern section, and degraded peatlands in the southern section. The site is part of the former 'Mega Rice Project' region (Fig. 1). In 1996, the MRP attempted to convert more than one million hectares of lowland peat-swamp forest into a rice-growing region. It divided the region into five 'blocks',

Table 2
Project components.

Project components as designed ^a	What was implemented ^b
Blocking canals to raise the water table and rewet the peat will inhibit oxidation, including the incidence and spread of fire.	Blocking the main canal did not proceed despite preparation that included a traditional ceremony (<i>manyanggar</i>) and payments to affected customary land owners. Handmade palisades used to block small canals (<i>tatas</i>) were destroyed to reopen logging routes after the project ended.
Re-establishing tree cover in highly degraded areas by encouraging natural regeneration and re-planting will help raise soil moisture levels and humidity, thus further reducing fire risk especially in dry years. Introduction of inputs-based payments to villagers as part of the reforestation program will progress to results-based payments for reducing peatland emissions.	Seedlings were grown in nurseries and planted in trial sites in five villages covering around 2000 hectares. Inputs-based payments used for the reforestation trials were discontinued in the final year of implementation.
Livelihood interventions that provide incentives to adopt farming techniques or other livelihood options that do not require the use of fire in peatlands nor depend on illegal logging.	Livelihoods packages containing rubber seedlings and other livelihoods inputs were delivered to each household, and farmer training was provided in the final year.
Whole-of-dome approach: plan and implement emission reduction interventions in the peat swamp forests, such as canal blocking, rehabilitation of degraded forest (promote natural regeneration and replanting), fire prevention /suppression, clarify land use and use rights and develop alternative livelihoods to aid in fire prevention, training fire suppression crews, early warning system, education within the context of the entire peat swamp forest ecosystem formed by a single dome.	Fire education and training, and several rounds of mapping were undertaken to clarify land use and rights. Several community forestry proposals (<i>Hutan Desa</i>) received national government approval.

^a Source: (Indonesia Australia Partnership, 2009, p. 17).

^b Source: field data and observations.

cleared forest, and constructed large drainage canals, but the project was abandoned because the ecological conditions were not suitable for industrial rice cultivation. A rush of illegal logging followed. The removal of vegetation and drainage dried out the peat and made it susceptible to fires, leading to degradation of the southern section of the project site. The village settlements are scattered along the river, and

the mainly indigenous population, estimated at around 10,000 people, identifies as ethnic Dayak Ngaju (Barber et al., 2011; Indonesia Australia Partnership, 2009). Traditional land practices using fire are prohibited and swidden agriculture has declined. Livelihoods activities include logging and gold mining, rubber and smallholder crops, and fish ponds (*beje*) (see Atmadja et al., 2014; Suyanto et al., 2009).

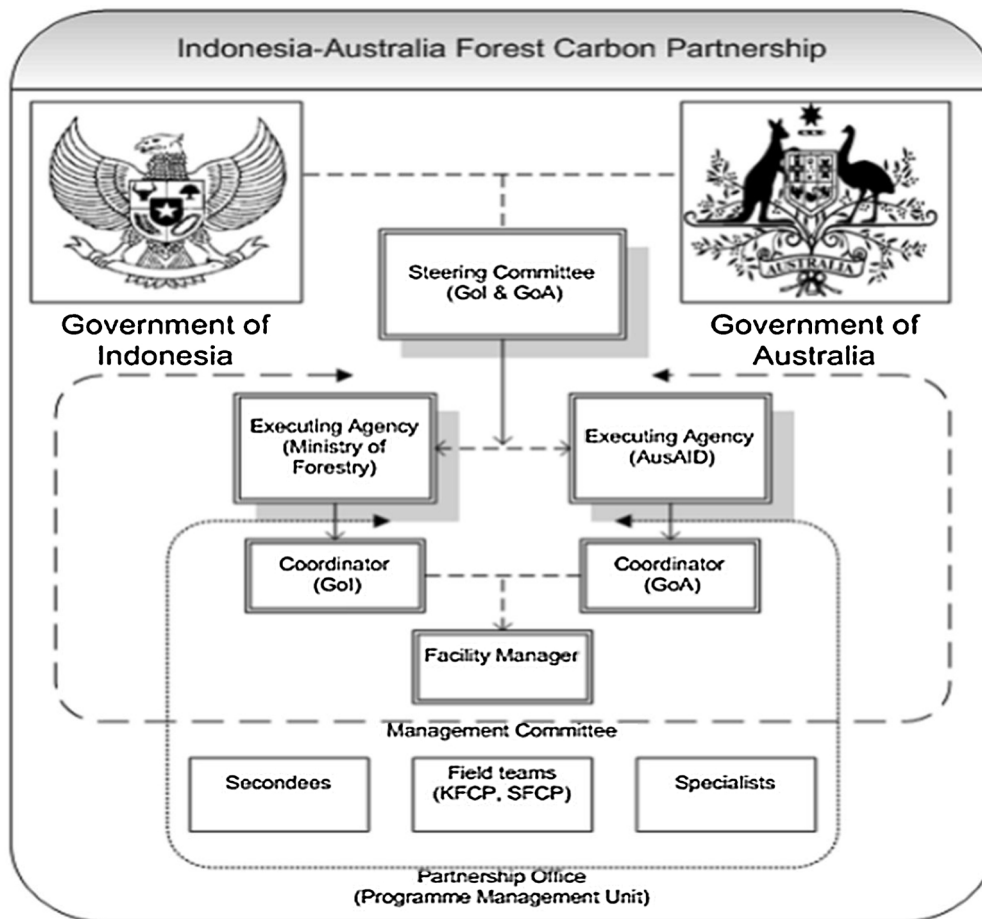


Fig. 2. IAFCP bilateral structure.
Source: (Barber et al., 2011).

Many studies have revealed unanticipated social and environmental consequences of accelerated interventions in the MRP region (Galudra et al., 2011; McCarthy, 2013; Mulyani and Jepson, 2015). Competing pressures from other land uses, including forest conservation in the northern section, and nearby oil palm plantations and other land development in the southern section, were not fully anticipated. In this complex environment, the KFCP proved far more difficult to implement than specified in the project design (Barber et al., 2011). In the face of mounting criticism, the Australian Government decided, in early 2013, to prematurely terminate the project (Davies, 2015, p. 40). This decision led to project funding being cut but allowed for one further year of implementation. The IAFCP (including KFCP) officially ended in June 2014.

5. Results and discussion

Building on theoretical considerations of learning in Section 2, we have organised the results around the five learning themes: goal setting and flexibility, knowledge transfer, appropriate leadership, applying learning, and project duration and risk. We consider how learning occurred in ways that were not anticipated in the intended goals, firstly, by examining the initial communications around the project design and implementation under the theme of goal setting and flexibility. Secondly, we examine what was implemented in the villages, and aspects of villager learning in the model of consent and training provided, under the theme of knowledge transfer. Thirdly, we examine project leadership in aspects of decision-making. Fourthly, we consider how learning was applied in a contested resource environment, and finally, limitations of avoiding risk and fast-tracking results. We found it helpful to incorporate discussion of these themes within the results, followed by a synthesis and conclusions.

5.1. Goal setting and flexibility

5.1.1. Project design, externally-defined components and emphasis on technical processes

After the KFCP was announced in 2007, international consultants were employed and research was undertaken to inform the design and implementation. The overall project design (Indonesia Australia Partnership, 2009) emphasised local participation with a significant focus on village negotiations, as we elaborate below. It identified facilitating dialogue among levels of government, building local ownership, and flexibility and adaptability, which are important elements of learning. However, the reliance on teams of consultants (national and international) contributed to perception, widely shared among government officials, academics, and NGOs in Central Kalimantan, as well as the community participants, that there was insufficient opportunity for them to contribute to designing the project components. While project documentation articulated in detailed technical processes related to reducing peatland emissions, the monitoring system, and the payments mechanism, much less attention was paid to network building at provincial and district levels and strategies to establish local ownership.

A willingness to collaborate is needed for social learning (Elbakidze et al., 2015), and in the KFCP, a collaborative process was never established in dialogue with local partners to learn from, and involve them in a search for solutions. While there was some consideration of local NGO involvement in the design, it was not given priority. The district government was a key partner, but had little influence on how the project was established. District officials in Kapuas expressed support for the KFCP, but indicated that they had not been treated as a full partner. A provincial level interviewee in-charge of REDD+ coordination in Central Kalimantan reported that the experience of the KFCP made some district officials feel 'frustrated' and less interested in REDD+ after the project ended (November 2014). This was echoed by several project staff:

When we started, the KFCP got really bogged down with its relations with district government... it just seemed that the district government and KFCP never got to properly know each other. District government didn't always have particularly realistic expectations, and the KFCP seemed pretty unresponsive and inflexible. (Project manager, February 2014)

The way the IAFCP was set up was from the national level down, it was created at a very high level... it should have been designed for the district with KFCP as the pilot area for the district instead of the other way around. (Project manager, December 2014)

The diversity of backgrounds and perspectives among district officials, project managers and other actors, had potential to provide a basis for social learning. However, disagreements emerged in the absence of a rigorous process to establish trust and a shared learning agenda (cf. Bos et al., 2013). The intended project recipients, including district government, not only villagers, had limited ability to influence the project design, which limited their ability to contribute to implementation and ultimately their learning.

5.1.2. Local opposition in Central Kalimantan; implications for learning

Perceived unresponsiveness and inflexibility, combined with an early reliance on consultation teams for design and site selection, led to local opposition. Criticism of the project was strongest among local NGOs:

The problem with the KFCP happened in almost every single project that has ever been established here. It is because people out there made their own targets, their own goals, but the application is here, under these conditions. I think that the KFCP deserved to fail because they created this project on their table, and they were not from here as well. Of course then it failed. (Local NGO / Consultant, February 2015)

Local NGOs frequently criticised the KFCP for failing to respect and put trust in the community who participated in the project. Several also noted that project teams had not engaged and listened to them. In turn, project staff described the hostility directed at them and saw themselves not as having relations of power over local NGOs but as pawns in NGO manoeuvrings (December 2014). This issue was made worse by the inflexible bilateral arrangements for decision-making, as it meant that potential bridging organisations (Berkes, 2009), such as district government and local NGOs, did not perceive that their knowledge was recognised within project design and implementation. A need for funding bodies, planners, and decision-makers to recognise and engage different expectations and forms of knowledge is consistent with other studies of top-down environmental management and many REDD+ projects (e.g. Kemerink-Seyoum et al., 2018; Myers et al., 2018). What is less well understood, using the KFCP study, is how a flexible design approach might have encouraged joint problem solving. Many local actors, including some NGOs, were initially interested to contribute to the project. Greater flexibility and focus in their involvement may have generated a shared understanding of project goals, and identification of learning objectives that better responded to the interests of all parties.

5.2. Knowledge transfer

5.2.1. Obtaining consent in village negotiations

The KFCP began before the establishment of international standards and safeguards for REDD+ projects. There was a significant focus on village negotiations in the Village Agreements (VAs) (Week et al., 2014) that formed the basis for implementation in participating villages (for further information, see, Atmadja et al., 2014; Barber et al., 2011; Mulyani and Jepson, 2015). There were two rounds of negotiations, at the beginning of the project, and for the final year, at the time Mantangai Hulu and Kalumpang villages in the southern section decided not to continue with the project. The VA documents specified principles and outlined technical terms and grievance procedures. The first round

provided a budget for each village to deliver agreed results, financial management and procurement of material and labour for the reforestation activities. The livelihoods packages were a focus in the second round (Table 2). Consent to the KFCP, based on each VA document, applied to the whole village. Many villagers reported that they initially mistrusted the KFCP, based on prior experience of interventions, which led to stipulation, in VA documents, that the 'KFCP will never try to change the legal status of land without the consent of villagers through village meetings' and will 'respect and acknowledge customary laws'. The VA negotiations, involving the whole village, departed from a common practice, reported in earlier projects, of obtaining 'consent' through elected officials and village elites. As one project member noted, 'there was this history of whoever turned up automatically did whatever they liked' (December 2014).

Social learning resulted from taking the time to hold repeated meetings during the VA negotiations, which created some trust and confidence among villagers. It encouraged dialogue, and another study of the project found that opportunities for villagers to share and respect different viewpoints led to social learning (Mulyani and Jepson, 2015). Through frequency and repetition of meetings, many villagers, especially women, reported increased confidence in learning how communicate their opinions:

Previously we [women] were too afraid to say our opinions and during KFCP more and more women became brave to raise their voice in meetings... The KFCP was fair because both men and women were allowed to participate in the project... Everyone was perceived equally by the project. If there were people who didn't participate in the project, it was because they chose to not participate. (November 2014 – female in Katunjung village)

All women interviewed saw their participation as equitable relative to men, however gender disparities affected their ability to contribute to meetings at the provincial or district level. Project staff reported that women did not always voice their opinion outside of the village, and in one reported instance a husband called his wife back to the village, falsely reporting their child was sick, but then took her place at the meeting. This illustrates constraints on projects seeking to engage women, and their learning, through such meetings.

Many villagers reported that they were adequately consulted about the project, but did not fully understand their contractual obligations in the payments mechanism, as we outline below. Some villagers reported that their ability negotiate, during the VA process, was constrained by poverty and few alternative choices. Once each document had been signed, they and the KFCP were bound to the agreement. It can be inferred that villagers overall, did not have clear expectations about learning outputs/outcomes when they consented to the project. Difficulties in communicating or misunderstandings between villagers and project staff were commonly reported, and limited ability to request changes in budgets and other specified items was a source of frustration among many villagers. While the initial village negotiations provided a good starting point for future collaborations and social learning, the format of the VAs reduced flexibility and reciprocity in exchange of knowledge and ideas. The VA process was treated as gaining consent, but social learning and understanding the aspirations of people and what they are interested in learning needs flexibility in the form of the agreement.

5.2.2. Training and other skill development in villages

In participating villages, there was a strong emphasis on educating villagers reduce peatland emissions from logging and burning, village development planning for improving self-management capacity, and vocational learning, such as farmer training. The payments mechanism in the reforestation trials (Table 2) led to both frustration and learning in villages. 'Management' teams were established in each village, the members of which were democratically-elected to supervise the work and manage the payments, and other villagers were appointed to

oversee the management teams. Most villagers (including those who emphasised tangible benefits) disliked the way their performance was assessed, the frequency of the payment instalments (*termin*), and many complaints centred on the management system. From each work package, a retention payment (five per cent of the total monetary amount) was withheld until all specified activities were completed, then each village used this amount for local development purposes. Instances of corruption and elite capture were reported in two villages. Project staff responded by developing a monitoring tool, the number of payment instalments was reduced, information was placed on public notice boards, and a complaints box was installed in each village. In Petak Puti, villagers described the KFCP as having helped them to learn about transparency in financial management (December 2014). In other villages, lingering frustration with the management system outweighed any income and perceived learning benefits. The payments mechanism implied a quid pro quo relationship in which the KFCP fulfilled its obligations specified in the VA documents (cf. West, 2006, pp. 220–221), whereas many villagers desired greater flexibility to negotiate the terms of their participation.

As well as desiring greater flexibility and reciprocity, many villagers struggled to identify with some land management practices that the KFCP sought to introduce. For the nurseries, villagers were able to select from local species that grow in wet conditions. Outside experts (scientists) identified the species based on the assumption that the canal blocking would rewet the peatlands. Their selection and planting in orderly rows allowed for monitoring of the trial sites. This diverged from traditional land practices. Planting rubber and other cash crops for livelihoods purposes establishes customary land ownership, based on labour inputs. The lack of attention to this issue contributed to a land dispute in Kalumpang, where a group of villagers sought to establish an oil palm smallholding next to the reforestation site. In other villages, complaints centred the role of the management teams and 'social jealousy' over preferred roles. Also, planting trees on degraded peatlands was physically demanding, and many villagers perceived that the income provided was inadequate for this work. Villagers that opposed the KFCP reported that any benefits from training and income were small payback for their participation (a point made in Li, 2007a, p. 277). It was hard for women to participate in the tree planting if they had small children, but they participated in the nurseries because they could grow seedlings close to home. Most women who participated in the nurseries emphasised the tangible benefits of income and vocational learning:

We have learned a lot from KFCP project. In the past, we didn't have experience in making nurseries for producing seedlings, and now we know how to do this by ourselves. We also could weave rattan for the palisades [to block the small canals]. We can do everything as long as people just assist us for how to do it. We don't need to learn too much theory, the most important for us is to practise it in the field. (November 2014 – female in Katunjung village)

Two mining companies undertook restoration work in Sei Ahas and Katunjung villages using reforestation program methods, but not the payments mechanism, after the project ended. An ability to contribute to problem articulation and strategies is considered important for higher level learning (Hodkinson et al., 2007; Stone et al., 2012). While technical or vocational learning, and income and livelihoods inputs, were beneficial to many villagers, it did not fulfil desired reciprocity wherein villagers anticipated that they would enter into a continuing relationship with the project.

5.2.3. Applied experience and recognising villagers' agency

Rather than the project teams learning how to collaborate with villagers on a suitable format for KFCP, a key learning for villagers in how to negotiate agreements was not fully captured by an emphasis on consent. Initial specification regarding what things ideally should have been learned and who might have learned them, in the project design elements, would have provided a clearer indication of how

collaborative relationships might have developed in the KFCP villages. Many villagers reported, or gave examples of learning how to negotiate in village meetings, and with external actors, through their experience of engaging with the KFCP. Several villagers reported that multiple NGO visits had fuelled confusion about how the KFCP intended to use their land in the future, but they strategically engaged in project debates:

We gained a lot of knowledge by having KFCP in the village. If outsiders (uluh luar) had negative opinions about KFCP, they saw it from their own perspectives rather than the perspectives of the people in the village who were directly involved. There were problems of course, but nothing that was too serious, and problems can always be addressed... I often intentionally reported the problems with KFCP to the media, so the project could fix the issues and people would pay attention to this. (March 2015 – male in Tumbang Mangkutup village)

After the KFCP ended, a group from this village used the VA document to self-advocate in negotiations with nearby conservation actors, including BOS Mawas, to provide them with a written agreement and spell out the obligations and benefits to them in a tangible way. Applied experience and diversity enables a community to adapt and survive, and therefore this is more important for learning processes than creating new formal institutions and teaching by experts (Van Assche et al., 2013). This applied experience is illustrated by villagers learning how to self-advocate and strategically engaging with external actors during implementation, and after the project ended.

5.3. Appropriate leadership

5.3.1. Too much control impaired communication and problem solving among project staff

Higher level political expectations about the KFCP (Davies, 2015), combined with historically tightly organised decision-making in government bureaucracies, were averse to risk of project communications and implementation not going to plan. The bilateral structure (Fig. 2) concentrated decisions in government bureaucracies, both in Jakarta and Canberra. This hindered the ability of field teams to respond adaptively to local needs and aspirations, and engage in joint problem solving with local actors. This view was consistently expressed in interviews with project staff, many of whom reported too much ‘control’ from the Australian Government. All those hired to work on the KFCP were not allowed to talk to the media without permission from the Australian Government (through AusAID in Jakarta). Attempts to reduce the risk that negative messages would get into the media closed off opportunities for dialogue and problem solving. One team member described the lack of response from senior project leaders to negative media coverage as ‘nothing—stone wall silence—and that I think had more of a negative implication than the stories themselves’ (February 2014).

Leadership, organisation and communication within the team are critical to the success of any project, as well as the establishment of dialogue and trust. The field teams faced competing pressures within the project, in the villages, among NGOs, district government, and others. Their roles, based on the contracted organisation and field specialisation, reduced collaboration among them. No manager had clearly-defined overall responsibility for what happened in each village, and no team manager had responsibility for working with district government. Some operational rules were unclear, and several project staff reported having limited ability to make adjustments without higher level approval:

There were 26 different bosses at any one time, the hierarchy, and because it was double government and both governments were involved, and then you have national, provincial, district governments, and then you have KFCP bosses, and then IAFCP bosses, and then Aurecon-IDSS bosses, and then you have Australian Government representatives and

the Indonesian government, and then getting things, particularly things that are going to be received by community, or put into a media environment... It was just so bureaucratically difficult to move forward with things. (Project Manager, February 2014)

Another staff member described, ‘no leadership, no single leadership’ at any level on the side of either the Australian or Indonesian Government (December 2014). In the final year of implementation, a new project director was appointed based in Central Kalimantan. This person reorganised the project office, clarified staff roles, conducted meetings with stakeholders, and resolved an issue of *per diems* that encouraged district officials to contribute to the project. These actions led to an increase in trust and respect between the project teams, district officials and villagers. For example, one villager described a visit from the director to his house to discuss his concerns. This visit did not overcome earlier disagreements, but this villager, and several other interviewees from district government, indicated that they felt listened to and respected. They reported that the KFCP had begun to listen to them. Project staff in Kapuas reported improved morale and an easing of tensions, which they attributed to improved leadership combined with reduced expectations from management at higher levels and an easing of tensions with NGOs following the announcement that the project would end. Our analysis affirms the importance of appropriate (Carmeli and Sheaffer, 2008; Leeuwis, 2004; Senge, 1990) and inclusive leadership (Folke et al., 2005) in complex environmental initiatives. It shows that qualities of leadership, in establishing trust and managing conflict, can enable dialogue and problem solving. Such qualities are important for creating the conditions for collaborative social learning, but require clearly established lines of communication, guidance and autonomy to encourage problem solving and conflict resolution at all stages of the project cycle.

5.4. Applying learning within a contested resource environment

5.4.1. Integrative negotiations and deliberative mapping processes

While the design of KFCP recognised the historical and legal complexity of the site (Indonesia Australia Partnership, 2009), it sought to introduce a land management system, using the payments mechanism, into an environment where villagers do not have legal certainty over land tenure and customary rights. As a demonstration project, the KFCP did not have management authority for the site. Instead, there is an overlay of national forest zoning. Within that zoning, the project design specified support for the establishment of the Protected Forest Management Unit (KPHL) at the district level.² The KPHL created additional boundaries (Fig. 1) and another layer of authority in a contested resource environment where land use is rapidly changing (Galudra et al., 2011; Sanders et al., 2019; Thorburn and Kull, 2015).³ A variety of mapping activities were conducted over several years to address villagers’ concerns about land tenure and customary rights. In several villages, community forestry proposals offered a track for national government legitimisation of use rights within forest zoning. This benefitted some villagers as they navigated land disputes that were not directly related to the KFCP, but did it not provide them a track for state recognition of customary land claims (see, Sikor and Lund, 2009 on state authority and legitimisation). In the final year, comprehensive mapping was undertaken. Known as ‘Village Land Use Planning’ (*Pola Tata Guna Lahan Desa* or PTGLD), this mapping fitted the integrated ‘whole-of-dome approach’ (Table 2), yet it was far more interventionist on land

² Forest Management Units (Kesatuan Pengelolaan Hutan or KPHs) are a national forestry initiative (see, Bae et al., 2014; Kim et al., 2015 for further information).

³ The legal framework and designated state authority have implications for the appropriate design of the project to address villagers’ concerns about rights over the resources and who has use/ownership rights over the land included in the project, and surrounding the project site.

tenure and rights than had been envisaged at the beginning (Indonesia Australia Partnership, 2009).

PTGLD is an example of adaptive collaborative learning in which project staff explicitly sought to engage key stakeholders for deliberation and conflict resolution. The KPHL manager was directly involved in the village-level deliberations and mapping exercises for PTGLD. Local NGOs and villagers, including some that earlier had criticised the project, worked as PTGLD facilitators. They learned technical (e.g. related to GIS) and tactical skills in how to negotiate and validate customary land claims. Project staff described their involvement in PTGLD in terms of personal connection to villagers, indicating a desire for the project to engage in joint problem solving. They described PTGLD as applying their learning about complex land processes by engaging local actors and working with bridging organisations (Berkes, 2009) such as local NGOs. They sought to mediate land conflicts and bring together villagers, and through the KPHL, to discuss forestry rules and land use not directly related to the KFCP design. Through PTGLD, they aspired to establish 'integrative' negotiations (Leeuwis, 2004, p. 169) for encouraging conflict resolution and strengthening the negotiating position of villagers in relation to the KPHL, and in relation to nearby oil palm plantations. The visibility of village land use on high quality satellite images enabled villagers to directly overlay national forestry maps and boundaries, and to deliberate on where and how the forestry rules applied them, and whether they considered these rules appropriate to their current and future land use. Most villagers saw the deliberative mapping as fitting their strategic interests but reported limited time to apply their learning through deliberations, and from the mapping results, before the project ended.

5.4.2. Constraints on process and participation

Unlike the exhaustive consent process for the VAs, not everyone in each village was involved in the mapping. Selection of villagers based on their knowledge and interests meant that women had very little involvement, so their land use and livelihoods were not directly included in the mapping deliberations. There was insufficient time to ensure that all villagers understood and agreed with the mapping results, and then to consolidate and apply learning in each village. There was also insufficient time to build district government understanding and support for PTGLD, and therefore mapping results were not legally recognised at the district level. Given the weakly established collaborative relationship between the KFCP and KPHL, there was not a firm basis for trust and problem solving. The KPHL later rejected mapping results as not fitting with forestry rules, while acknowledging the importance to villagers:

PTGLD is now part of the mindset of the community, so it's hard for us to change that. We just try to make it simple, such as, if there is a program from forestry or plantations, we can involve the community in that. But the KFCP didn't understand how to make it simple, so that it could be integrated and synchronised with other stakeholders. The maps need to be improved. (KPHL official, November 2014)

The deliberative mapping diverged from a 'simple' top-down model of forest management, or program or project delivery in which villagers had little say in the delivery or goals. One villager, noting that PTGLD should have been conducted sooner, described it as a weakness in the initial design of KFCP that first prioritised trialling the reforestation activities using payments (May 2014). Several project staff similarly reported that this mapping should have occurred prior to the revegetation trials and payments. Many authors have argued that land tenure reform is essential for REDD+ equity and effectiveness (Larson, 2011; Resosudarmo et al., 2014; Sunderlin et al., 2014). Important learning dimensions are not closely articulated in such arguments. PTGLD indicated the need to allow time for changes and collaborative approaches to evolve and apply learning in a contested resource environment (rather than applying an uninformed external perspective on land reform; see, e.g. Kunz et al., 2017; Lindsey, 1998). Deliberation

and problem solving over sensitive land issues are necessary, difficult and complicated. Such processes need time to evolve, because they need to recognise the different ways that people perceive, perform and relate to land. This was not possible within the final year of the project.

5.5. Project duration and risk

5.5.1. Fast-tracking results without continuing support to villagers

Emerging from a high-level political agreement, there was pressure to fast-track project implementation. Anticipated sources of financial investment did not materialise and the performance-based 'REDD+' elements, in the form of the payments mechanism, were discontinued, along with the canal blocking to rewet the peatlands. These changes, along with improved project leadership in the final year, enabled the focus on delivery of the livelihoods packages and deliberative mapping (PTGLD) with a reduced budget in the final year. A contingency fund was specified in the project design, and in the VA documents, to ensure continuing support to villagers. Following an unsuccessful attempt to establish a World Bank Trust Fund to manage AUD 8 million, this money was withdrawn. This removed the option of continuing financial support to villagers, including for them to maintain the reforestation sites, which remained highly vulnerable to fire in the degraded peatlands. Many villagers reported that they returned to logging, and we observed that men left the villages in search of work after the project ended:

We have experience from previous projects, we only worked as their labour and when the project finished, they just said "good bye" to us. As a result, we returned to logging, our old jobs. That was the reason why we didn't want that to happen and tried to make KFCP understand that we didn't want the same thing happen over and over again. (November 2014 – male in Katunjung village)

A major disappointment among project staff, district officials, and many villagers (in those that opted to participate in the final year), was not that the KFCP ended—but that it did so without the contingency fund, and without enough time to apply the learning achieved in the project. Insufficient time for transition and applied learning was discussed in final workshops held at the provincial level, and then in Jakarta:

We can learn from [the KFCP] that REDD+ needs time and an integrated approach, clear communication and funding delivered over a long timeframe. This can be difficult to do in a project with a short timeframe of one or two years. (Jakarta, June 2014)

The Australian Government decision to end the project without undertaking the canal blocking to rewet the peatlands, and removal of the contingency fund, affirmed for many villagers an experience of intervention in which they received temporary project benefits and training.

5.5.2. Requiring decision-makers to learn

A key insight, emerging from the analysis of learning in this study, is that a narrow definition of 'success' or 'failure' undermines opportunities for critical reflection in higher level learning. Learning from project successes and failures is important for future decisions about funding and design of programs and projects aimed at supporting sustainable land use. Many interviews with project staff identified tensions between an adversity to risk and desire for learning in the KFCP:

The idea was that the KFCP was like a laboratory for testing ideas and what we learn is going to be taken right up to the international level... [The Australian Government in] Canberra wanted to have a lot of control, but they didn't give us much... they didn't spend a lot of time coming out to visit and keeping up on the ground, so they couldn't make day-to-day decisions, or month-to-month decisions...

I think one lesson is that if you want an innovative pilot project, you have

to let go quite a bit and see how things go and be willing to accept failures, if that's what they are, or mistakes. [The Australian Government] seemed very risk adverse to failures and mistakes, and didn't want to admit to them, which is not what you want if you're testing new ideas. (Project Manager, December 2014)

Prior research has shown that 'failures', both in development and environmental projects, are often managed as 'rectifiable deficiencies in technique' in practices of smoothing out contradictions and devising compromises (Li, 2007b, p. 277). In the KFCP, they were managed by quiet withdrawal from a flagship project. Therefore, the project's continuation for another year, and any project achievements, became a footnote to the Australian Government decision to end the project. When the project ended, the accumulated knowledge of KFCP project staff was transferred into publications. Over 60 publications including a 'Lessons Learned' series were published. There were significant hand-over efforts to government and other stakeholders, and efforts to consolidate learning through meetings and workshops. Rather than 'learning lessons' from the KFCP, our analysis of learning points to an important question of who should be learning in these kinds of projects? One staff member indicated this question:

Yes, there are opportunities for lessons, but it requires the decision-makers to learn... Far too often the lessons of the past are forgotten. And actually, it's the relationships—even for KFCP—even though things haven't worked out as planned, there's a lot of social capital tied up in the project team and to lose that totally would be quite a loss, it takes time to be built up. (Project Manager, February 2014).

Calculated risk taking, creativity, and innovation, require an understanding that failures associated with these actions are acceptable (Carmeli and Sheaffer, 2008). Such risk taking and creativity, in turn, depend on the messy and complicated nature of project relationships (Carrier and West, 2009; Mosse, 2004). Project relationships need to be progressively consolidated and reviewed. This consolidation, in a reflective stage, is needed for higher level learning (Leeuwis, 2004). It needs to be prioritised and include those providing the funding and expertise at higher levels; learning processes need to include and be directed at them.

6. Synthesis

In this study, we observed how learning was experienced during implementation of a complex environmental initiative, the KFCP. While REDD+, as a relatively new environmental mechanism, is often discussed as requiring learning, this study has addressed how learning occurred in a large demonstration project. Given the particular characteristics of REDD+, including performance-based payment for environmental outcomes, multi-level and multi-stakeholder processes, and novel mechanisms, we identified collaborative social learning as particularly relevant, a form of learning that can be fostered through goal setting and flexibility, knowledge transfer, appropriate leadership and timeframes, and calculated risk taking. Consistent with other REDD+ studies (e.g. Myers et al., 2018), some conflicts and disagreements in the KFCP emerged from the technical emphasis of project design. Other studies have affirmed the need for REDD+ processes to be flexible to account for local perceptions and build local ownership and legitimacy (Nantongo, 2017). Our focus on learning takes a different perspective to other analyses of the issues in REDD+ projects of top-down approaches, technical design challenges, community participation, and free, prior and informed consent. It does so, firstly, by identifying practical insights into REDD+ design and implementation, such as the need for explicit learning goals, and secondly, by raising ethical questions about 'piloting' and 'learning' in REDD+ projects. Applying theoretical considerations of learning has the potential to yield greater opportunities for learning beyond REDD+ to other forms of policy experimentation by recognising ethical ambiguities and

desired reciprocity among those engaging in learning pilots.

Overall, there was a sense that learning did occur despite project shortcomings. Some points in the process, such as the village negotiations at the beginning, and the deliberative mapping at the end, provided opportunities for collaborative social learning. Social learning occurred in these activities, but it was not fully realised. In the negotiation of Village Agreements, social learning occurred through involving villagers and helping them identify their priorities. In this process, other actors came to understand villager needs. Villagers also learnt from strategic engagement with the KFCP, and other actors, when implementation did not proceed as they had anticipated. This indicates a potential for the VAs to be developed as a collaborative process, not simply as a consent process that locks villagers into a contractual agreement with limited flexibility or reciprocity in engagement. This was similarly the case with district government and local NGO involvement, which underscores the need for long-term collaborative and reciprocal relationships with all actors. These relationships are difficult to establish, and maintain, using pilot activities that aim to 'fast-track' results. Many of those who engaged with the KFCP were interested in and eager to learn, on their own terms. A key insight is that the initial interest in REDD+ created a desire for engagement. While this provided an entry point for collaborative social learning, harnessing learning opportunities requires greater openness and flexibility in project design and implementation. One way to do this would be to specify learning objectives at the beginning, and allow time for initial negotiations to evolve. It took several years of implementation for collaborative and deliberative processes to emerge, through changes to project delivery and leadership in the final year. However, by that time the Australian Government had decided to end the project. While previous studies have pointed to a need for learning in REDD+ (e.g. Jagger et al., 2009; Milne et al., 2018), our observations of learning throughout KFCP implementation, and identification of points where there is potential for collaborative social learning are new contributions of this study.

The KFCP can be understood as a 'real-life' experiment. Conducting 'real-life' experiments, through learning pilots, not only requires the consent of participants but their active contribution to knowledge creation. Important ethical questions about conducting such 'real-life' experiments have been identified in climate change adaptation (Warner et al., 2018) but not in REDD+ policy experimentation and governance innovations (e.g. Korhonen-Kurki et al., 2017). As shown in the Australian Government decision to end the project, such experiments risk perpetuating a cycle of interventions in which the downward transfer of knowledge, followed by the upward transfer of 'lessons', do not fully engage with those who have to live with the long-term consequences of the project. Reflecting on theoretical considerations of learning, we emphasise that 'active experimentation' is needed for transformation of knowledge through experiential learning (Kolb, 1984; Kolb et al., 2001). Experiential and other forms of learning in REDD+ need to recognise competing priorities and knowledge claims. Boundaries enacted between outside experts and local actors impede the reciprocal exchange of ideas. Our analysis of learning affirms the need identified in other studies for more permeable boundaries between such 'experts' and local actors in developing responses to complex governance issues (Li, 2007a; Ribot, 2018; Wallis et al., 2013). We add insight into how permeability can be created by specifying learning objectives for different actors in government bureaucracies and hierarchy in environmental programs and projects. Making explicit any assumptions about who is meant to be learning can help to reveal hierarchical divisions, which may otherwise be less visible to those providing the knowledge and expertise. It is important to recognise the politics of knowledge at play as some actors are positioned as 'experts' marginalising other actors and forms of knowledge. Such projects need further critical engagement and understanding of the role of risk and ethical ambiguities faced by different actors (Armitage, 2008; Armitage et al., 2008; Reed et al., 2010).

7. Conclusion

REDD+, and other novel forms of environmental governance, seek to influence land use in developing countries. They often start with a stated desire to learn-by-doing. Project documents emphasise sharing of knowledge, experiences, and lessons learned, however specify technical requirements, such as forest and carbon inventory, assessment of feasibility, conservation planning and desired land use practices. The learning that occurs is rarely closely examined. In this study, we went behind the rhetoric of learning in a large demonstration project, the KFCP, to identify what learning actually occurred. Analysing learning processes, in relation to the five themes, enabled us to identify where in the KFCP design there was potential for building in collaborative forms of learning. In particular, we identified the potential for learning in initial project setup, by recognising informal networks and supporting bridging organisations, undertaking integrative negotiations to generate sharing meaning and goals, and by calculated risk taking. Flexibility and openness are needed, and learning objectives need to be explicit in project design. An implication, based on these findings, is that framing social learning as an integral part of program design can enable it to be flexible and adapt to the land use context. Applying learning requires appropriate leadership and time, and greater reciprocity in exchange of knowledge and ideas. If taking an ethical approach to REDD+ policy experimentation, learning objectives, assumptions and responsibility for what happens *during* and *after* a project, need to be explicit in the design and implementation. Despite the project's shortcomings, interviewees' eagerness to learn suggests that building approaches to social learning into program design has the potential to yield opportunities for learning beyond REDD+ to other forms of policy experimentation and governance innovations. Our study findings indicate a need for stronger connections between social learning and policy processes across multiple levels of governance and decision-making. To this end, learning processes should be designed to include donors and higher-level decision makers, shifting the focus from 'knowledge transfer' and 'testing' to social learning in designing and implementing environmental projects.

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