

Workshop Proceedings and Insights from the Field

**Stakeholders' Interactive Workshop on
Potentiality of Payment for Environmental Services (PES) Mechanism
in the Western Terai Landscape**

**Sept 5 to 9, 2009
Dhangadi, Kailali**

**Government of Nepal
Ministry of Forests and Soil Conservation
Western Terai Landscape Complex Project**

2009

1. Introduction/Background:

The concept of payment of environmental services (PES) in Nepal is relatively new and emerging. Discussions on sustainable environmental services and goods are gaining attention due to excessive degradation of forest resources and climate change. In the terai region of Nepal, the forest degradation rate alarming which needs a clear attention while linking the payment mechanism for conserving these resources. The earlier work in Nepal, for example the Kulekhani hydropower experiment, ascertains a clear case for PES in Nepal with its huge upstream/downstream ecosystem service linkages. From the learning of Nepal itself and a global review, it can be said that there is a potential to voluntarily compensation of these services. However, Nepal lacks a clear policy and institutional arrangement to establish such mechanism at large. Broader stakeholders' discussions and consultations and pilots on ground would help not only to support government in framing institutional and policy framework rather also to make stakeholders' aware to increase their willingness to pay. In order to create local awareness and explore the potentiality of PES in the areas of Western Terai Landscape Complex Project (WTLCP) together with SNV-Netherlands Development Organisation, Nepal organised a two day stakeholders' consultative workshop in Dhangadi following one and half days field visits.

Representatives from various stakeholders (government line agencies, civil society organisations, forest user groups and their networks, local governments) participated in the workshop (see annex .. for participants list). After the conclusion of workshop, a team (together with local representatives) visited several sites to explore the possibilities of piloting PES mechanism.

1.1 Understanding PES:

PES is a volunteer mechanism to ensure resource conservation that uses incentives or/and reward (cash/kind) to influence environmental services. Within this mechanism, beneficiaries of certain environmental services make payments or non-financial rewards to those who secure provision of such services (such as upstream communities for their efforts in conserving watershed area so that environmental services could be ensured in long term for downstream communities). PES mechanism is characterized by i) voluntary, ii) clear and perceivable Environmental

Services, iii) having at least one buyer/consumer and a Receiver/provider and iv) /ensuring/securing supply of long term environmental services. PES is not always market based but also may include government financing systems (the subsidiaries, for example in China, Nepal, India).

In the recent years, the discussion and debate on climate change has emerged as an international agenda. In order to reduce green house gas emissions e.g. which are supposed to cause increased global warming thus posing a major threat to world's population and ecosystem. The concept of PES is much relevant, not only in terms of rewarding upland communities but also providing them a compensation for their efforts in conservation and sustainable management. After the Bali UNFCCC conference 2007, the so called REDD mechanism has emerged as the top agenda in resource and forest conservation to mitigate climate change impact globally. The REDD itself is a payment mechanism for environmental services where communities practicing sustainable forest management are supposed be compensated through a fair carbon trade. The forest carbon issue is much relevant at the time when Nepal's forest resources are declining. This assumes to total involvement of local communities to protect their forest resources with an anticipated return from the carbon business.

In Nepal, the practice of Incentive based mechanism (IBM) for rewarding local communities for their efforts in conserving forest resources has been reflected in some of it policy and legislative instruments. The existing Buffer Zone Management Regulation allows government to pull back 30 to 50% of total revenue generated by a protected area to the development of buffer zone. This amount is managed by the Buffer Zone management Committee, an institution of local communities together with the protected area Warden. Likewise, the eco based tourism has a long history in Nepal's development initiatives. The communities are also rewarding for their efforts in developing ecotourism in terms of kind and rural development activities.

1.2 Rationale of workshop:

Within these global and national scenarios, performance-based approaches to development for meeting challenges of poverty alleviation, financial recession and impending environmental challenges due climate change are increasing gaining

recognition with policymakers. Experiences around the globe on upstream and downstream formal transaction mechanism based financial rewards to service providers (e.g. in Costa Rica) are being consolidated paving the way for a new paradigm of financing local development through locally generated financial resources. Therefore, in a mountainous and forest-rich Nepal PES could be a promising mechanism to ensure decentralised forest sector financing and local conservation initiatives. At the same time, this is urgently required in Nepal that development-stakeholders' are aware of such global and national agendas, contemporary issues and opportunities. This not only helps to identify possible areas for such piloting but also supports national and district government to come up with policy and legislative frameworks favoring such innovative mechanisms.

Keeping these issues of national and global importance and in line with the project's development objective, Western Terai Landscape Complex Project (WTLCP) brought stakeholders' from mid and far-western terai together in Dhangadi to discuss the possibility of PES piloting in the western Terai landscape.

2. Objectives of the workshop/Expected Outcome:

This stakeholders' workshop aims to bring local knowledge, viewpoints and ideas on possibility of PES piloting in the western terai landscape. In particular, this workshop set the objectives of

1. Making major stakeholders' aware on PES mechanism and contemporary issues on forest carbon trade (the REDD)
2. Analysing stakeholders' perception on possibility of PES piloting and if found positive, identify possible PES sites (at least 3)
3. Providing feed back to national PES policy formulation process, with a clearly identified 3 year PES interventions in western terai landscape.

3. Workshop Outcomes:

3.1 Inaugural session:

In light with the above rationale, the first ever regional workshop on Payment for Environmental Services in Dhangadi was inaugurated jointly by the Regional

Directors of Forests (mid and far west), Mr. Govinda Kafley and Rishi Ram Tripathi. In their opening speeches, both stressed the need of such a performance –based mechanism to ensure long term environmental benefits. They also focused on the urgent need of national policy and legislative framework on PES in broader sense and climate change in particular. The speakers also highlighted the need of bringing research and indigenous knowledge together for effective implementation of PES mechanism in Nepal in general, and far west in particular. Mr. Govinda Kafley pointed towards urgent attention needed to minimise the present deforestation rate in the Terai region, citing the case from Jhapa where 20 years back the forest cover was same as that of Kailali currently but got reduced drastically.

Mr. Vijay Kumar Singh, an independent researcher on PES in Nepal, delivered his key note speech on theoretical and practical aspects of various PES mechanisms and ecological services. Mr. Singh shared his experiences from the central Terai, especially from Mahottari and Janakpur districts, where he is involved in research on community-based upstream and downstream environmental service linkages.

A video documentary on climate change produced by the Ministry of Environment/Government of Nepal) and the Embassy of Finland was screened to make participants aware on climate change impacts, particularly in the Himalayas.

3.2 Brainstorming session on "Is Climate Change happening: What do participants witness"

After the documentary show, a brainstorming session on witnessing climate change impacts clearly indicated that the communities in downstream are observing major climate change impact in their surrounding environment and daily life. Major impacts listed by the participants are included in Table 1:

Table 1: Climate change Impact witnessed by participants

Impact witnessed on	Major impact and changes witnessed (bullets are better!)
Biodiversity/Forest resources	<ul style="list-style-type: none"> • Loss of forest resources, change in wildlife movement • high siltation/drying? in wetlands (there were many

	<p>wetlands in Kailali but now mostly not)</p> <ul style="list-style-type: none"> • decrease in insects and bird species (either permanently removed or migrated from the area) • increase in size and number of snails,
Health	<ul style="list-style-type: none"> • Increase in unknown diseases but mostly skin and eye diseases
Agriculture/Livestock farming	<ul style="list-style-type: none"> • Decrease in pasture lands • decrease in agriculture productivity • high siltation in irrigation canals • Disturb in irrigation water source, • level of water decreased in tube well, • high siltation in agriculture lands, • size and season of vegetable and fruit crop changed
Others	<ul style="list-style-type: none"> • Change in school calendar (With an increase in temperature, schools in Terai area are forced to start classes from early morning instead of usual classes from 10 am. This mostly???? impact on daily time routine – such as cooking, sleeping time, etc. • Change in public investment pattern: Earlier communities were asking for DDC support on water taps, bridges, school building but with increasing floods, their request is mostly to mitigate such flooding (such as river basin control, check dams) • Change in livelihoods strategies: With change in climate, people are now shifting their livelihood strategy from agriculture to other businesses.

3.3 Technical Sessions:

A number of technical and field based learning papers were presented to discuss on issues and challenges on PES piloting in the western Terai area. Based on these presentations and sharing, participants come up with ideas and possible solutions. List of presentation are given in below table 2. All presentations are included in the Annexes.

Table 2: Key presentations

Presentation by	Presentation on
Dr. Rajan Kotru	Why and What of PES –theories and principles
Marco Van Der Linden	Understanding Forest carbon issues (REDD) including FCPF’s based REDD process in Nepal
EK Raj Sigdel	Issues and possible mitigation measures in Chure Conservation – experience from WTLCP
Laxmi Dutt Bhatta	Possibilities in Nepal: Lessons learnt from the Central Terai experiences
Dr. Rajan Kotru	Learning from PES/Incentive Based Mechanism in India

3.4 Understanding Drivers of Deforestation and Degradation and Possible mitigations measures

The group discussions focused on analysis of drivers of deforestation and forest degradation with possible mitigation measures linking to possible PES mechanism. Despite the fact that a large population in the far western landscape lives below the poverty line, there is a willingness to conserve forest resources to mitigate disasters. The Table 3 below is the summary of participants reflection on “key drivers” of deforestation and possible PES mechanism to compensate conservation efforts.

Table 3: Drivers of deforestation

Drivers of deforestation and forest degradation
<ol style="list-style-type: none"> 1. Unemployment – poor families are mostly dependent on firewood selling for their subsistence livelihoods 2. Land Hunger/encroachment – tendency of some elites to capture land, the present political turmoil 3. Uncontrolled grazing – In far western Chure, goat farming is the major source of income. More than 200 goat sheds (ghotha) are therein Chure of Kailali alone 4. Forest Fire: There is a traditional burning of leaf litter along the forest area with an interest of getting new shoots (grass) 5. Contradictory public policy: Chure area is considered as protected resource

- use area under the policy of Ministry of Forests where as Ministry of Agriculture declares it as the key goat farming area
6. Traditional agriculture and land use practices – slash and burn in some places
 7. Political interest – rehabilitation of landless, Kamaiyas in forest areas without any proper planning and compensation to forest cover
 8. Unscientific resin tapping in most of pine forests in far western Chure causing major degradation of pine forests
 9. Lack of coordination (both vertical and horizontal) among authorities and district government
 10. Lack of ownership – Chure forests are not handed over to communities – the tragedy of commons
 11. Invasive species,
 12. Land tenure

Table 4: Possible solutions and PES mechanism

Possible Solutions and PES mechanism
<ol style="list-style-type: none"> 1. Establish a reward mechanism in terms of providing subsidy and support to local communities in income generation and infrastructure development 2. Building capacity of upstream communities in managing their resources (including awareness) 3. Introduce rotational and/or bond?? grazing practices 4. Linking effects of upstream deforestation impact to downstream, and make ensure that a portion of downstream investment is also possible in upstream (for example, a huge amount of money is invested annually in maintaining water source of Mohana irrigation, neither a cent is invested to conserve upstream catchment 5. Establish a district level funds so that upstream communities do have access to these funds for their income generating activities. 6. <i>“Janme dekhi budo bhaye sake, bakhara paler nirbah gareko chhu, aba bakhra palna na diye, mail eke garne”</i> I am rearing goats from my birth to date of this old age for my family’s livelihoods, if goat farming is not allowed or controlled, what can I do? I do not have any other skill for livelihoods, can you ensure? This statement is the key, providing communities an alternative to their livelihood option before we take any such decisions.

3.5 Capacity Development need for implementing Payment for Environmental Services

PES, as mentioned earlier, is relatively new concept for Nepal. Communities and other stakeholders' are not very much aware of such mechanism. At the same time, neither the national policy nor district initiatives are existing on establishing such a reward or compensatory mechanism to acknowledge the conservation efforts of upstream communities. It is utmost necessary that major stakeholders' are capacitated on PES mechanism to make this workable in the longer term. Participants of the workshop identified the following major capacity development needs for both micro and meso-levels.

- a) Awareness building- develop awareness building package (e.g. Info-pamphlets, brochures, leaflets, posters)
- b) Demonstration and piloting – making people aware through demonstrating such initiatives is much effective than any class room based training.
- c) Increase bargaining power and negotiation skills of ecological service providers through training, workshops, exposures, and networking
- d) Technical training to meso level organisations, including forest user group networks on ecological service valuation and modelling based on different parameters.
- e) Convincing policy makers, politicians through research and evidence based advocacy and, media campaign. Moreover, sensitization of policy makers is also very much powerful.

3.6 Possible criteria for selecting PES sites in the Western Terai – matching with standard criteria

Within the group discussion, participants agreed that the piloting of PES mechanism should initially be based on one ecological services. In most cases water service for irrigation was the prime proposition. It was suggested that once piloting works then the idea of bundling of ecological services could be pursued. Table 4 below provides some suggested criteria based on the group discussion and learning from other areas.

Table 4: Possible PES site selection criteria (note: this is not the comprehensive list, could be accommodated as per local situation in the western Terai landscape).

Broader criteria	Micro level criteria
Buyer attributes	<ul style="list-style-type: none"> • Overall economic potential of downstream to pay for environmental services • Corporate environmental awareness
Supplier attributes	<ul style="list-style-type: none"> • Poverty situation and potential for shift to alternative land management regimes • Presence of disadvantaged groups in the upstream communities
Enabling national and sectoral policies	<ul style="list-style-type: none"> • Land tenure of upstream land users relatively secure to claim and access payments or rewards incentives • Policies of DDCs and municipalities and prior experience in NRM • Potential for policy linkages and dissemination
Environmental considerations	<ul style="list-style-type: none"> • Perception of environmental crisis or some visible problems such as concerns for drinking water quality or sedimentation in irrigation canal • Nature and quality of available scientific evidence in relation to the problem • Corporate environmental awareness
Status of collective action and social capital	<ul style="list-style-type: none"> • Functioning institutions of local land managers in upstream • Functioning institutions of buyers of environmental services • Size of watershed and the potential of creating visible outcomes/impacts on ecological systems and income streams of providers • Transaction costs of interaction and negotiation
Local government and local politics	<ul style="list-style-type: none"> • Awareness on prior experience of local political leaders on the issue
Possible intermediaries	<ul style="list-style-type: none"> • Availability of enterprise services • Availability of watershed analysis and verification services
Market structure	<ul style="list-style-type: none"> • Potential for bundling various environmental services from the same land manager to create added incentives • Price structure and trends for the key substitutes of fuel-wood, fodder and timber
Cultural and political tensions between upstream and	<ul style="list-style-type: none"> • Conflict situation/scenario • Possibility of negotiation

downstream communities	
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We certainly have to add few more criteria here, may be also recheck our last year's work with Forest action!

4. Insights from the Field visits

Based on above criteria and workshop discussion, a team comprising local and project authorities, and community members visited the following sites exploring on possibilities of PES piloting. These sites vary in terms of geographical coverage, type of environmental services preferred by buyers and local community characteristics. Summary characteristics of these sites are described below in Table 5. Details to be done???not clear before taking action on piloting PES.

Table 5: Summary of possible PES piloting sites (WTLCP area)

Site	Major Characteristics	Opportunity for PES/ES/IBM
<p>Majhheri Khola watershed – Bordering Kailali and Kanchanpur districts</p> <p>Was it here that some survey has been already done on a new scheme or repairing the current one, so that should be also mentioned?</p>	<p>Upstream:</p> <ul style="list-style-type: none"> • Major source for Mohana irrigation project • 10 villages are there in upstream – about 300 households, 300 cow sheds (ghoths) • Uncontrolled grazing is the key problem • Some households also practice slash and burn agriculture • Land ownership (60%:40%, government: private (some illegal occupation also/Please confirm if it was said 30%)) • No community based approach tested as yet • Migration to lower lands is on <p>Downstream:</p> <ul style="list-style-type: none"> • Irrigation for 5 VDCs downstream – estimating ... ha of land 	<ul style="list-style-type: none"> • Sensitize upper and downstream communities on importance of upstream conservation • Analyze the economic costs of flood and build argument and awareness for conserving upstream • Analyse the cost benefit of agriculture productivity and make them aware (Who?) • Invest or reward upstream communities in kind or cash • Establish a funding mechanism (can increase irrigation)

	<ul style="list-style-type: none"> • Major irrigation project in far west started 25 years back • Water source already destroyed by flood, annual maintenance costs about Nrs. 15 million annually (water induced disaster office provides 30 gabion boxes annually- costs, DDC also invested) • Initial costs is about Nrs. 100 million <p>Transaction mechanism existed:</p> <ul style="list-style-type: none"> • Irrigation users committee formed and functional • Nrs 2 per kathha/year is levied as irrigation tax • There is willingness to pay of downstream irrigation users 	<ul style="list-style-type: none"> levy) to provide income generating support to upstream communities. • Negotiate and dialogue with subsidiaries (e.g. DDC, VDC, water induced disaster management office, Mohana Irrigation project)
<p>Bedkot Tal (wetland) and religious place, Kanchanpur</p>	<ul style="list-style-type: none"> • No population living upstream to Bedkot lake • Religious sites, potential for eco tourism (More than 30,000 internal tourist flow in a year) • For last 40 years, a huge siltation caused reduction of wetland • This area was famous for Bijay sal forest but <u>not much seen</u>???meaning? for last couple of years • Source of water for some nearby downstream communities • The downstream communities are involved in conservation of this area • Four years back, DDC contracted to a local contractor for fish farming which caused major destruction of avifauna 	<ul style="list-style-type: none"> • A potential site for eco tourism (tourism as ecological service) • Negotiation required with DDC, VDC and Nepal Tourism Board • Reward downward community for their efforts in managing this wetland • A tourism levy could also provide some internal funds for rewarding these communities??????

	<p>Mechanism:</p> <ul style="list-style-type: none"> • A Bedkot Tal management committee is formed but not active and functional 	
<p>Rajital (wetland) area, Kailali</p>	<p>Upstream:</p> <ul style="list-style-type: none"> • An extremely beautiful landscape and well conserved Chure forests • 150 households in upstream with agriculture as major livelihoods strategy • Water source for irrigation and drinking water below • 180 ha of agriculture lands privately owned • An irrigation/drinking water project survey by a local NGO is being done and discussed benefiting .. ha of land for irrigation • Raji lake is well positioned in between upstream and downstream • Fish farming is presently practiced with a VDC contract worth Nrs 18,000 per year. This money is invested for salary of school teacher • Access to road and possibility of other vegetable farming for cash income <p>Downstream:</p> <ul style="list-style-type: none"> • Five villages directly using water from this source • Once irrigation project is completed, benefiting major agriculture land for irrigation. Similarly drinking water project may lead to larger attention 	<ul style="list-style-type: none"> • Ideally positioned watershed linking ecological services (here, bundling of services is possible, tourism, water for irrigation and drinking, carbon trade off and biodiversity) • Small population, need support from subsidiaries??? to initiate piloting • Major reward system for upstream sustainable management could be established through irrigation levy, managing wetlands etc

	on conservation of upstream by the beneficiaries in downstream	
Mohana Kailali corridor and Industrial area	<ul style="list-style-type: none"> • An important corridor linking to Laljhadi productive landscape and wildlife movement • Operating more than 10 major industries (resin and turpentine, katha, poultry farm), causing water and soil pollution in the area • Underground water is also used for industrial purpose • Industrial waste is directly mixed in river system, causing major harm to human and wildlife • Increasing population, easy access to transportation • Five community forests surrounding this corridor contributing important role in mitigating environmental pollution <p>There were earlier flood disasters Grass harvesting by local communities in the river bed is also practiced Erosion on river bunds can be observed</p>	<ul style="list-style-type: none"> • A high potential area for PES piloting with distinct ES buyers (the industries) • Major interventions are needed to reduce industrial waste • Negotiations are required (CFUGs, industrialists, chamber of commerce and municipality) • Concept of corporate social responsibilities could also be linked with PES mechanism • CFUGs are rewarded through this fund. • CF group is willing to do more afforestation

5. Lessons and Way Forward

1. Upstream conservation and sustainable management pays

A huge amount of money is already being invested in downstream (such as in protecting and maintaining water source for Mohana irrigation). However, not much has been realised to invest in protecting upstream catchments.

Stakeholders' realised that there is a need of such interventions in upstream

conservation, which can only encourage communities in conserving their resources which also minimise impact at the downstream.

2. Capacities for policy and management in practice a must
There is a strong need to capacity building of major stakeholders at both meso and micro level while also a need to convince policy makers to formulate national policy and legislative framework on PES and Forest carbon
3. Awareness and Agreement of downstream is the key driver for PES operationalisation
Communities living in downstream also strongly agree that they have to collaborate with upstream communities for their development and conservation. A locally managed mechanism could harness such relations.
4. Convergence and synergy in service delivery as stimulant
Actors involved need to be brought together to show the impact of doing Independently. There is still dilemma that each and every actors are doing at their own without much coordination and partnerships. (needs better formulation)
5. Pioneering role of subsidiearies
There is a strong need and involvement of subsidiaries (such as municipality, DDC/VDCs) at the initial of PES piloting. In order to increase the willingness to pay for environmental services until a system is in place, their role is crucial to make people aware of ecological services.
6. Forest carbon trade still a long hop
Forest carbon issues, REDD, is not mostly discussed at the regional and micro level, particularly in far western area. A conceptual discussion and dialogue is utmost to make forest user groups and other stakeholders sensitize on role of forests in carbon sequestration.
7. Potential to refine valuation methodologies a chance

The methodologies for valuation of ecological services are important to convince service buyers. Piloting and testing of such methodology will increase local stake and willingness to pay.

Based on these learning, WTLCP together with other likeminded organisations and stakeholders need to work closely to pilot PES mechanism in the western Terai landscape. A tentative 3 year plan on PES piloting is attached in Annex 4.

6. Annexes

Annex 1: List of Participants

Annex 2: Workshop schedule

Interactive workshop on Payment for Environmental Services in the Western Terai Sept 6-7, Dhangadi

Jointly organised by:
Far Western Regional Directorate of Forests, Dhangadi
Western Terai Landscape Complex Project (WTLCP)

Day 1 (Opening session) – Sunday

10.00 – 10.30 Registration, Welcome and Opening Remarks
Get started – Dinesh
Welcome – Ekraj Sigdel
Opening note: Regional Director

DAY 1 (programme session)

10.30 – 10.45 Introducing yourself

10.45 - 11.00 MFSC film on climate change

11.00 - 12.00: Group discussion **Tea served during group discussion**

12.00 - 12.20 Why and What of PES – a presentation by Dr. Rajan Kotru

12.20 - 13.20 Understanding Forest carbon issues, REDD (presentation by Marco Linden)

13.20 - 14.15 Lunch Break

14.15 – 15.00 FCPF's based REDD process in Nepal

- REDD process and content
- RPP (REDD and Climate CELL)
- Components of R-Plan
- Main issues to be addressed (eg reference scenario, benefit distribution and income generation for the poor, outreach and consultation)

15.00– 16.00 Discussion on Forest Carbon Issues and REDD (open session) **Tea served during group discussion**

Group discussion based on (2 groups in each):

- **Drivers of Forest deforestation and degradation**
- **Equitable benefit sharing mechanism from ecological services**

1600 onwards – film show "Inconvenient Truth and discussion

End of day one

Day 2 – Sunday

09.00 – 09.30 WTLCP perspectives on PES (Dinesh Karki and Ek Raj Sigdel)

09.30 – 10.15 PES Possibilities in Nepal (Laxmi Bhatta)

10.15 – 10.45 Learning from PES/IBM in India (Dr. Rajan Kotru)

10.45 – 12.30 Group Work based on thematic areas: ***(Tea served during the group work)***

a) Capacity Building needs for PES

b) Selection Criteria for PES Sites for WTLCP sites

12.30 -13.30 Lunch Break

13.30 – 14.30 Group work Presentation

14.30 – 15.15 Matching selection criteria with standard selection criteria

15.15 – 15.30 Tea break

15.30 – 16.30 Pre-screening of sites and preparation of field trips and Sum up

16.30 – 17.00 Closing

Annex 3: Presentations (separately included)

Annex 4: 3 year indicative plan for PES piloting in WTLC area

		Budget indication		Time line year		
		WTLC	outsour	2009	2010	2011
Output 1: Stakeholders Senticized						
1.1	Understanding the field realities - field visit to WTLC area (MFSC, WTLC, partners and collaborators)	50				
1.2	Inception regional workshop in Dhangadi	25				
1.3	Development of awareness materials and process guidelines	250				
1.4	Multistakeholders' consultation workshop in Dhangadi	100				
1.5	Explore possible PES piloting sites					
1.6	Site level workshop - understanding upstream and downstream linkages	100				
1.7	Exposure visit (Kulekhani and other areas)	100				
1.8	Cross site sharing workshop	75				
1.9	Communication through local media (FM radio)	25				
1.10	Provide inputs to district forest management plan and DDC annual plans	15				
Output 1 total		740	0	0	0	
		540 for year 2009				
Output 2: Technical methodologies tested and lessons generated						
2.1	Develop resource inventory of the sites (2)	100				

2.2	Participatory mapping of the environmental services (carbon in all sites, overall watershed analysis in Lothar, drinking water???)	100				
2.3	Quantify??what happens here? the services combining local and scientific knowledge	150				
2.4	Valuation of environmental services	250				
2.5	Review good practice guidance notes and adapt them for participatory forest management context in Nepal. This should help much earlier and in the very first year 2009/10	100				
2.6	Establish monitoring system (linked to some identified markets for environmental services if possible)	150				
2.7	Documentation of methodological lessons and process monitoring	50				
	Output 2 total	900	0	0	0	
Output 3 Institutional mechanisms experimented and lessons generated						
3.1	Analysis of institutional processes, constraints, opportunities	30				
3.2	Analysis of financial flows, valuation and transactions	50				
3.3	Identify at least one potential service for each site through which all Stakeholders will have a win-win situation;	100				
3.4	Map the ES producers/sellers and potential buyers	100				
3.5	Facilitate dialogue/negotiation between them (e.g. upstream-downstream dialogue);	50				

3.6	Facilitate formation of monitoring and verification mechanisms.	75				
3.7	Value chain analysis of key ecosystem services	100				
3.8	Guideline for developing institutional mechanism for PES	100				
	Output 3 total	605				
	Output 4: Policy and regulatory issues identified and communicated					
4.1	Document and synthesise reflections and lessons on technical and institutional issues	50				
4.2	Identify key policy issues, and develop recommendations	50				
4.3	Western regional workshop	150				
4.4	Contribute to policy deliberation based on the piloting experience (1 discussion paper and sharing with REDD group in an on-going basis)	75				
4.5	National sharing workshop	350				
	Output 4 total	675				
	Total Financial obligation	2920				