

Colombia- PLAN VERDE

Green Plan: reforestation and restoration of secondary forests in critical watersheds

SUMMARY

"Green Plan: forests for peace" is a national government forestry programme that aims to increase forest cover and rehabilitate micro-watersheds. Initially there was also emphasis on conservation of high altitude watersheds but it has been reported that this component did not get implemented due to lack of funds. The current status of the programme is unclear. .

Acronyms: CARs - Regional Environmental Management Corporations (*Corporaciones Autonomas Regionales*) - decentralized bodies of the Colombian Ministry of Environment. The CARs' mandate is to implement the government's environmental policies and manage renewable natural resources in their respective regions.

MATURITY OF THE INITIATIVE

Uncertain status. Launched in 1999, for a period of 7 years (National Forestry Development Programme, 2000). Unclear whether the programme is currently ongoing.

DRIVER

The Green Plan builds on a Micro-Basin Project (1994-1999) funded by the World Bank and carried out by the CARs to support the rehabilitation of micro watersheds, through reforestation for commercial purposes, agroforestry and protection of riparian areas.

In 1999, the Ministry of Environment, together with the CARs in general, and the CAR of the Río Grande de la Magdalena (CORMAGDALENA) in particular (due to the economic importance of the river as the main waterway in the country), and the National Federation of Coffee Producers (Federacafé) created the Strategic Plan for the Restoration and Establishment of Forests in Colombia- Plan Verde. (National Forestry Development Programme, 2000)

STAKEHOLDERS

Supply

Private landowners within the sub-basins that provide drinking water, recharge of irrigation water sources and water for hydroelectricity production. In addition, areas with mangrove forests, or affected by forest fires or at high risk of flooding or prone to high erosion rates can be selected as part of the programme.

For example, in the CAR of the department of Sucre, the priority area selected was the recharge area of the Morroa Aquifer (the aquifer is the source of water supply for six municipalities and 500,000 inhabitants).

Demand

National government and *water users* (through water charges collected by the CARs and contributions from the Hydroelectric sector and National Federation of Coffee producers)

Watershed Management Contributions from Hydroelectricity producers

Among other sources, the CARs are financed by transfers from the hydroelectric sector. A 3% share of the returns from electricity sales is directed to their budget for investment in environmental protection in general and of the watershed in particular (<http://www.fao.org/docrep/006/AD392S/AD392s06.htm>). Half of the amount received (in 1994-2000 this amounted to US\$ 135 million) must be channelled to protection of watersheds where energy is generated, following the Watershed Management plans. However, it has been highlighted that a large portion of these funds is spent on administration costs and other activities not related to watershed investment. (Quintero and Estrada, 2003).

Intermediary

Government intermediaries - the CARs determine the priority areas in which to invest in their regions and identify potential beneficiaries of the programme (see payment mechanism).

Facilitators

Ministry of Environment, national research institutes (National Corporation for Forestry Research and Development (CONIF), Instituto Alexander von Humboldt and others). Financing from Inter-American Development Bank and the World Bank.

MARKET DESIGN

Service

Water quantity and quality, water flow regulation, reduction of soil erosion, wind protection, carbon storage and biodiversity recuperation and landscape restoration.

Commodity

- i) Improved Management Practices: Agroforestry *silvopastoral* systems for more sustainable livestock production.
- ii) Reforestation for commercial plantations: *protective-productive plantations* where timber can be harvested as long as there is replanting. .
- iii) Rehabilitation of degraded ecosystems: establishment of "*protective forest plantations*" mainly along reservoirs and aqueducts where only Non-Timber Forest Products (NTFP) can be extracted and assisted natural regeneration.

Payment mechanism

The CARs determine the priority areas for investment and submit proposals for funding to the Ministry of Environment. NGOs and municipalities may also submit projects, but the CARs are usually the main players.

The CARs then receive Plan Verde's funds from the government (see origins of funding below) and channel 80% of the resources to plant and maintain forests over three years; the communities in the selected areas contribute their labour and are compensated for this. CARs may top up the funding coming from the Plan Verde budget with funds from the Environmental Compensation Fund (FCA). This is a Fund, through which CARs generating higher income (from water use charges, land taxes or transfers from the electricity producers) re-distribute funds through the FCA to other less wealthy CARs.

Terms of payment

In kind: for example, the CAR of the department of Sucre provided, per hectare: 1100 (multi-purpose) tree saplings suited to the specific area, fertilizer, insecticide, fencing materials and technical assistance;
Cash: lump sum to compensate for labour inputs provided by landowners.

Participants who access the programme through the Forestry Incentive Certificates (see Funds Involved), receive financial cash payments for the establishment and maintenance of the plantations.

Funds involved

Funds originate from:

Central government:

- Agriculture and Ranching Development Fund (FINAGRO), through the emission of Forest Incentive Certificates (CIF - Certificado de Incentivo Forestal) for
 - o (i) reforestation (CIF-R): a subsidy to cover the costs of establishing and managing (for 5 years) new forest plantations, either for conservation or for commercial use and
 - o (ii) and for conservation (CIF-C) of well preserved forests, particularly in areas close to municipal water abstraction facilities. According to Blanco (2006), the CIF-Conservation was never allocated any funds from the relevant government bodies, and so the CIF-Reforestation was the main source of funds. This might have skewed investment towards reforestation projects for commercial purposes. (for further discussion on the impact of these particular incentives and investment in the protection and potential delivery of environmental services, see Blanco 2006)
- National Royalties Fund (FNR),
- National Fund for the Reconstruction of the Colombian Coffee (FOREC),
- the Colombia Plan

Regional government bodies:

- The CARs' internal income, (part of which is from water users (irrigation and hydropower) and must be invested into watershed protection activities)
- and the CAR of the Río Grande de la Magdalena (CORMAGDALENA) in particular.

User Associations:

- The National Federation of Coffee Producers (Federacafé)

External donors:

- the World Bank and the Inter-American Development Bank

ANALYSIS OF COSTS AND BENEFITS

Economic

Costs: US\$ 178 million, from 1999-2002. 75% of this amount was covered by domestic sources and only 6% by the World Bank. 97% of this amount was invested in reforestation and rehabilitation and the remaining 3.2% in Monitoring, Research and Capacity Building.

Total cost of reforestation per ha, including maintenance costs, was estimated at about US\$ 1,000.

Expected Benefits: Payments through the Green Plan for forest restoration were expected to provide several economic benefits including increased income from the production of forest goods and services and employment benefits from the creation of an estimated 39,000 permanent unskilled jobs, 665 professional jobs in forestry and agriculture, 370 professional social workers, and 1,240 agriculture and forestry technologist jobs. Rodriguez and Ponce de Leon (1999)

Actual Benefits: In the Atlantic District, the activities of the Green Plan created 1500 work posts and benefited 350 families. Long-term benefits are expected to be drawn from timber and NTFPs. (<http://www.elheraldo.com.co/revistas/gente/02-10-05/pr1.htm>). For other areas, little information is available on the extent to which these benefits materialised.

Environmental

Expected benefits are: i) regulation of water flow: increased availability in dry season and peak flow regulation (to increase the area available for agriculture and reduce losses from floods) ii) sedimentation reduction: better conditions for fisheries; iii) restoration of scenic beauty: improved conditions for tourism and leisure activities; iv) biodiversity restoration and v) increased carbon storage.

The plan aimed to establish: (i) protection forests (271,000ha), (ii) "protection-production forests" for commercial purposes (332,000ha), (iii) agroforestry systems (195,000ha) and (iv) rehabilitation of degraded ecosystems (245,000ha), including mangroves, and areas affected by mineral extraction, several soil erosion, soil salinization (National Forestry Development Programme, 2000).

It is unclear how much of these objectives were accomplished, and if the programme is still ongoing.

Some progress was made in the first years. Through the Plan Verde, CARSUCRE sponsored the reforestation of 387ha with timber and fruit trees) in the recharge area of the Morroa Aquifer, Municipality of Ovejas. (CARSUCRE 2003). The CAR of the Atlantic department has also established 2,259ha of timber plantations, NTFP trees and mangrove species.

(<http://www.elheraldo.com.co/revistas/gente/02-10-05/pr1.htm>)

Social

Social capital: users have a better understanding of the importance of watershed protection services; organizational capacities have been improved; community agroforestry has been developed or strengthened alongside the *campesinos'* sense of commitment, probably enhanced by increased property values at the project sites (Cardenas and Rodriguez, 2004).

LEGISLATION ISSUES

The payments system aims to support broader efforts to decentralise financing of the environment to local bodies, notably the CARs which collect water use fees and invest part of the money raised in watershed protection activities.



MONITORING

The Green Plan's implementation strategy highlights the need to monitor the implementation of the programme and its effects in partnership with national research institutes. However, this review has not identified any such monitoring studies.

MAIN CONSTRAINTS

MAIN POLICY LESSONS

OTHER INFORMATION

CONTACT

REFERENCES

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LINKS

Colombian Ministry of Environment: <http://www.minambiente.gov.co/>
 CORMAGDALENA: <http://www.cormagdalena.com.co/>
 CIFOR PES page, information on the development of PES initiatives in Colombia:
http://www.cifor.cgiar.org/pes/_ref/projects/north_andean.htm