The Costa Rican system of direct payment for environmental services[1]

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Costa Rica has a history of innovative approaches to development. In the fifties, in the middle of the cold war, the army was abolished releasing 15% of the country's gross national product for use in development and social programs. In the eighties, Costa Rica was the first country to carry out a "debt for nature" transaction, which has subsequently attracted tens of millions dollars for conservation of its forests.

Costa Rica is now launching three national level carbon sequestration programmes, two in forestry and a third in renewable energy. Commercialisation of CO_2 reduction credits is done through the system of Certified Tradable Offsets (CTOs), which are issued by the recently created Costa Rican Office on Joint Implementation (OCIC - Executive Decree N. 25066 Minae, 1996). These CTOs are credits of carbon fixation based on the amount of CO_2 fixed in forests. The first batch of CTOs (200,000 tons of carbon) was sold to a Norwegian consortium at US$ 10/ton C (US$ 2.70/t CO_2), for a total of US$ 2,000,000.

The Private Forestry Programme (PFP), encourages land owners to opt for forestry-related land uses by providing direct payment for environmental services. Environmental services include CO_2 fixation, water quality, biodiversity, and landscape beauty [Forestry Law N. 7575, April 1996; La Gaceta (1996)]. The monetary incentives aim at increasing the attractiveness of forestry compared to higher impact forms of land use. Incentives are paid to land owners over a period of 5 years following the signing of a contract to keep their land under a specified type of utilisation for a minimum period of 20 years. Farmers who receive these incentives assign the rights of to the environmental services of the government, who bundles them for potential sale. The resources for initiating the PFP programme were raised by a domestics 15 % tax on fossil fuels, which is expected to raise US$ 21 million per year (Franz Tattenbach, pers. comm). It is hoped that future payments to farmers will be based upon successful sales of resultant CTOs.

The value of PFP incentives varies. There are three main areas of interest: conservation of existing forests, selective harvesting for sustainable wood production, and reforestation or natural regeneration of degraded pasture or agricultural land. In the case of private forest conservation, farmers receive U$ 56/ha/yearfor to a total of US$ 280/ha. They are also waived payment of land tax. Those opting for natural forest management receive US$ 47/ha/year, to a total of US$ 235/ha, in addition to the revenue derived from timber harvesting. In order to enforce compliance with low impact logging guidelines, the law requires that any harvesting operation must be supervised by a trained forester. Farmers who choose to reforest part of their agricultural land receive a series of payments related to the costs of plantation establishment, to a total of US$ 558/ha.

Beyond CTOs, Costa Rica is also working on ways to charge the economic sectors which most benefit from these services. One example is the creation of a system to charge hydroelectric plants for the conservation of their water catchments, at a rate of US$10/ha/year. A similar mechanism is being created for remunerating farmers in eco-tourism regions. In the case of biodiversity, genetic prospecting contracts have been firmed between INBio (the Costa Rica institute of genetic resources) and international chemical

[1] Excerpt from "Greenhouse gas mitigation: A review of International Policies and Initiatives. Stuart, M. and Moura

companies. The first of such contracts have been signed with Merck, the large Swiss company, and stipulates that Merck will pay to Costa Rica 10 % of the profits from any product derived from their forests.

The institution co-ordinating the administration of the private sector incentives is called Fonafifo (Fondo Nacional de Financiamento Forestal - Forestry Financing Fund), an office created by the MINAE (Ministerio del Ambiente y Energia - Ministry of Energy and Environment). Fonafifo has the role of receiving and analysing applications, conducting field verifications, carrying out the payments, and monitoring field implementation of forestry projects.

Costa Rica is also working on a second national level land use project, called Protected Areas Programme (PAP), with the objective of reducing deforestation rates by consolidation of its national parks network. The programme aims at consolidating 570,000 ha within 28 national parks, and claim the carbon savings derived from avoided deforestation, which historically has averaged 3% per year. Costa Rica expects to avoid the release of about 18 million tonnes of carbon (66 m t CO_2) through the implementation of the PAP. These savings will be independently verified by the international certification company SGS Forestry, and CTOs will be issued accordingly. At a projected price of US$ 10 per tonne of carbon, Costa Rica expects to raise US$ 180 million through the Protected Areas Programme. The sale of CTOs from the PAP will be done with the assistance of the Centre of Financial Products, possibly through Chicago Board of Trade transactions. In conjunction with the Earth Council, who is providing some of the catalytic finance for the PAP, Costa Rica will use a portion of those proceeds to finance construction of the Earth Centre, which is envisioned as a research/demonstration project highlighting various aspects of sustainable development and environmental values.

The Costa Rican Renewable Energy Export Program, a renewable energy umbrella, bundles a group of geothermal, hydroelectric, biomass and wind electricity generation projects to export energy to neighbouring countries in Central America that would otherwise use electricity generated from fossil fuels. Money from the Greenhouse Gas Fund will contribute to the renewable energy projects' overall profitability, to regional marketing and to benefit sharing within Central America.

Project participants are the Costa Rican Association of Independent Power Producers (ACOPE); the Costa Rican Investment and Trade Development Board (CINDE); the Free Zone Corporation and ICE (Instituto Costaricense de Electricidad). The projects are a 50 MW geothermal plant; a 5 MW electricity plant that burns biomass from a sugar mill; a 20 MW wind facility; and 7 hydroelectric facilities of 20 MW each. These projects will generate a total of 215 MW of capacity to offset 1,300 Gigawatt hours of fossil fuel generation in the importing countries for an estimated savings of 1.3 million tons of CO_2 per year. OCIC will certify the GHG savings have occurred - using external verification - and bundle those savings into CTOs to be assigned to the external financing participants.

All of these Costa Rican programmes provide good examples of how could JI be utilised by developing countries to attract international investment into national priorities. The whole programme has been entirely conceived by the Costa Rican government and, consequently, totally conform to national priorities. While Costa Rica managed to secure catalytic funding for the initial phase of the PAP (provided by the Earth Council and the World Bank), all other costs will be borne by Costa Rica itself, who is also responsible for determining the sale price of CTOs. In this way Costa Rica maintains full control of the production costs and

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Costa, P., IIED, London., 1998".

profits associated with the commercialisation of CTOs, which will be redirected into priority areas within the country.

Project Fundecor

Because of the characteristics of Costa Rica's land tenure, the implementation of any government forestry and agricultural program involves the participation of a large number of small holders. Central in the implementation of the PFP program for payment of environmental services is the Project Fundecor. Fundecor (Foundation for the Development of the Central Volcanic Range) was created in 1991 with the objective of reducing the rate of forest degradation in the World Biosphere Reserve of the Central Volcanic Mountain Range Conservation Area of Costa Rica and its surrounding buffer zone. Fundecor's approach is to increase the attractiveness of forestry activities as compared to alternative forms of land use (cattle ranching, agriculture). This is done by providing a variety of services for small and medium sized farmers, which include ensuring land tenure, as well as technical, marketing, and financial assistance.

On the technical side, Fundecor provides farmers with a variety of services which include development of inventories and management plans; monitoring of harvesting activities and plantation establishment; and selection of planting material for plantations. It also assists in the process of application for government incentives, and legal permits for forest management. For farmers opting for forest conservation, Fundecor provides protection against "professional" squatters who occupy land in the hope of gaining its tenure for future re-sale. In exchange for these services, farmers pay Fundecor 20 % of the financial incentives received.

Fundecor has also assisted farmers in the marketing of their production. This includes a system of selling standing timber in auctions in the Costa Rica Commodities Market (Bolsa de Productos Agropecuarios, Bolpro S.A.) Auctions have raised the amount received by farmers by nearly 100% compared to the informal system of direct negotiation with logging contractors [La Republica (1996)]. In order to join the auctions, forest owners have to provide a package containing a management and a harvesting plan, as well as a government license to manage the forest, which are done with the assistance of Fundecor. Since this process takes some time, loggers are willing to pay more for a ready-to-use package. It is expected that this system will evolve into some sort of future market for timber sales.

Financial assistance is provided through a system of advanced payment for future sales of timber from plantations or natural forest management[2]. In the case of plantations, farmers commit themselves to provide Fundecor with 40 m^3/ha of the harvest, in exchange for yearly payments of US$ 50/ha starting after the initial 5-year plantation establishment phase (during which farmers are still receiving government incentives). In the case of natural forest management, Fundecor pays US$ 10/ha/year in exchange for 6 m^3/ha of timber to be harvested at the end of the current cutting cycle (between 12 and 15 years).

The Costa Rican system of payment for environmental services is a splendid example of government's commitment and inventiveness to achieve forestry and environmental objectives. These sophisticated financial mechanisms also provide a pioneering example of a government trying to share the costs and responsibilities of environmental services between all parties involved, i.e., the forest users, the nation as a whole, and the international community. It is also an interesting example of where forest revenue systems

[2] Funds for this program were raised through a US$500,000 loan from the World Bank.

were abolished for the sake of forest conservation.

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