



Report for CUTS: Establishing a Payment for Environmental Services (PES) Scheme on the Protection of Drinking Water Source in Chukha Dzongkhag

Introduction

The main objective of the project is to establish a PES scheme on protecting the drinking water source for 4 companies and other water users in Pasakha area under Sampheling geog of Chukha Dzongkhag in Bhutan.

The environmental service (ES) is the protection of the drinking water source at Devithan at the bottom of Burkhey village. The ES providers are the Burkhey Community Forest Management Group (CFMG) consisting of 25 households from Burkhey village. The ES buyers are the 4 companies (Tashi Beverages Ltd. – Coca Cola, Bhutan Board Products Ltd, Druk Cement, and Majur Oxygen and Gases) and 2 private water users.

The intermediaries are the Dzongkhag Forestry Sector of Chukha Dzongkhag, Watershed Management Division (WMD) under Department of Forests and Park Services (DoFPS) and SNV Bhutan. The funding for establishing the PES scheme is from Consumer Unity & Trust Society (CUTS).

A. Activities Undertaken During the Reporting Period: Outreach and Highlights

The following activities were implemented for establishing the PES scheme:

- i) Mapping work to demarcate the catchment, identify land designations for the catchment, identify land uses at the date of the satellite image.
- ii) Field Visit to evaluate catchment, identify and demarcate land uses via GPS, initial technical design of the PES activities.
- iii) Overlay field visit data on digitized map. Finalize map for presentation at ES buyer and provider engagements.
- iv) Workshop with all ES providers (CFMG and GRF) on PES concept; identification of issues, wants & needs; identification of solutions (activities related to field visit); evaluation of willingness to participate; and discussion of opportunity cost.
- v) Institutional needs analysis: CFMG and communities engaging in the GRF area.



- vi) Workshop with all ES providers and buyers to build capacity and shape commitments of each party to participate in PES agreement, finalize PES activities.
- vii) Conduct socio-economic survey
- viii) Evaluate results of the socio-economic survey and generate baseline report. Integrate follow-up surveys into the M&E protocol.
- ix) Establish water quality and quantity (flow) baselines with relevant agency (report required). Generate endorsement for future testing and integrate into M&E protocol.
- x) Opportunity cost evaluation and report generation.
- xi) ES provider capacity building on negotiation skills and institutional deficiencies identified in the needs analysis.
- xii) Negotiation workshop where the payment level for each activity is set/agreed; payment procedures laid out; terms & conditions clarified and agreed; M&E and verification process presented; and agreement drafted with support from all ES buyers, providers and relevant government agencies.
- xiii) Translation of the PES agreement into Dzongkha and Nepali.
- xiv) Signing of the PES agreement with all relevant stakeholders present.

Activity Results

The highlights for completed activities are given below:

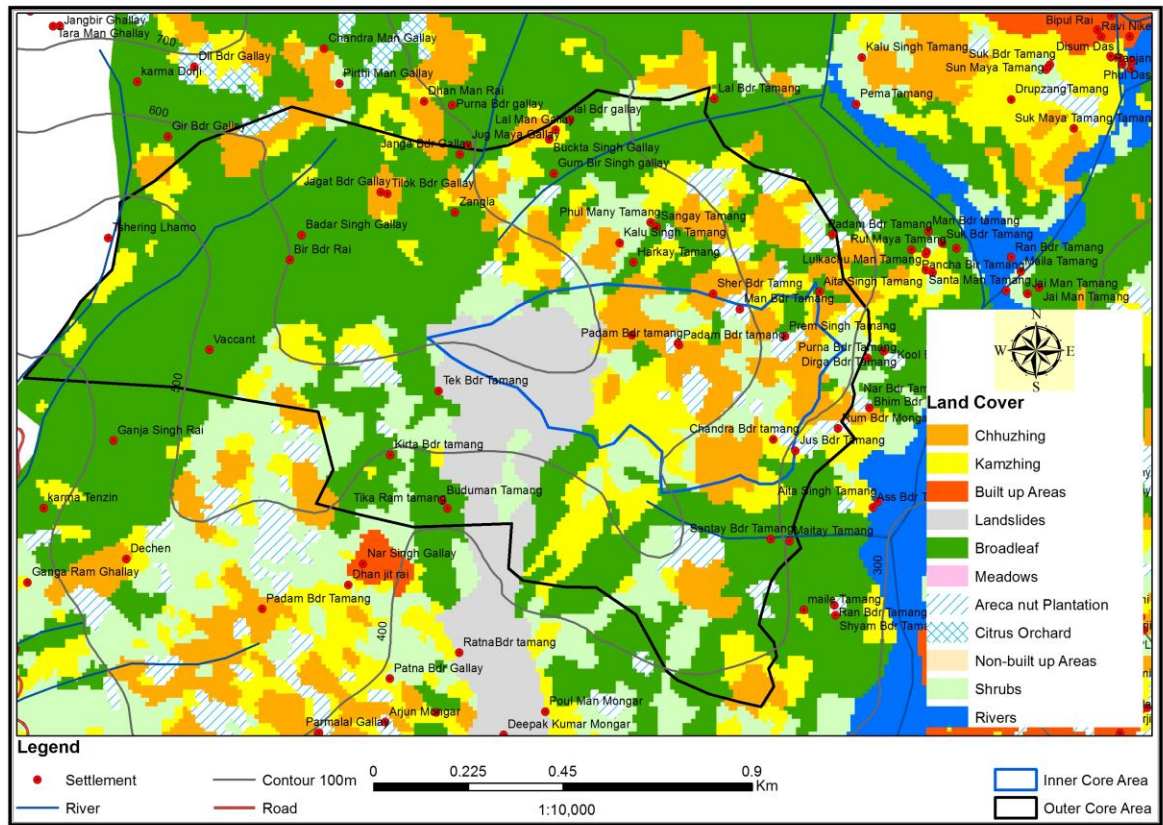
- i) Identification of environmental service (protection of drinking water sources for the 4 Companies in Pasakha, Pheunthsholing, Bhutan). Two springs with continuous flows emerge out of a location called Devithan towards the bottom of Burkhey village. The 2 springs are used by 4 companies (Druk Cement, Tashi Beverages: Coca Cola, Bhutan Board Products and Majur Oxygen & Gas) and some other private users as their water offtake point. The protection of these 2 perennial springs are important for sustainable drinking water for all users in the area, the Coca Cola bottling plant and the other businesses.
- ii) The 25 of 29 households of the Burkhey Village, which are members of the Burkhey Community Forest Management Group (CFMG), were identified as the ES providers. Four (4) companies in the Pasakha area were identified as ES buyers. In consultation with both providers and buyers of the environmental services and through exploration of the surrounding areas of the water sources, seven activities were identified as activities to protect the environmental services. They are as follows:



1. Plantations in degraded/barren areas (about 2.5 ac) around the 2 water outlets in government land and in other areas of the designated catchment
 2. A buffer of 50 m radius shall be maintained from the centre of the 2 water outlets in government land wherein no trees shall be harvested
 3. Domestic animals shall be strictly prevented within 50 m radius from the centre of the 2 water outlets through 480 m fencing
 4. Maintaining the hygiene of the surrounding area of the 2 water outlets (below footpath of the lone house and above motor road)
 5. Guarding of forests surrounding the 2 water outlets plus all other installation/infrastructure/plantations (tank, fence and pipes) within 100 m radius from the centre of the 2 water outlets
 6. Performing annual rituals (puja) for local deities at Devithan
 7. Improving sanitation of households with pit toilets (subject to further discussion before signing of agreement)
- iii) Valuation of the 7 agreed PES activities were determined mainly using an opportunity cost analysis method to assess the impact of the activities on the ES providers.
- iv) Consultation with ES providers: During the consultation, the concept of PES was explained to the farmers and opportunity costs for each PES activity was determined. The expected payments to the providers was discussed and noted for further discussion with the buyers. Negotiation skills were imparted to the providers, with a focus on facts and figures for each required activity during the negotiation process.
- v) Consultation with ES buyers: The buyers were made aware of the PES concepts. The PES activities were discussed along with the estimated opportunity costs. The willingness to pay from the buyers was also sought and noted for negotiation with the ES providers.
- vi) Facilitation of negotiation workshops between the ES providers and buyers: The 2 parties were brought together and payments for each activity were discussed and consensus was reached. The buyers mostly agreed to the prices suggested by the



- providers. The terms and conditions of the agreement were also discussed and developed.
- vii) Assessment of the catchment for exploring potential PES-related activities: Upon exploring the catchment, additional activities such as extending drains, fencing around water sources and improving sanitation facilities (pit toilets) were included in the list of PES activities.
 - viii) Land use maps and maps depicting PES activities in the catchment were prepared.
 - ix) Determining materials costs for fencing and extending drainage.
 - x) Conducting socio-economic survey and reporting (to be completed in the 3rd week of December).
 - xi) Preparation of PES agreement and signing by the parties (to be completed in the 3rd week of December).
 - xii) Assessment of Institutional Need Analysis: The Burkhey Community Forest Management Group (CFMG) is in its final stage of approval for endorsement by the Department of Forests and Park Services (DoFPS). Approval is expected within 1st quarter of 2015. The Burkhey CFMG has already appointed all office bearers (Chairman, Secretary & Treasurer). They have already started some of the activities per the Community Forest (CF) Management Plan. These activities include: Plantations of bamboos and broom grass in approximately 5 ha of degraded lands with support from Helvetas. This area has also been fenced to protect the plantings. From the Dzongkhag and Geog Forestry Office side, they have imparted training on record and book keeping and monitoring to 7 members including the office bearers; roles and responsibilities for each entity was made clear to the CFMG members; goals and objectives of creating the CFMG were also briefed; CFMG was also made aware of support from different agencies under DoFPS. Once the CFMG is approved, the 7 members will impart the knowledge to the rest of the members. Two acres of teak and champ were planted with support from Dzongkhag Forestry office.



The map above illustrates an inner core area surrounding the 2 water outlets wherein the 7 PES activities will be implemented. The outer core area illustrates potential landslide areas where there is overgrazing and other hazardous activities that degrade the soil stability.

Observed/Expected Changes in the Specific Domains that you are Working in (Agriculture, Water & Energy)

While the baseline situation in the project area had the potential for the implementation of various conservation activities via the submission of the Burkhey CF/CFMG to DoFPS, the PES scheme has structured many of the conservation goals and priorities of the Government and the local businesses and communities.

The fencing around one of the water outlets completed by the Coca Cola (Tashi Beverages) Company is a good start, but it protects only their water offtake and is in a dillapidated state. The PES project will protect the water offtake for all water users and the management activities within the PES agreement and the CF Management Plan will monitor and manage related resources.



A drain to protect the Bhutan Power Corporation (BPC) tower currently collects waste water from rain and runoff and discharges it into the water outlets that feed directly into the water offtake point. The PES project and the related activities not only extend the drain to a point outside of the watershed, but the project also coordinates these often disparate development activities and addresses them holistically and sustainably.

With implementation of the 7 agreed PES activities, the 2 water outlets will be protected resulting in improved water quality for the ES buyers and will provide an alternate source of income for the ES providers. Both parties will be invested in the long-term sustainability of the PES project. The project will ensure this outcome with the built-in M&E and verification protocols.

Unintended Outcome (if any)

During the negotiation workshop the ES buyers indicated that the BPC should extend their drain to avoid contamination of the drinking water source for the 4 companies. While this is a very appropriate solution to an existing water quality issue, it was not anticipated by the PES Project Team from the outset. It was agreed that the buyers will approach the appropriate authorities (Dungkhag/Dzongkhag) to ensure that BPC takes the necessary actions.

Gender dimensions if any

The socio-economic surveys that have been tailored for use within this project will evaluate the relationship between men, women and the natural resources, as well as, decision-making dynamics within the CFMG. Once the roles and responsibilities of female gender are clear, strategies will be developed to help the women in the community engage in a contextually relevant manner with regards to natural resource use and management, as well as decision-making within the CFMG. Additional capacity gaps will also be identified and addressed. This work will be conducted in December 2014.

Is there any planned activity that could not be undertaken during the period? If yes, give reason and strategy for conducting the same?

No. The project is proceeding as planned within the developed work plans. Since the project is in the final negotiation stage, we anticipate the signing of the PES agreement within December 2014.

Any specific organizational outcome while implementing the activities?

The PES project has begun to build the capacity of the CFMG beyond the typical CF formation processes. The structured activities of the project will continue even after the signing of the PES agreement. As mentioned above, the Burkhey CFMG has already engaged in some activities to formalize the local institution and to build the capacity of the members



within it. As mentioned, the role of women in resource use/management will be fully evaluated, as well as the gender dynamics in decision-making within the CFMG.

Contribution to the portfolio objectives (Please refer the domains of changes for the three domains of agriculture, water and energy given in the annexure and mention how your activities have contributed in achieving them)

The focus of the project is catchment protection for a water source that 4 major companies rely on, including a number of other water users. The surrounding communities and all of the CFMG members actively participate in agriculture for their primary source of livelihoods.

A satellite image of the project area is used to illustrate current conditions, future activities, land tenure, resource rights and the existence/location of deficient sanitation facilities that are potentially impacting the quality of the water.

While “energy” is not directly within the scope of this project, in aggregate, a number of similar projects will have a significant positive impact on regulating water flow and limiting sedimentation in the rivers, thereby lowering the operational and maintenance costs for the only electricity source in the country—hydropower. Also, demonstrations of functioning PES schemes provide great reference points for the country in scaling-up the use of PES project in numbers, scope and size. A hydropower-related PES is envisaged in the near future for Bhutan. The Chukha approach can be used as a great example of how small-scale catchment protection activities via PES can have a strong impact on energy generation and the economy. Of note is that, 30% of the national GDP is derived from hydroelectric power sales to India.

Any other information/ case studies that you feel can have linkages to overall SDIP goals or the work of other SDIP partners?

The present project has drawn on experiences from the only other PES scheme in Butan—Mongar. The PES scheme in Mongar is also focused on the protection of drinking water source. The ES buyers in that scheme are the water users in the town of Mongar. There, the provider is the Yakpugang CFMG which includes 113 households as members. The previous contract was for 3 years (2011 to 2013) with 6 agreed activities geared towards protection of water source and improving water quality. The provider gets Nu.52,000 annually for implementation of the 6 agreed activities. That PES contract has been extended for another 5 years (2015-2019) with the inclusion of Mongar Regional Referral Hospital (MRRH) as another buyer. The annual payment to the provider has been increased to more than Nu. 142,880.

Local Consultan on the PES Scheme in Chukha:

As evidenced by the report (above), the activities of the local consultant are interlinked with project deliverables. Further, by using a local consultant, with hands-on technical oversight from the SNV PES & REDD+ Advisor, more knowledge is transferred locally and kept in country after project completion. In this light, the PES project team works hand-in-hand with the focal agency of the Royal Government of Bhutan, the Watershed Management Division, to build additional capacity in order to scale-up the use of PES as a tool to achieve sustainable development throughout the



country. The inputs of the local consultant have helped in drafting a PES agreement between the environmental service buyers and providers for 5 years.