WORKPLAN

Action-learning to develop and test upstream-downstream transactions for watershed protection services in Indonesia

An implementation phase country study for the international project *Developing markets for watershed protection services and improved livelihoods*

APRIL 2005 TO JUNE 2006

Executive Summary

Management of land in relation to water is a critical and topical issue in Indonesia. There is widespread public concern about the relationship between landuse and water quantity and quality, for example around floods and landslides, contamination of drinking water, and siltation of dams and waterways. Rural farmers are affected by declining availability of water limiting the number and area of crops grown.

Globally there is an increasing willingness to address environmental issues through markets or payments for environmental services. Principally these approaches seek to compensate land managers for the environmental services that they provide. In the context of watersheds, these services relate mainly to the quantity and quality of water. For downstream users of water there maybe instances where payments to upstream land managers are a cost-effective way of maintaining or developing watershed-based environmental services. Functional examples of these relationships are scarce and their impact on the livelihoods of the poor are not well understood.

Following the successful completion of the first stage of the implementation phase (May 2004 to March 2005), this workplan documents the outputs and the activities for the second stage (April 2005 to June 2006) under the Indonesian component of the DFID-funded project "Action-learning to develop and test upstream-downstream transactions for watershed protection services in Indonesia". The workplan was developed with the participation of the key stakeholders at a three-day planning workshop. The workplan has four outputs:

- Upstream-downstream transactions facilitated at three sites.
- Research to support the facilitation of upstream-downstream transactions conducted.
- National learning group convened and learning activities facilitated.
- Lessons learned documented and disseminated both nationally and internationally.

IIED's partner and lead agency for the implementation of the workplan is LP3ES, a Jakarta-based NGO. Field activities will be carried out through a series of partnerships with other NGOs that are locally based and have the appropriate skills and expertise. The success of the activities depends on immediate implementation of the workplan and coordination among the facilitation and the applied research activities.

1. Introduction

Land use and management techniques on watersheds can influence the quantity, reliability and quality of water downstream. Globally, willing buyers and sellers are now entering into financial transactions to maintain the watershed management practices that provide improvements in water flows and quality. However, there has been little investigation of the impacts of these new kinds of upstream-downstream financial transactions, especially on the livelihoods of people living in the watersheds. Practical research, based on realities on the ground, is needed to inform development of market mechanisms so that they can best serve sustainable development at local levels.

LP3ES and IIED are collaborating on an action research project in Indonesia to test models of downstream-upstream transactions and their impacts on local people (similar work is going on in India, South Africa and the Caribbean). An inception phase of the project, carried out in 2001-2002, provided an overview of the key issues in Indonesia, identified three sites for action research, and initiated upstream-downstream transactions in one of these sites. This document sets out the workplan for the second and final stage of the implementation phase of the project. The implementation phase of the project started in October 2003 and will end in September 2006.

2. Goal, purpose and outputs

The *goal* of this project is to optimise the direct and indirect benefits provided by watersheds to upstream communities, downstream users, and the wider society, with particular emphasis on the poor and vulnerable.

Its *purpose* is to create capacity in national and local institutions to assess the potential of market-based instruments to enhance watershed protection services and improve livelihoods, and to design and employ such instruments when appropriate.

The project has been formulated with four outputs. These are:

- Upstream-downstream transactions facilitated at three sites.
- Research to support the facilitation of upstream-downstream transactions conducted.
- National learning group convened and learning activities facilitated.
- Lessons learned documented and disseminated both nationally and internationally.

3. National relevance in Indonesia

Issues of water quality and quantity are at the forefront of environmental issues in Indonesia, as reflected in pressing public concerns about floods, landslides, sedimentation, dry season flows in drier regions, and pollution of both groundwater and surface water – along with related problems such as increasing competition for irrigation among farmers, and escalating water charges for domestic consumers. One of the major concerns of government, donors and public alike are how to manage land and water resources effectively – to maintain clean supplies while avoiding floods and erosion. Importantly this raises issues over the rights, responsibilities, costs and benefits of land management and water use. Indonesia is not alone in dealing with these questions. Recognition is growing internationally of the links between upstream land management and downstream water quantity, reliability and quality. Globally, willing buyers and sellers are now entering into financial transactions to maintain the watershed management practices that provide improvements in water flows and quality. The Indonesian Water

Resources Bill will provide an enabling environment for exactly these kinds of local deals. But it is not clear how upstream-downstream financial transactions will impact on the distribution of costs and benefits of water management, especially among poorer downstream users and upstream dwellers who manage land and water in the watersheds.

4. Inception phase and site selection

The inception phase included an overview of key water policy issues in Indonesia and undertook a diagnostic study for one potential action research site in Indonesia. In addition to the Lombok site, the inception phase considered a number of other potential sites for action research suggested by informants in government and civil society organisations in Indonesia. Of about ten sites identified, two others were then chosen, on the basis of availability of information, for a preliminary scoping exercise: the Brantas River in East Java Province and the Cidanau River in Banten Province. These sites are distinguished by criteria shown in table 1, differences that allow cross-learning of interest to government, the private sector and NGOs.

Table 1. Selection criteria for three sites

Site	Potential lessons	Willingness to pay directly	Potential sellers	Relationship upstream and downstream	Local interest	PSDAL interest and practicality
Lombok	Mechanisms for sharing rights and responsibility	Payment mechanism exists for one village – potential for scaling up	Farmers with help of NGOs	Hydrology: some info Institutions: early in process	High for buyers and sellers	Experience and ongoing work
Brantas	Large-scale governance, management coordination	Payment mechanism already exists but could be improved	Via Forest Services (livelihood challenge)	Hydrology: some info Institutions: PJT1 river authority	High for buyers Sellers not yet involved directly	New challenges
Cidanau	Mechanism for shared management among different agencies	KTI is willing to pay – has local monopoly	Sellers not clear: both farmers and protected area	Hydrology: some info Institutions: early in process	High for buyers Sellers not yet involved directly	Experience and new stakeholder forum

Following action learning in stage one of the implementation phase of the project, facilitation of upstream-downstream transactions (output one of four outputs) will be discontinued in stage two at the Lombok site. This is because the potential buyer, PDAM, has stalled negotiations. A research activity will be to document and assess how and why the negotiation process has stopped in Lombok.

5. Project activities April 2005 – June 2006

The implementation phase of this project has been developed around the concept of "action learning". Action learning is based on the notion of "learning by doing", in other words implementation supplemented by a process of questioning and reflection in order to gain insights both to inform future activities and to distil lessons for application elsewhere. This is reflected in the project's workplan that combines action research at three sites with activities designed to influence policy learning through multi-stakeholder groups at local and national levels (Table 2).

Table 2. Project outputs and summaries

Output	Description
Facilitation	Upstream-downstream transactions facilitated at two sites with an emphasis on building institutions for managing upstream-downstream transactions, especially at farmer level
Supporting research	Applied research conducted on social issues, hydrology, economics, finance mechanisms and policy, on a demand-driven, participatory basis to contribute to the facilitation and national learning group
National learning network	National learning events and activities centred on group of 20 individuals mainly in government and private sector, active in issues of watershed management and finance
Documentation and dissemination	Lessons learned from the project documented and then made available to the national learning network and other appropriate channels for learning nationally, regionally and internationally

5.1 Facilitation activities

5.1.1 Facilitation at Brantas: Brantas River is the second largest river on Java with a length of 320 km. The total area of the Brantas River basin is 11,800 km^2. In recognition of the economic importance of the river, a state-owned company Perusahaan Umum Jasa Tirta (PJT1) was established for the management and allocation of water resources. PJT1 is the first integrated basin management body in Indonesia (now replicated by PJT2 in the Ciliwung River Basin that supplies Jakarta) and thus provides a valuable opportunity for the project to interact with what central government hopes to promote and expand as the institutional structure for catchment management in Indonesia. Since decentralisation to district-level governments came into force in early 2001, management of river bodies across district borders has been an important institutional and legislative challenge and integrated management bodies like PJT1 are seen as the way forward.

LP3ES's partner in Brantas is the rural development NGO Yayasan Pengembangan Pedesaan (YPP) working at two sites in a pilot approach. YPP's objective is to facilitate a process whereby PJT1 becomes a buyer of the environmental services that are already or will be provided by these communities. Activities in this stage of the implementation phase include agroforestry development, negotiation of land rights and organisational development for farmers' groups. Table 3 gives the full list of activities for Brantas.

Table 3. Facilitation activities at Brantas April 2005 – June 2006

Activity	Duration	Responsible
1.1 Initiate village nursery garden with support of PJT-1, Forestry Service of Malang, Perhutani and farmers' group;	May - September 2005	Farmers' group and YPP
1.2 Take action for conservation of the springs within Perhutani areas	May 2005 - January 2006	Farmers' group and YPP
1.3 Negotiate land tenure rights for forest conservation and land management	June - August 2005	Perhutani and YPP
1.4 Local cross visit to the best practices in agroforestry management, which support soil and water conservation		Farmers' group and YPP
1.5 Organisational development of farmers' group through: a) formulation of statutes and by law of the group; b) establish formal group; and training	January 2005 - April 2006	YPP
1.6 Economic development of the farmers' group	June 2005 - June 2006	Farmers' group and YPP
1.8 Seminar and socialisation on PES concept and experience in implementation to broader stakeholder		YPP and Provincial Environmental Impact Agency (Bappedal)
1.9 Regular meeting of working group for PES promotion (referring to the project)		YPP
1.10 Workshop of the project to disseminate experience to the public		YPP and PJT-I

5.1.2 Facilitation at Cidanau: The Cidanau River is also located on Java approximately 175 km from Jakarta. The major use of water from the Cidanau River is for domestic and industrial use in Cilegon City. Krakatau Tirta Industry (KTI) is licensed to abstract water for both industrial and urban water users. KTI's main concern with respect to water quantity and quality is the high levels of siltation downstream, which is blamed on upstream conversion of natural vegetation to agriculture by local communities that include both long-term residents and more recently returned *transmigrasi* migrants. KTI maintains a regular programme of silt clearance, using local labour, but this is an inefficient approach and the company is now keen to discuss and possibly compensate land use changes upstream.

LP3ES's partner is the local NGO Rekonvasi Bhumi, working with two communities located in areas categorised as 'critical' in terms of soil erosion. The aim of the interventions is to establish a pilot or model that might be replicated elsewhere in the Cidanau basin. Activities in this stage of the implementation phase include establishment of an intermediary organisation, community empowerment and lobbying among potential buyers and policy holders. Table 4 gives the full list of activities for Cidanau.

Table 4. Facilitation activities at Cidanau April 2005 – June 2006

Activity	Duration	Responsible
1.1 PES socialisation and campaign to government, legislatives, and business sector	120 days	Rekonvasi Bhumi & Ad Hoc team
1.2 PES socialisation and campaign to potential buyer	4 times	KTI and Rekonvasi Bhumi
1.3 Socialisation and campaign on PES to 80 industries getting services from KTI		
2. Establishment of intermediary organisation for PES	180 days	Rekonvasi Bhumi & Ad Hoc team
3. Community empowerment	450 person days	Rekonvasi Bhumi
3.1 Organisational development of the group on institutional, economic and ecological aspects		
3.2 Routine meeting		
4. Support to FKDC	4 times	Rekonvasi Bhumi & FKDC
4.1 FGD at the FKDC level		
4.2 FKDC consults with central government for clearness of authority in Cidanau watershed management		KTI, FKDC and Rebhumi

5.2 Research activities

5.2.1 Documentation of learning from Cidanau and Brantas: an adaptable model for PES

Aim: To record the process towards and mechanism for PES in Cidanau and Brantas to express learning to date as an adaptable model (user-friendly set of steps, lessons, principles, what to look out for, etc) for PES in Indonesia, drawing on experience from Lombok and other non-project sites wherever useful – particularly where it is possible to show a spectrum of approaches rather than a single model.
Activities: Desk review of all materials, supplemented by one-on-one semi-structured interviews. Report to undergo full review process to get comments from as many as possible of the stakeholders closely involved in the process at Cidanau and Brantas.
Output: Concise guidance report ("toolkit") written in style appropriate for district-level government, NGOs and companies. Specific guidance within the report targeted at these different groups of stakeholders.

5.2.2 Impact study of changes in socio-economic conditions following the introduction of PES

Aim: To measure changes in a small number of key socio-economic indicators since the baseline study
Activities: Discussion and careful choice of a small number of indicators, recognising that it is very soon to be attempting to measure socio-economic change (hence the rationale to keep this impact study small). Measurement of these indicators at the two sites in Brantas and two sites in Cidanau where the baseline study was done. Estimation of the impacts of PES on the wider community beyond the farmers' groups.
Output: Short report of maximum 15 pages giving methods, results, comparison against the baseline and extrapolation to the wider community.

5.2.3 Exploratory study on dominant factors affecting water problems

Aim: To supplement the Rapid Hydrological Assessments being conducted by RUPES (see also 5.2.7 below) at Brantas and Cidanau with a deeper policy-oriented investigation of geographical sources of water problems at the watershed scale (e.g. public land or private land?), the land use practices behind these water problems, and the key factors in policy and economics driving these land uses.
Activities: Critical discussion among key stakeholders, questioning existing beliefs and seeking concrete evidence to support claims, including a full review of existing literature. Report to undergo full review process to get comments from as many as possible of the stakeholders closely involved in the process at Cidanau and Brantas.
Output: Report using visual materials (e.g. flow diagrams) as far as possible and including high quality maps for both sites suitable for reproduction and future printing in final project book reports.

5.2.4 Study on agroforestry models for livelihoods at Brantas and Cidanau

Aim: To generate and compare a range of agroforestry models for farmers, including projections of relative costs and returns, and including options for different livelihoods (e.g. for a craftsperson, a livestock keeper or a fruit seller) and options that are more environmental (best for producing the desired watershed services for that catchment) or more economic (most profitable for farmers).
Activities: Desk study to project the range of agroforestry scenarios, based on knowledge of practices at Brantas and Cidanau and wider agroforestry experience in Indonesia. Thorough cost-benefit analyses for different options, from the farmer's point of view. This work will not include field trials.
Output: Report and Powerpoint presenting the various models, their livelihood and watershed service implications, and cost-benefit returns, in a clear, concise and standard format, aimed at local NGOs and government officials.

5.2.5 Study on lessons from other sectors on formal and informal farmers' institutions

Aim: To advise current development of farmers' groups in Brantas and Cidanau with experience in farmers' groups from other sectors, particularly irrigation – to avoid "reinventing the wheel" in an area in which LP3ES has great experience.
Activities: Roundtable brainstorm among LP3ES staff to collate lessons and guidance under a series of key headings, supplemented by short real-life examples.
Output: Short report in bullet-point style under key headings, aimed at field-based NGOs.

5.2.6 Documentation of process at Lombok site

Aim: To analyse the facilitation and negotiation process at Lombok, for project learning, particularly on the stalling of negotiations by PDAM Mataram.
Activities: Roundtable brainstorm among LP3ES staff to collate lessons and guidance under a series of key headings, supplemented by short real-life examples.
Output: Short analytical report and Powerpoint, making full use of diagrams and photographs.

5.2.7 Rapid Hydrological Assessment

Aim: To support RUPES to carry out a full RHA at Lombok and the local knowledge elements of the RHA in the two sub-sites in Brantas and the two sub-sites in Cidanau.
Activities: RUPES to carry out the studies under sub-contract.
Output: Full RHA reports for Lombok, Brantas and Cidanau.

5.2.8 Policy analysis: matrices of current enabling and restrictive policy at national level and at site level

Aim: To summarise current government policy that enables or restricts development of PES in Indonesia.

Activities: Desk study of policy, supplemented by one-on-one interviews where needed.
Output: Policy report and three summary matrices of policy, one for the national level and one each for Cidanau and Brantas.

5.3 National learning network activities

The national learning network provides a mechanism for active evidence-backed debate on payment mechanisms for watershed services in Indonesia. At the centre of national learning network activities is the national learning group, a regular forum of about 20 people active in watershed management and finance in Indonesia, mainly in government or the private sector (Appendix 1 lists the members of the national learning group). The group has a focus larger than the LP3ES-IIED project, bringing in other initiatives from around Indonesia to a single discussion forum.

In the second stage of the implementation phase, the national learning group will meet three times, each time focusing on one specific policy issue or contentious hypothesis related to development of PES. Each of these meetings will invite key people on the chosen theme. The national learning network will also organise one cross-visit among sites, one farmer-to-farmer visit and one regional seminar on PES, in a region where there is no PES development yet.

5.4 Documentation and dissemination activities

Documentation and targeted distribution of project outputs are strong foci in these final stages of the project. Planned activities include production of a the series of research outputs described above, collection of a small library of PES materials, two copies of the newsletter, and a final book on PES. Most materials will be available in both Bahasa Indonesia and English.

6. Management and team structure

LP3ES is based in Jakarta and specialises in policy research on social and economic issues. Within LP3ES the project will be managed by the water and agriculture section (PSDAL). However the action learning components of the project will be undertaken by partner organisations that have a local presence (Table 5).

Table 5. Partnerships of LP3ES

Site	Partner organisation (base)	Contact person
Brantas	Yayasan Pengembangan Pedesaan (Malang)	Pak Gunawan
Cidanau	Rekonvasi Bhumi (Banten)	Pak Rahadian
Lombok	Konsepsi (Mataram)	Pak Witardi

Munawir will lead the project within LP3Es, working closely with team members Suhardi Suryadi and Kuswanto. All research activities, national learning network activities and documentation and dissemination activities have a named LP3ES team member responsible for delivery. A summary of the time allocations among team members is shown in Appendix 3. The project will use freelance consultants to conduct most of the research activities, based on clearly defined terms of reference specifying the methodology, activities, deliverables and timeframe for research. Clear terms of reference will similarly be used where research activities are undertaken by team members.

7. Budget

The total cost of the activities in the first year of implementation has been budgeted for Rp 2,032 million or £116,148 (Table 6) [1]. The budget has been structured so that the figures represent the amounts that will either be constituted as sub-grants (output 1) or available for activities (outputs 2, 3 & 4). The management and coordination costs of for the first year of the project are represented as management costs. LP3S will take a management fee (overhead) of approximately 12% to cover office rent, secretarial support, telephones, financial and administrative support. A detailed budget is attached at the end of this workplan.

Table 6. Summary of projected costs in second stage of implementation phase

Output	IDR		GBP	% allocation
1. Facilitation				
1.1 Brantas	Rp	349,200,000	£ 19,954.29	17.18%
1.2 Cidanau	Rp	259,800,000	£ 14,845.71	12.78%
2. Research	Rp	604,990,000	£ 34,570.86	29.76%
3. National learning network	Rp	212,750,000	£ 12,157.14	10.47%
4. Documentation and dissemination	Rp	362,250,000	£ 20,700.00	17.82%
Overhead cost	Rp	243,600,000.00	£ 13,920.00	11.98%
Total Costs Project	Rp	2,032,590,000	£ 116,148.00	

[1] Throughout the project an exchange rate of Rp17,500 to GBP1.00 has been assumed. The average exchange rate for April 2005 was 18,400 (www. oanda.com).

Appendix 1: National learning group members

No.	Name	Institution	From
1.	Witardi	Konsepsi Mataram	Lombok
2.	L. Tasrin Maladi	PDAM Mataram	Lombok
3.	Ahmad Zaini	PDAM Mataram	Lombok
4.	Widio Parwanto	Perusahaan Jasa Tirta I Malang	Brantas
5.	Yustisia	Dinas PU Pengairan Jawa Timur	Brantas
6.	Beria Leimona	ICRAF	Bogor
7.	Yuyu R.	DFID	Jakarta
8.	Jansen Manurung	PT. KTI / PT. Krakatau Steel	Cidanau
9.	Bambang Chriswanto	Coca Cola Foundation	Jakarta
10.	Farhan Royani	LP3ES	Jakarta
11.	A. Hasanuddin	Kimpraswil	Jakarta
12.	Sofyan Bakar	Departemen Dalam Negeri	Jakarta
13.	Joko Prihatno	Departemen Kehutanan	Jakarta
14.	Hasudungan	Bappenas	Jakarta
15.	Edi Nugroho	KLH	Jakarta
16.	Munawir	LP3ES	Jakarta
17.	Suhardi	LP3ES	Jakarta
18.	Kuswanto	LP3ES	Jakarta
19.	Alice	LP3ES	Jakarta
20.	Wasmui	LP3ES	Jakarta

Appendix 2. Workshop participants at review and planning workshop March 2005

Name	Institution	From
np. Rahadian	Yayasan Rekonvasi Bumi	Cidanau
Tomaswa	PT. Krakatau Tirta Industri	Cidanau
Maman	Forum DAS Cidanau	Cidanau
Gunawan	Yayasan Pembangunan Pertanian	Brantas
Widio Parwanto	Perusahaan Jasa Tirta I Malang	Brantas
Witardi	Konsepsi Mataram	Lombok
Joko Prihatna	Departemen Kehutanan	Jakarta
Hasudungan	Bappenas	Jakarta
Edi Nugroho	KLH	Jakarta
Ivan Bond	IIED	IIED
Sonja Vermeulen	IIED	IIED
Munawir	LP3ES	Jakarta
Suhardi	LP3ES	Jakarta
Kuswanto	LP3ES	Jakarta
Mahyudi	LP3ES	Jakarta
Alice	LP3ES	Jakarta
Tati	LP3ES	Jakarta

Appendix 3. Indicative time allocations by project team (days)

Appendix 4. Logical framework

Project name: Action-learning to develop and test upstream-downstream transactions for watershed protection services in Indonesia. An implementation phase country study for the international project "Developing markets for watershed protection services and improved livelihoods"
Project duration: March 2004 – September 2006

Narrative summary	Objectively verifiable indicators	Means of verification	Assumptions
Goal: To promote the maintenance of watershed services that support local livelihoods	Watershed services improve local livelihoods where market mechanisms implemented	Published assessments of changes in livelihoods following introduction of market mechanisms in watersheds	Continued widespread interest in finding innovative mechanisms for promoting improved livelihoods in watersheds
Purpose: To increase understanding of the role of market mechanisms in promoting the provision of watershed services to improve livelihoods	1.Lessons from action learning incorporated in plans of government, civil and private organisations 2. Plans for shaping markets for watershed services and livelihoods incorporated in policy initiatives and programmes of government, civil and private organisations 3. Policy initiatives and programmes reflect hydrological findings on effec of land use on watershed services	Review of the outputs of new analysis and planning of watershed interventions in Indonesia Review of new policy initiatives and programmes involving market-based solutions to watershed problems Monitoring records of initiatives to shape markets for watershed services and livelihoods in key countries	Continued interest in Indonesia in the role of market-based environmental management Hydrological information allows some generally applicable policy-relevant conclusions to be made, and in a form useable by stakeholders Policy-makers and programme co-ordinators are responsive to recommendations and implement findings

Narrative summary	Objectively verifiable indicators	Means of verification	Assumptions
1. Site-level learning: Action-learning processes to design and test equitable market mechanisms for watershed services are developed and maintained at three sites, with special emphasis on impacts on local livelihoods	Upstream-downstream transaction to maintain watershed protection services that support local livelihood upstream Is developed	Existence of transaction; maintained or improved watershed services; equitable outcomes to upstream livelihoods	Common understanding of necessity for watershed protection and awareness of dependence on upstream land use
2. Supporting research: Participatory research studies with a particular emphasis on land use and livelihoods conducted at site and national levels	Improved understanding of the landuse and livelihood relationships for two sites Improved understanding of the role and viability of independent bodies within PES approaches	Research reports available in both Bahasa Indonesia and English, and widely shared	None
3. National learning group: Learning on market-based mechanisms for watershed services gained by key agencies is shared among a national learning group, with specified pathways for application in specific programmes	Lessons learned and experiences gained from sites incorporated into local, regional legislation, policy and practice	Response in policy and legislation by government (local or national) and private sector Examples from national database of PES schemes	National policy frameworks remain favourable to market-based instruments for land and water management
4. Documentation and dissemination: Project progress, experience gained and lessons learned documented and disseminated	Information arising out of project readily available at national and international levels	Audience-targeted products available in both Bahasa Indonesia and English Records of learning events at local and national levels	None