



The Case of Costa Rica's "Carbon Commodity" ¹

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Costa Rica has recently established a program that provides funds for reforestation and forest protection on private lands through the sale of carbon certificates to industrialized countries. In this program, Costa Rica pays thousands of private landowners to protect forest, to manage forest through selective harvesting or to establish plantations on their lands. The participating landowners are paid from a national fund at a rate that is set each year and varies according to land use. In this respect, Costa Rica has designed a system that allows many producers to grow a "commodity" called carbon that they can sell domestically. The greenhouse gas emissions abatement activities in Costa Rica are called Certifiable Tradable Offsets (CTOs). Through discussions with other countries, especially Norway, Costa Rica has found foreign investors willing to buy these carbon offsets. Industrialized countries may eventually use carbon offsets against their Kyoto Protocol emissions commitments if the abatement activity becomes eligible through the Clean Development Mechanism established through the Kyoto Protocol. Costa Rica would like to see the CTOs traded in a manner similar to the SO_x trading mechanism on the Chicago Board of Trade (FUNDECOR and MINAE 1998). The Chicago-based Centre Financial Products already has the option to broker 4 million tonnes of Costa Rica's carbon if a demand develops with enabling legislation (FUNDECOR and MINAE 1998; Escofet 1998).

When the Ministry of International Affairs in Norway and a consortium of Norwegian hydropower companies bought Costa Rica's CTOs for \$10 / tonne carbon, this offset price was believed to be much less expensive than abatement costs at home. Norway already has one of the highest carbon dioxide tax rates in the world. Although Norway's emissions target under the Kyoto Protocol is a 1% increase from 1990 emissions, rather than the reduction target accepted by most industrialized countries, Norway's emissions are growing rapidly in some sectors.

Until relatively recently, Costa Rica's situation was not that unusual. It is a country that has seen rapid deforestation, and during the 1970s land clearing was amongst the highest in the America's

¹ This is a summary of a portion of the paper: Subak, S. 1999. Forest Protection and Reforestation in Costa Rica: Evaluation of a Clean Development Mechanism Prototype. *Environmental Management*. Forthcoming.

(WRI 1994). The motivations for clearing land were several. In earlier decades, clearing of land for pasture appeared to be the main driver. However, as the price of beef and export demand fell in Costa Rica, and the relative value of wood products strengthened, more promising conditions arose for encouraging plantation establishment and managed forests. At the same time, the number of tourists visiting Costa Rica rose and became one of the most important economic sectors in the country. And, as in many regions of the world, the Costa Rican public shares a strong interest in their own natural heritage and would like to see more aggressive conservation programs applied to those forests and natural areas that remain.

Beginning about twenty years ago, Costa Rica introduced a series of incentives for protecting forests, chiefly through tax breaks. The incentive program had various permutations as the forest and environmental ministries sought formulas that would work given limited funds. The 1996 Forestry Law, borrowing from economic valuation theory, sought to recognize the different benefits of forests and arrange for the beneficiaries to pay for forest services (see Table 1). The Private Forestry Project was introduced at that time and forms the foundation of Costa Rica's program to stimulate and reward carbon sequestration on private land. A larger program, the Protected Areas Project, uses similar financing to transfer private land into park land or protected area status. The United States has purchased some of Costa Rica's CTOs related to the Protected Areas Project. Both the Private Forestry Project and the Protected Areas Project are financed through a 5% tax on gasoline, which generates about \$16 million annually, CTO sales, and contributions from the private sector, chiefly hydropower companies.

Table 1: Forest Services Recognized in 1996 Forestry Law

Forest Services	Origin of Payment for Services
biodiversity protection	gasoline tax
carbon fixation	sale of CTOs
hydrological services	hydropower companies
provision of scenic beauty	

The Private Forestry Project has attracted a great deal of interest and more than one thousand land use contracts between private landowners and the implementers of the Private Forestry Project were signed as of mid-1998. These agreements to maintain a given forest land use applied to a total of about 600-1,000 kT carbon. Table 2 summarizes the land area and uptake rate needed to generate the CTOs that Norway purchased. In 1998, landowners participating in the Private Forestry Project received payments averaging \$120/ha/year for plantations, \$60/ha/year for forest protection and \$45/ha/year for forest management and reforestation. A rationale for the higher price paid for a commitment to plantations is that the land may bear a higher opportunity cost in terms of alternative possibilities for crops. The payment is less for managed forests than for protected forest because the managed forest can be selectively harvested. In land designated as managed forest, up to 40% of trees larger than 60 cm in diameter can be removed. The incentive payments are believed to be competitive with earnings from beef cattle production but not with many other agricultural activities including dairy farming. A notable feature of the eligibility rules for the Private Forestry Law is that landowners may only receive credit for plantation establishment on land that was not forested in 1992, in

order to avoid rewarding landowners who cleared primary forest in the recent past. Remote sensing information on land cover in Costa Rica in 1992 is available to check earlier land use on applicants' land (Tattenbach 1998).

An important advantage of the program for producing and selling carbon offsets, in Costa Rica's view, is that emissions reduction projects move away from a host - sponsor relationship to one where carbon is certified and traded as a commodity. The development of CTO sales, which in theory could be traded on an international market, resembles an emissions trading scheme. Proposals for international emissions trading have been opposed by some developing countries that are doubtful that they would have the opportunity to sell emissions permits at any reasonable price. These views are not shared by Costa Rican environmental leadership, who devised the CTO scheme with a minimum selling price of \$10/t/c and believe that the approach of selling CTOs puts the selling country "in the driver's seat," by giving the selling country control over planning and implementation (Tattenbach 1998).

Table 2 Origin of Norway's US \$2.0 Mil. Carbon Offset Purchase

Forest Area	72,000 ha
% in plantations	7%
% in protection	83%
% in management	10%
Ex-poste credits year	1997
Number of participants	400 landowners
Carbon Offsets	231 kT carbon
Ave. Annual Uptake	~ 3 t/c/ha

Literature Cited

- Escofet, G. 1998. Environment chief plans big changes. *Tico Times* 4(22), June 12, San Jose.
- FUNDECOR and MINAE. 1998. The Costa Rican experience with market instruments to mitigation climate change and conserve biodiversity. Fundacion para el Desarrollo de la Cordillera Volcanica Central y Ministerio del Ambiente and Energia, San Jose, Costa Rica.
- Tattenbach, F. 1998. FUNDECOR, Moravia, Costa Rica. Personal communication.
- WRI. 1994. World Resources Report. World Resources Institute, Washington DC.