PAYMENTS FOR ECOSYSTEM SERVICES IN INDONESIA

1 Introduction

Indonesia has the third largest expanse of tropical forest in the world, with globally important biodiversity and carbon stores, and locally important ecosystem service delivery. The country has experienced high rates of deforestation since the 1990s (Hansen et al. 2009); with approximately 6.02 million hectares of primary forest lost between 2000 and 2012 (Margono et al. 2014). It is the world's third largest emitter of greenhouse gasses (Sloan et al. 2012). Several activities have been implemented to reduce high deforestation rates, with considerable attention being given to the potential for reducing emissions from forest degradation and deforestation (REDD+) activities (Maryani et al. 2012, WWF 2013, Luttrell et al. 2014, Moeliono et al. 2014, Sills et al. 2014), and a moratorium on new agriculture and logging licences/concessions announced by the President in 2011 (Murdiyarso et al. 2011, Sloan 2014).

The central principle of payments for ecosystem service (PES) schemes is that the providers of ecosystem services should be compensated for their efforts, and those who benefit from those services should pay for their provision (Pagiola and Platais 2002); as is the case with most non-environmental goods and services. PES schemes have therefore been identified as having the potential to contribute to the supply of ecosystem services, including carbon and other services, and have spread rapidly – globally 205 active PES programmes were identified for watershed services alone in 2013, with a further 76 projects in development (Bennett et al. 2013).

Available literature suggests that Indonesian PES schemes have been operating for more than a decade (Landell-Mills and Porras 2002), are reported to have spread relatively quickly (Suyanto et al. 2005) and be relatively widely accepted across the country (Fauzi and Anna 2013). Most of this literature (both published and grey) analyses either aspects of PES project design or implementation (Suyanto et al. 2007, Wunder et al. 2008,

Leimona et al. 2010, Pirard and Billé 2010, Ajayi et al. 2012), or some aspect of institutional arrangements (Arifin 2005, Collins et al. 2011, Fauzi and Anna 2013).

Two gaps in the available analyses are quickly identified. The first is that a majority of the analyses of Indonesian PES schemes have focused on a few pilot projects which means that it is not clear how widely PES schemes have actually spread across the country. The second is the rarity of cross project analysis; with such synthesis a useful means of drawing lessons from project experience, as has recently been occurring elsewhere in south east Asia (Pham et al. 2013, Milne and Chervier 2014, Nabangchang 2014, VFPDF 2014), and for the design of similar or more recent incentive-based programmes such as REDD+ (Wunder 2009, Tacconi et al. 2010a, Caplow et al. 2011, Corbera 2012, Mahanty et al. 2013, Karsenty et al. 2014, Loft et al. 2014).

The research described in this paper attempts to address both of these gaps. The paper investigates and describes current and historical schemes where payments (either in cash or in kind) are made to ecosystem service suppliers in Indonesia; payments that are conditional on the actual creation or maintenance of those ES. The study also aimed to assess the experience of PES in Indonesia with respect to how differences in the design of benefit sharing mechanisms affect the incentives for community participation in ecosystem service supply schemes, and the impacts of such schemes on the livelihoods of participants. In addition to addressing these two gaps, the paper adds further to the literature by examining the stakeholders' views of the factors that support or constrain the development of PES schemes in Indonesia.

2 Methods

The first step of assessing the experience of PES in Indonesia was to compile a comprehensive list of all projects and programmes taking a direct payments approach to the provision of ecosystem services – whether individually or in combination in Indonesia.

This list was compiled by searching both published and grey literature for projects described as being (or having the potential to be) linked to an ecosystem service market. In order to reduce the chance of excluding PES projects in the first instance, the search and construction of a long-list was designed to be as inclusive as possible, and incorporate a wide range of projects, including those described as being specifically PES, as well as others, for example those described as REDD+, as clean development mechanism or voluntary carbon standard projects.

Information was then sought about partners (individuals or organisations) involved in the design, implementation or funding of the scheme, whether they were government or non-government, Indonesian or international. In order to determine if the long-listed projects could be classified as PES schemes, one or more partners representing each scheme were then contacted by telephone or email and questioned about the projects to determine whether they matched the specified PES scheme criteria (described below).

There is a growing literature dealing with the definition of PES (see for example, Wunder 2005, Tacconi 2012, Derissen and Latacz-Lohmann 2013, Sattler and Matzdorf 2013, Wunder 2015), and for the purposes of this research, schemes were included in the analysis if:

- the purpose of the scheme is/was to create or sustain the provision of ES by 'ES sellers' who participate voluntarily;
- buyers pay for either: (i) activities thought to generate ES provision (i.e. payments for inputs, where payments are based on some biological/ecological understanding of the connection between the activity being paid for and ES provision) or (ii) ES provision directly (i.e. payments for outputs);
- payments are made only if (agreed) criteria to provide ES are met (i.e. there is conditionality);

- the scheme had made, or was currently making, payments for ES provision at one or more site in Indonesia.

Project contacts were interviewed about long-listed projects to determine whether they met these criteria, and were also questioned about their knowledge of other projects (i.e. snowball sampling) to ensure as complete coverage of actual and potential projects as possible. Information derived from this first round fact checking was used to confirm the existence of projects; to add, supplement or amend the information about projects; or to remove projects that did not meet the criteria from the long-list.

In order to elicit stakeholders' perspectives about the reasons for PES success and of constraints to the further spread of PES in Indonesia, a range of different stakeholders were consulted. In the first instance, stakeholders involved in the PES projects identified that did met the selection criteria were interviewed. Additionally, a number of other stakeholders were also interviewed about their perceptions of these issues – stakeholders that could be reasonably interpreted as playing (or potentially playing) a role in supporting, designing and/or implementing local-level PES schemes. In total, 39 interviews were conducted with national government officials (seven), representatives of national and international conservation non-government organisations (15), representatives of international donor agencies (eight), stakeholders (including the private sector) who are actively involved in existing or developing PES or REDD+ activities (six), and PES researchers in Indonesia (three). These interviews took place during March, August and October 2014.

This paper therefore identifies and briefly describes PES schemes in Indonesia, to improve the understanding of those factors that facilitate and constrain the development of PES schemes in Indonesia; it is not the purpose to judge the merits – or otherwise – of the PES projects being implemented in Indonesia. Determining the spread of PES is important in

assessing whether the proponents have been successful in creating sustainable mechanisms for ES provision over time, or whether they have achieved their potential as a sustainable means of paying for conservation (Pagiola 2007). The study also sought to understand the factors supporting and/or constraining the spread of PES activities, because of the direct implications for REDD+ schemes planning to work with local communities to provide carbon sequestration services.

Interview notes for all 39 interviews (46 interviewees) were transcribed and then analysed using NVivo (version 10, QSR International Pty Ltd, 2012). All interviews were coded for a number of themes. One thematic group related to the motivation for project design, including views on the types of payments to communities and/or individuals typical of PES schemes. Another group related to the reasons for the lack of spread of PES across Indonesia, and what elements may facilitate such spread in the future. For those interviews discussing an active or defunct PES scheme, interviews were also coded for elements of the design of the PES scheme. The results presented below are drawn from these interviews, unless otherwise indicated.

Discussions about PES in this paper includes those local-level REDD+ schemes that make payments for carbon sequestration activities, but where the latter was referenced specifically (in quotes), the reference is included in the quoted material.

A number of interviewees represented organisations that were initially identified as supporting PES schemes in some way, but which, on further investigation was found not to be the case. The views of these interviewees are not included in any description of the development of any of the actually implemented PES schemes identified (section 3.2), but they are included in the presentation of stakeholders' views of PES, and in the subsequent discussion section, because they do assist in understanding of the development of PES in Indonesia.

3 Results

3.1 Payments for ecosystem service projects in Indonesia

Once projects were identified (and duplicates removed), the long list included a total of 87 different projects. Having subsequently contacted key institutions about each of the listed projects, and removing those that did not meet the above-mentioned criteria, just nine projects remained that had been, or were actively making conditional payments for the provision of ecosystem services. In the time since the short list was developed, one of these, the Kalimantan Forests and Climate Partnership (KFCP) project ceased operations (Howes 2013).

There were several reasons why projects were dropped from further consideration. The first was that while a project description had been found in the literature, no project was actually developed and implemented. In a number of cases, the projects described failed to incorporate payments and conditionality as part of their implementation strategies. There were also a small number of projects that were in the design or implementation phase, but were not included in this analysis because they were yet to make any conditional payments for ES provision.

The key features of the schemes that met all of the selection criteria are described in Table 1. The schemes include communities in several districts across Indonesia, involve a range of community and private sector ES sellers, non government and private sector intermediary organisations and both private and public funders (ES purchasers). Schemes could only be identified for water and carbon services, and the activities of all the schemes were very similar – primarily forest conservation and tree planting. No bundling of ecosystem services takes place within these schemes.

Table 1 Key features of implemented Indonesian PES schemes

Several features of these existing PES projects meant that further investigation in to the impact of design elements on livelihoods and community and individual participation would not yield meaningful results at this stage. Many of these operating schemes are billed as pilot, or demonstration, schemes (see also Pirard and Billé 2010). This, a priori, lead to the expectation that a variety of design mechanisms and activities would be being tested by the various schemes. However, variation in design characteristics appears to be closely correlated with the intermediary organisations, with each using very similar scheme design for the projects they are involved in. The similarity of these design elements may mean that opportunities to learn from implementation experience may be reduced because of the relative lack of diversity in design, though not with respect to the context of operation. However, the two most important features of these schemes that made an impact analysis non-viable were the recent start date of payments in several schemes (meaning impacts would not have had sufficient time to emerge) and, in most cases, because of the relatively small amounts of money being paid to most ES sellers (with the exception of the KFCP, which ended in 2014).

3.2 Perceptions of PES

Interviewees held a wide range of views about the appropriateness of PES schemes (and REDD+ as a subset of PES) in ensuring the provision of ecosystem services in Indonesia. Indeed one interviewee noted that ‘people seem to be quite polarized. They either think it’s the answer to everything, or it’s evil. There’s very few people that sit in the middle.’ (Interviewee 23).

The greatest range of views of the potential, or otherwise, of PES to contribute to conservation was found amongst the intermediary agencies (large and small, domestic and foreign NGOs), which were split approximately equally between those actively involved in the design and implementation of PES schemes and those that were not.

Amongst those intermediaries not involved in PES implementation, around half actively opposed PES, and expressed a dislike of direct payments to communities, highlighting their perceptions of the potential negative outcomes of payment mechanisms, 'it's almost a blackmail kind of thing. Where people will say they'll hold the chainsaw to the tree. [Communities say] "If you don't pay us, we'll cut it down".' (Interviewee 14). One interviewee suggested that frontloading payments for activities was akin to bribing the community (Interviewee 4). However, the other half of non-implementing intermediaries took a less oppositional stance, generally agreeing that 'monetary incentives are not always the answer to a lot of problems, particularly conservation problems.' (Interviewee 16).

Intermediaries involved in PES projects supported cash payments, and particularly the agency of community members, 'We want transaction payments, which is cash money. Whether the money will be used for this or that, it's their [the communities'] business … it's up to them.' (Interviewee 11). However, even within an organisation actively supporting PES, the view was held that 'PES will be exceptional … REDD is included in this. The issue is, to do this you need a lot of money. But if there is a lot of money then, there are too many power issues, and powerful people put their interests' (Interviewee 7).

Within government, donor and other stakeholder groups, differences in opinion were less extreme. Even where these categories of stakeholders were not actively involved in designing, implementing or funding PES projects, all interviewees were broadly supportive of the principles of the use of conditional incentive payments to achieve outcomes. However, one donor made the distinction between projects for carbon and those for other ecosystem services; being generally unsupportive of project-level activities for carbon because 'they don't address the threats [at a large enough scale]' (Interviewee 27).

Too few interviews were held with private sector personnel to gain an understanding of how widespread support for PES mechanisms might be, but there was enthusiasm for the principle amongst those interviewed. While it was beyond the scope of this research to investigate the demand for ecosystem services amongst the private sector, this is an area in which future research would be valuable, with attention not only to large enterprises and multi-nationals, but also to small and medium sized businesses.

Despite the support for PES expressed by all national government interviewees, national government, and specifically the Ministry of Forestry, was perceived by non-government respondents as lacking the interest and/or political will to actively support the implementation of projects. The awareness and understanding of PES amongst provincial and district government departments and officials was also questioned.

3.2.1 Factors constraining PES implementation

Stakeholders' views on why PES approaches had not spread more widely in Indonesia were categorised into macro- or micro-level concerns. The former related to the policy and regulatory environment in which PES would be introduced, and the latter to the operationalisation of PES schemes. A number of macro-level constraints were identified, and despite the stated support by government for PES, many of the macro-level constraints centred on government actions and the regulatory context in which projects were implemented, as well as issues of trust.

The first constraint to be overcome for PES projects was recognised as 'how to get buyers and sellers to recognise the problem?' (Interviewee 16) – that is, to recognise the problems of land and forest degradation, and the increasing scarcity of certain ES, as some of the private sector retained the belief that 'ES are a free good' (Interviewee 7). Even where demand for ES had been exhibited, the commitment of private sector to

purchasing ES as a routine business operation was questioned, because payments are often made using corporate social responsibility (CSR) funds and not from operating costs: 'it is still a philanthropic in many ways, it's just companies that are trying to be good corporate citizens really. The majority of it is CSR-related.' (Interviewee 3).

Just under 50% of respondents expressed an opinion about the potential for increasing demand for ES, with 41% of those identifying the private sector as potential ES buyers (surprisingly positive views, given that few firms are currently involved in active PES projects in Indonesia), though approximately half of these suggested that they would only be willing to purchase ES if regulations required them to, while a single respondent stated that the private sector would have no interest in financing PES schemes. The remaining respondents identified the Indonesian government and foreign donors as the potential financiers of PES schemes.

Of the respondents suggesting the private sector was potentially interested in paying for ES, they believed that private sector participation was presently constrained by its 'unclear future. … There is too much uncertainty in Indonesia, and the uncertainty is regulation' (Interviewee 26). For example, in the early days of REDD+: 'at first, there was interest, and all this buzz … investors were lining up' (Interviewee 5), but most projects dropped off partly because of the global financial crisis, but also because of the delays involved in negotiating project design and implementation amongst the partners, and the uncertainty around rights and benefit sharing mechanisms.

The second constraint identified were the questionable levels of government commitment to PES, as demonstrated the persistence of overlapping and conflicting regulations and the apparently ineffective regulatory development processes. More than 90% of interviewees drew attention to the issue of conflicting and overlapping regulations and the shifting policy regime: 'here there are so many regulations and the problem is that

they are sometimes overlapping' (Interviewee 15), exacerbated by the different levels at which regulation can be enacted (district, provincial and national), and the multiple ways in which regulations can be interpreted by different people. This results in uncertainty: 'uncertainty in regulation is probably the biggest thing. … Every step along the way that uncertainty can be cleared up, that demand can be fostered, can only be useful. I think you've got to do that to get scale.' (Interviewee 19).

The uncertainty of the regulatory environment in Indonesia was contrasted with PES regulation in other locations: 'In Costa Rica, there is a clear law, and it is very rigid. That is why there is a very strong certainty related to the law. So people are willing to pay because there is a certainty and clarity.' That [uncertainty] is the main problem that we face [in Indonesia] and this is also the reason that people feel insecure to pay the [ecosystem] service [here].' (Interviewee 11). In fact, the Costa Rican scheme is largely funded by government, through the collection of taxes primarily on fuel, but more recently also on water (Porras et al. 2013).

The regulatory development process within government is also contributes to this uncertainty. While PES-related regulation has been prepared within government and ready for two years, 'some bureaucrats are not there to take risks', and so it has not been put forward for official approval (Interviewee 20). Further, 'there needs to be clear guidance, but I don't know whether the government is quite serious to consider this' (Interviewee 2).

One quarter of respondents felt that a lack of regulation was a stumbling block to the wider spread of PES in Indonesia. However, when these interviewees were pressed about the type of regulations that were lacking, they could rarely identify regulatory issues that, if implemented, could support PES scheme establishments. The lack of available mechanisms to deliver payments legally at the communities level was repeatedly

identified. However, operating schemes are already making payments using a variety of mechanisms, so this constraint appears to relate more to a lack of knowledge, than to a need for additional regulation.

A further constraint associated with the regulatory environment was the lack of 'synchronisation and coordination' between ministries. This may in future be partially overcome because of the merger of the two into the Ministry of Environment and Forestry that began in late 2014, but will depend on how it is operationalised and led. Coordination with the finance ministry will remain critical because it holds the responsibility for making regulations regarding benefit sharing.

The lack of clarity over property rights is perceived as a critical constraint to the spread of PES, but is recognised as a factor affecting rural development generally, not only PES projects. 'Rights need to be clear first, in terms of communities. Without well defined rights, it is very difficult to develop a mechanism, and to address who is going to get benefit' (Interviewee 9), that is, to determine who the 'ES sellers' are. It will be necessary to 'support communities to have their tenure rights clarified. Once you've done that, then you can layer a project on top of that, but unless you've solved that you've got too much uncertainty. (Interviewee 19).

Interviewees from all stakeholder groups noted that the length of time required to operationalise a PES project was a factor reducing the incentive to participate. Some delays were attributable to the uncertain regulatory environment, and also to the need to build trust between the parties – in most cases between ES sellers (communities) and intermediaries: 'in our experience, it is a long process to ensure that we don't just come to the village and spend money, but that they understand. This needs a long run process, not an instant process.' (Interviewee 29). This process had taken more than three years in at least two of the operating projects.

Government processes could also delay aspects of projects. For example while the Rimba Raya project started in 2008 and generated credits from that time, their restoration licence was granted only in 2013. It was only after receiving the full licence that they were able to sell their carbon credits. Further, while it took the Cidanau scheme four years to finalise negotiations with their buyer, three of the intermediaries involved in PES projects stated that potential projects had been abandoned by ES buyers due to the length of time it took to reach agreements between all parties, an issue particularly for carbon services.

4 Discussion and conclusion

A range of stakeholders were interviewed about their perceptions of PES in Indonesia and their views about the constraints to its further spread. The vast majority were supportive of the principle of using incentive based mechanisms, such as PES, though only approximately half were directly involved in the design, implementation or funding of PES schemes in the country. Three intermediary institutions expressed dissatisfaction with the idea of paying communities for the provision of ES. The identified constraints to the spread of PES projects in Indonesia can be broadly grouped into two categories: (i) a lack of recognition of ES degradation and scarcity as a problem; and (ii) the constraints imposed by the conflicting and uncertain regulatory environment.

The first bottleneck is the lack of recognition amongst buyers and sellers of the problems associated with environmental degradation, though this is not a problem confined to Indonesia (GCP et al. 2014). While the numbers of projects scoped, especially for carbon projects, suggested that initial interest was relatively strong, the subsequent lack of project implementation suggests that the transactions costs associated with the transition from design to implementation have been too high, particularly for potential buyers.

The dearth of programmes being driven by the private sector, and their use of corporate social responsibility funds for ES purchases seem to support the suggestion that the private sector does not yet recognise ecosystem services scarcity as a threat to continued operations, or that environmental degradation may be an externality that they are (partially) responsible for internalising.

Additionally, it has not been clear whether, or where, the benefits of ecosystem service delivery exceed the costs, though recent studies go some way to addressing the dearth of information regarding values and the distribution of ES benefits (Prasetyo et al. 2009, Yamamoto and Takeuchi 2012, Sumarga et al. 2015, Suwarno et al. 2015).

A lack of information about the operation of PES schemes is likely to impact negatively on the understanding and awareness of PES, particularly amongst provincial and district governments, which are critical, given their important role in natural resource management. Without such information, governments are unlikely to shift their focus from productive utilisation, where 'policy is driven by a timber mindset' (Interviewee 20).

The remaining constraints contributed to the uncertainty facing both potential purchasers and suppliers of ES, apparently adding significantly to the transactions costs of a scheme and increasing them beyond viability, where transactions costs are the costs of defining the ES to be traded, finding trading partners, and negotiating and closing contracts (Niehans 1971 cited in Coggan et al. 2015).

These constraints affecting PES in Indonesia overlap significantly with the reasons identified for the poor spread of watershed PES in sub-Saharan Africa, as described by (Ferraro 2009), and with constraints to PES identified elsewhere in the world (Vatn 2010, Alix-Garcia and Wolff 2014). Further, they align closely – in the reverse – with the economic, institutional and cultural preconditions for PES identified by Wunder (2013).

Economic preconditions are that the benefits exceed the costs of any intervention (as discussed above), cultural preconditions describe the necessity for both users and providers to have a motive for action, while the institutional preconditions relate to trust, transactions costs and tenure (Wunder 2013).

Operating schemes in Indonesia have demonstrated that buyers can be organised to make payments for ES, it is only possible in circumstances where intermediaries initiate activities. This may be because intermediaries cut transaction costs by developing a 'formula' for the design and implementation of projects (Banerjee et al. 2013), for example, each intermediary involved in multiple PES projects in Indonesia made similar choices about mechanism design (see Table 1).

While factors supporting the establishment and continuation of the identified PES projects were not discussed explicitly during the interviews, trust is demonstrably a feature of those schemes that have successfully been implemented in Indonesia, and an example of one the institutional preconditions for PES (Wunder 2013). In all cases of currently active Indonesian PES schemes, intermediary agencies had been working with community ES providers in each location prior to the introduction of PES schemes. The trust built during this time seems to have been successful in reducing the transactions costs, thus improving the viability of PES implementation (see also Sunderlin and Sills 2012). This kind of trust-building has been described elsewhere as a contributor to the success of the Cidanau scheme (Leimona et al. 2010), as well as to schemes elsewhere in the world (Tacconi et al. 2010b, Mahanty et al. 2013, Namaalwa and Nabanoga 2013).

Tenure clarity and security are also institutional preconditions for PES, and are problematic in Indonesia. The lack of tenure clarity and security was identified by virtually all stakeholders as a constraint to PES, and has been examined extensively by researchers

419 in Indonesia (Collins et al. 2011, Indrarto et al. 2012, Murdiyarso et al. 2012,
420 Resosudarmo et al. 2014, Sunderlin et al. 2014).
421
422 Ecosystem services have been noted as a way to escape the control of public authorities
423 (Pirard 2012), as the absence of regulation enables more adaptive management of
424 projects. The high demand amongst Indonesian stakeholders for a government role
425 suggests that such opportunities may not be highly valued here; stakeholders' desire for
426 government guidance and regulation is perceived as necessary to reduce some of the
427 uncertainty of stakeholders regarding PES. Further, government guidelines and
428 regulation may act to increase the visibility of PES, and thus encourage buyers to
429 participate. The obvious caveat is that this would not be successful if any new regulation
430 simply added to the existing conflictual and overlapping regulatory regime. It is the
431 opinion of the authors that improving the clarity of the regulatory environment would be
432 of greater benefit.
433
434 The necessity of government involvement is more straightforward in some cases, for
435 example, in the Cidanau watershed PES, government regulation was necessary to enable
436 implementation (Pirard et al. 2014). In future, government agencies not primarily
437 concerned with environmental outcomes could be important in driving the wider spread
438 of PES, if, for example, ministries other than the Ministry of Forestry encouraged the
439 adoption of PES as a cash transfer conditional on the production of ES, in order to achieve
440 poverty alleviation outcomes (Rosa da Conceição et al. 2015). The recent merger of the
441 ministries of forestry and the environment also provides optimism that the development
442 of PES may now accelerate.
443
444 This study confirms the conclusions of earlier researchers who note that while many
445 potential schemes have been identified and projects announced, little information – other
446 than the announcement – is available (Landell-Mills and Porras 2002, Heyde et al. 2012).

There has also been a lack of learning from activities and a lack of analysis of experiences, which appears to still be the case in Indonesia. Some projects have been ongoing for more than a decade and have hosted numerous study visits, yet many of the issues identified by interviewees in this study as reasons for the lack of spread of PES in Indonesia relate to issues that these projects have been, at least partially, addressed.

High transactions costs appear to be the most significant constraint to be overcome for the scaling-up of PES. It would thus be useful to understand the role, if any, of transactions costs in the relatively small proportion of operational schemes compared to the number that are proposed, and to analyse these operating schemes in greater detailed to elucidate opportunities to reduce the transactions costs of these schemes specifically, and PES schemes more generally.

The low rate of spread of PES in Indonesia after more than a decade of activity may imply that there has been an unwarranted emphasis on the ability of PES schemes to successfully and sustainably supply ecosystem services in reality. However, it may be premature to be disillusioned with PES as one means of achieving conservation and social goals (see Redford and Adams 2009) given the relatively limited experience of actual implementation and application in the country.

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646

Table 1 Key features of implemented Indonesian PES schemes

Name	Province	Started (PES activity)	Seller	Buyer	Payment	Intermediary	Activity
Water							
Cidanau	Banten	2001	+/- 30 farmer groups	state owned enterprise	Rp1.2 million /ha	stakeholder group	tree planting, agroforestry
Mt Rinjani Payments for Watershed Services	Lombok/ NTB	2009	25 groups in 12 villages	water assoc. members/users	Rp30-80 million /group	NGO	rehabilitation, reforestation
Aceh Payments for Watershed Services	Aceh	2009	10 farmer groups	companies	Rp 70-90 million /contract	NGO & stakeholder group	prevent tree cutting, tree planting, pollution prevention
Sumberjaya	Lampung	2007	3 villages	company	Rp1.5 -1.6 million/ha	NGOs	tree planting, river bank conservation, construction of terraces and sediment pits

Carbon							
Ketapang	W Kal.	2013*	villages	donors (incl. private foundations)	Rp100,000,000 /village p.a.	NGO	avoiding planned deforestation
Merangin	Jambi	2013*	villages	donors (incl. private foundations)	Rp100,000,000 /village p.a.	NGO	avoiding unplanned deforestation
Rimba Raya	C Kal.	2008* (but not sales)	private sector (ERC licence)	private sector	n/a (90 mill metric tons, 30 years; 2.2m VCUs)	-	avoiding planned deforestation
Berau Forest Carbon Program	E Kal.	2007	villages	donor (international)	$25,000 /village p.a.	NGO	reduced deforestation, forest rehabilitation
Kalimantan Forests & Climate Partnership	C Kal.	2010-2014*	villages	donor (international)	$A1.8 million total	KFCP	tree planting, intended canal blocking

* These schemes are paying for inputs (i.e. compensating participants for their activities) rather than paying for outputs.