



Bundling of ecosystem services in agroforestry, Mexico

Compiled mainly by: Sasha Rodricks,
mainly based on Corbera et al 2009

Short title: PES for a bundle of ecosystem services, Mexico

Key Message: Mexico initiated a national level PES scheme to increase household income and to enhance forest management practices.

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1. What was the problem?

Mexico's deforestation rate for the period 1976–2000 has been estimated at an average of 86,718 ha/year for temperate forests and 263,570 ha/year for tropical forests (Bray and Merino-Pérez, 2002). This has been considered a consequence of the state's failure to regulate the activities of private and state-led logging companies, to tackle the underlying causes of dispossessed peasants migrating into areas of high biodiversity value, and rural communities' failure to establish sustainable forestry management plans and to arrest clandestine logging as they lacked the support from the state to do so.

About 54% of Mexico's forests are legally titled to local communities (Rico García-Amado et al. 2013) - known as ejidos - who practice agriculture and forest management on family plots or common forests. As a result, any effort to halt deforestation successfully requires involving peasant communities (Corbera and Brown 2006; Corbera et al. 2009).

2. What was done to solve it?

It was believed that newly developed institutions such as Payment for Ecosystem Services (PES) schemes could contribute positively to reinforcing community-based forest conservation and sustainable forest management. In 2003, the Mexican government established a national programme of Payments for Hydrological Services (PSAH, for its Spanish acronym) and in 2004 established a follow-up programme in the form of the "Program for the Development of Markets for the Environmental Services of Carbon Sequestration, the Derivatives of Biodiversity, and to Promote the Introduction and Improvement of Agroforestry Systems" (McAfee & Shapiro 2010) - PSA-CABSA, for its Spanish acronym.

PSA-CABSA promoted access of forest land owners to national and international environmental services markets, related to carbon capture and forest ecosystems' biodiversity. Fees were paid to encourage owners to implement actions that either maintained or improved the supply of environmental services such as climatic change

mitigation, and biodiversity preservation (Corbera et al. 2009, Kosoy et al. 2008 and SEMARNAT 2008).

PSA-CABSA was a 5-year program with three main components: carbon sequestration by forests in order to mitigate climate change, biodiversity conservation and the conversion of agriculture and pasture to agroforestry systems, specifically to shade-grown coffee plantations (Corbera et al. 2009; Alix-Garcia et al 2005). Rural communities and small private property holders could only apply to one PSA-CABSA component and should not be receiving economic support from other government forestry programs, including PSAH.

The operational rules of PSA-CABSA were developed in extensive consultation with civil society organizations, which included NGOs and rural organizations. CONAFOR (Comisión Nacional Forestal, National Forestry Commission of Mexico) - the National Forestry Commission - involved representatives of multilateral organizations, such as the World Bank, NGOs and academics, to define the criteria for the evaluation of a project's contribution to environmental conservation and poverty reduction. These criteria permitted differentiation among projects and characterized them according to their contribution to the conservation of natural resources, the establishment of forest management plans, and their ability to involve poor communities and women's groups in their implementation. For example, a higher carbon price would be paid to a project which simultaneously involved indigenous women from socially marginalized areas and contributed to the preservation of forest resources in forest protected areas (Corbera and Brown 2006). However, there appeared to be a bias against the poorest of the poor: the very highly marginalized were under-represented relative to the highly marginalized (Muñoz-Piña et al 2008).

The program generally generated a positive response from civil society, rural organizations and rural communities. As of December 2005, there had been 832 applications to PSA-CABSA, 219 of which were proposals for marketing forest carbon. However, of these 219, only 71 proposals received funding for the project design phase, each having been granted approximately US\$ 31,000 to prepare the project and submit it for evaluation to CONAFOR prior to implementation (Corbera and Brown 2006).

3. Challenges

Although PSA-CABSA has been well received by rural communities and contributed to increase household income and enhance forest management practices to a certain extent, this program also encountered a number of problems.

PSA-CABSA received its funding from The National Forestry Commission CONAFOR, World Bank, Global Environment Facility (GEF) and other multilateral agencies; however, the project design lacked appropriate mechanisms to sustain such funding efforts. Moreover, when subsidies or payments are introduced, a clear distinction must be made between producers and users to prevent inequalities. The country-wide flat fee however resulted in significant inefficiencies, since more than necessary amounts were paid to induce participation in some areas and sectors, while not enough was offered to induce participation in others (Corbera et al. 2009; The Nature Conservancy & USAID 2007). Also, the programme is said to not have had a very specific objective, and that criteria for payments distribution were therefore inconsistent (Muñoz-Piña et al 2008; Rico García-Amado pers. comm., 2013).

Another point of critique is that Mexico's PSA-CABSA considered carbon fixation by forests, biodiversity conservation and agro-forestry systems under a single broad Ecosystem Services (ES) category, without further conceptual distinction between the types of land use

activities providing such services. Confusion in what actually constitutes an ES was not uncommon (Corbera et al. 2009).

4. Update:

In 2006, the two programmes PSAH and PSA-CABSA were merged into a single policy framework known as Programme of Payments for Environmental Services (McAfee and Shapiro 2010), which in turn included several sub-programs (Esteve Corbera, pers. comm., 2013). In 2007, these programmes were incorporated in PROÁRBOL (including direct and indirect payment types (Rico García-Amado, pers. comm., 2013)), a more comprehensive CONAFOR program that includes other strategies such as reforestation, commercial plantations, certification or tourism (Rico García-Amado et al 2013).

PROÁRBOL was heftily criticized by Greenpeace Mexico, claiming that non-native tree species had been used to reforest degraded land and that many of the trees planted were in a bad condition or had not survived at all (see e.g. <http://www.greenpeace.org/mexico/es/Campanas/Bosques/Falsas-soluciones/Proarbol/> and <http://agren.blogspot.de/2009/02/critics-seek-to-fell-govt-tree-program.html>).

PROARBOL was renamed to PRONAFOR in 2013 (Programa Nacional Forestal <http://www.conafor.gob.mx/portal/index.php/tramites-y-servicios/pronafor>). Within PRONAFOR, there are 4 components: I. Forest Development, II. Commercial Plantations, III Conservation and IV Environmental Services, with PES falling under the 4th component (Rico García-Amado pers. comm., 2013).

There are now also some carbon PES private initiatives such as the Scolel te programme in Chiapas. Some of them are part of the national REDD strategy (<http://www.thereddesk.org/countries/mexico/activities>), that is still in its readiness phase (Rico García-Amado, pers. comm., 2013).

References and further literature:

Alix- Garcia, J., de Janvry, A., Sadoulet, E. and Torres, J.M. (2005): 'An Assessment of Mexico's Payment for Environmental Services Program.

Alix-Garcia, J.M., E.N. Shapiro, K.R.E. Sims (2010): Forest conservation and slippage: Evidence from Mexico's national payments for ecosystem services program. Agricultural & Applied Economics Staff Paper Series, University of Wisconsin-Madison, No. 548.

Bray, David Barton and Leticia Merino-Pérez (2002): The Rise of Community Forestry in Mexico: History, Concepts, and Lessons Learned from Twenty-Five Years of Community Timber Production. A Report in partial fulfillment of Grant No. 1010-0595. The Ford Foundation.

Corbera, E., González Soberanis, C. & Brown, K. (2009): Institutional dimensions of Payments for Ecosystem Services: An analysis of Mexico's carbon forestry programme, *Ecological Economics* 68, pp. 743-761.

- Corbera, E. & Brown, K. (2006): 'Building institutions to trade ecosystem services: Marketing forest carbon in Mexico' in *Institutional Dimensions of Global Environmental Change* Synthesis Conference, December 2006, Bali, Indonesia.
- Rico García-Amado, Luis, Manuel Ruiz Pérez and Sara Barrasa García (2013): Motivation for conservation: Assessing integrated conservation and development projects and payments for environmental services in La Sepultura Biosphere Reserve, Chiapas, Mexico. *Ecological Economics* 89: 92–100.
- Kosoy, N., Corbera, E. and Brown, K. (2008): Participation in payments for ecosystem services: Case studies from the Lacandon rainforest, Mexico, *Geoforum*, no. 39, pp. 2073-2083.
- McAfee, K. & E.N. Shapiro (2010): Payment for ecosystem services in Mexico: Nature, neoliberalism, social movements and the state. *Annals of the Association of American Geographers*, 100 (3), 579-599.
- Muñoz-Piña, C., Guevara, A., Torres, J., Braña, J. (2008): Paying for the hydrological services of Mexico's forests: analysis, negotiations and results. *Ecological Economics* 65, 725–736.
- SEMARNAT (Secretariat for the Environment, Natural Resources) (2008): 'Terrestrial Ecosystems: Conservation and Sustainable Management of Terrestrial Ecosystems and their Natural Resources. Available at: http://app1.semarnat.gob.mx/dgeia/informe_2008_ing/02_ecosistemas/cap2_6.html (last access March 2013)
- The Nature Conservancy and USAID (2007): '*Ecosystem Services in Latin America and the Caribbean: A Synthesis and Papers Presented at the Cartagena Meeting*, Colombia, February 14-16.
- PRONAFOR (2013): Programa Nacional Forestal <http://www.conafor.gob.mx/portal/index.php/tramites-y-servicios/pronafor> (last access May 2013)