Costa Rica- La Esperanza

Hydroelectric Power (HEP) and cloud forest conservation

SUMMARY

This is one of the few direct private agreements so far: a HEP company pays the Monteverde Conservation League (MCL) for the hydrological services rendered by the Children's Eternal Rain Forest which covers most of the hydropower plant's upper catchments. Since this forest is already a designated conservation area, the Payment for Environmental Services (PES) scheme is unlikely to result in additional conservation. But the company contributes in this way to the management of the reserve and has also benefited from being able to build the dam and water intake on land of disputed ownership inside the reserve. The company's PES contribution is treated as Operation and Management (O&M) cost, which represents an increase of about 20 per cent increase in annual O&M costs (note that the company receives a fixed price for the sale of electricity and therefore cannot pass on the bill to final users); contracts are signed for 99 years.

MATURITY OF THE INITIATIVE

Ongoing: contract was signed in October 1998 (the same year that the HEP began to build its plant).

DRIVER

Hydropower company is keen to regulate flows (control runoff) and to reduce sedimentation. An important driver for the company was to "win" the favour of the forest owner (in this case, the Monteverde Conservation League, owner of the forest reserve) because it needed to build part of its infrastructure in areas belonging to the reserve.

STAKEHOLDERS

Supply

NGO (seller) Children's Eternal Rain Forest covering about 3,000 hectares of the watershed and owned by the NGO, MCL (note: MCL owns 22,000 hectares of forestland in the Tilarán Cordillera). A significant proportion of the area is cloud forest.

Demand

Private corporate (buyer) La Manguera S.A., operating La Esperanza Hydroelectric Power Plant (LEHP), located downstream from the cloud forest. Within the watershed, water is only used to produce hydropower. Water in the periphery of the HEP is mostly used to supply aqueducts for household consumption and dairy farms. Downstream it is used for recreation purposes and for cattle that drink directly from the watercourse of streams and rivers.

Intermediary

No intermediary: direct negotiations between buyer and seller.

Facilitator

Background studies were contracted out to consultants.

MARKET DESIGN

Service

Regulation of flows and control of sediments.

Commodity

Conservation and protection of existing ecosystems. According to Rojas and Aylward (2002), the MCL commits in the contract to:

- Conserving and protecting the existing forests in the watershed.
- Preventing land invasion.
- Managing the forest area.

Payment mechanism

Direct negotiation - payments made directly to the Monteverde Conservation League.. The contract was signed for 99 years, covering 3,000 hectares.

Terms of payment

The HEP payments are: Year one: $3 per hectare per year during construction of the project; Year two: $8 per hectare per year when beginning to produce power; $9 per hectare per year in the second year of power production; and $10 per hectare per year during the third and fourth years of production. By the fifth year, the HEP company pays $10 per hectare per year multiplied by a factor that takes into consideration the difference between forecast and actual production volume over the payment period and between average unit sales price of power and the price on the first day of the period. Private energy producers in Costa Rica have a production cap. This in turn places a limit on the payment level.

Funds involved

The exact amount depends on changes in production volume and price but annual payments by the company from the fifth year are in the region of US$30,000 per year (US$10 per hectare times 3,000 hectares).

ANALYSIS OF COSTS AND BENEFITS

Economic

Low level of competition. The payments cover between 10 per cent and 25 per cent of the MCL's annual operating costs. In return, the HEP is guaranteed maintenance of the current level of environmental service (as the area is already protected, there is no expectation of increased environmental service). The payment scheme however, has been the means for resolving a land ownership dispute and enabling the La Manguera to build the dam and water intake on land claimed by both the company and the MCL but in the possession of the MCL. The company treats PES costs as O&M cost (roughly US$30,000 from a total of US$140,000). It is a considerable additional cost for the hydropower project, representing a 21 per cent increase in annual O&M costs. The company has a cap on the sales price of electricity and therefore cannot pass on the bill to final users. This HEP invests US$5 per kilowatt per year while the others that deal through FONAFIFO ultimately invest less than US$ 1.5 per kilowatt per year (Rojas and Aylward, 2002).

By 2010, payments for environmental services represent about 50 per cent of the MCL's budget, originating from different sources. Besides the initial agreement with LEHP, payments also come from the Costa Rican National scheme of Payments for Environmental Services (PSA), and a deal for another hydroelectric plan (El Encanto Hydroelectric Project, CNFL). In 2009 the MCL signed another cooperation agreement with the company CONELECTRICAS to solve disputes over water flows. The deal includes a direct payment of approximately US$400,000.00 over 18 years, and would indirectly facilitate access to approximately US $ 1,179,840.29 over the next 38 years (TEEBCase Porras, 2010).The LEHP-MCL PES scheme has resulted in a 21 per cent increase in the operational and management costs of the LEHP, which has resulted in a significant contribution to the annual budget of the MCL in an amount that accounts for approximately 10-25 percent of the annual budget. However, being perceived as financially contributing to conserve tropical rain forest has boosted LEHP's public image, as negotiations between LEHP and MCL took place during a period where communities in Costa Rica were very vocal about their opposition to private hydropower projects.

Environmental

Payments are used to help protect the cloud forests in Monteverde that are host to a large variety of flora and fauna. Because the area is located on high slopes with high propensity to landslides, the company perceives that protection of the forest results in sediment control and stable water supply, although there are no studies supporting this. The payment can be interpreted as a means of avoiding the risk posed by land use change.

Social

Environmental education. It is difficult to track exactly which social benefits can be attributed to the contract with the company as the MCL already has several environmental education programmes in place.

LEGISLATION ISSUES

Land use and forest cover in the area are unlikely to change as they are regulated by the Ministry of Environment (MINAE) and are under reserve status. The MINAE plays a role in ensuring the conservation of forest cover and is in charge of imposing fines or taking legal action for violations to the Forestry Law of 1996. Other laws impose restrictions on land use in areas close to springs and river courses to preserve forest cover and avoid pollution (to learn more about the laws, see Rojas and Aylward, 2002).

MONITORING

The MCL patrols the area to prevent forest fires, etc. Land use is very unlikely to change.

MAIN CONSTRAINTS

Information not available.

MAIN POLICY LESSONS

This scheme shows that payments may be a strategy to minimise risk. Also, where there is only one seller and only one buyer, voluntary contractual arrangements may work better than a top-down national level payment scheme.

OTHER INFORMATION

Information not available.

CONTACT

Information not available.

REFERENCES

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LINKS

http://www.fao.org/ag/agl/watershed/watershed/papers/papercas/paperen/costa2.pdf