



Philippines – Maasin

Maasin watershed reserve forest, Iloilo Province, Panay Island, Philippines

SUMMARY

Maasin Watershed Rehabilitation Project.

MATURITY OF THE INITIATIVE

Ongoing. Rehabilitation work has been going on for decades, always with some degree of user-provider agreement. As of 2008 this scheme was inactive.

DRIVER

Iloilo city government had great interest in preserving the main source of water for the city and the Maasin municipality wanted support to manage the watershed reserve. Degradation of the watershed is seen as the cause of increasing water scarcity and frequent floods.

In the early 1990s, management of the watershed passed into the hands of a multi-sectoral task force under the authority of the provincial and local governments. A feasibility plan was designed, in collaboration with the local NGO Kahublagan Sang Panimalay Foundation, Inc. (KSPFI) that recommended social-agroforestry as a means of adequately managing the watershed, while allowing the farmers to remain in the reserve. After several phases of reforestation and continuing degradation of the watershed, the Department of Environment and Natural Resources (DENR) created a forestry sector subproject, active between 1998 and 2003, to rehabilitate the Maasin watershed.

STAKEHOLDERS

Supply

The Tigum-Aganan river watershed was designated a reserve in 1923 to protect the water supply of the city of Iloilo. In 1923 the government purchased 7,000 hectares (corresponding to 30 per cent of the total area of the Maasin municipality). Over the years, the watershed suffered several stages of degradation through slash-and-burn farming expansion and firewood collection. Currently 30 per cent of the watershed is being farmed.

The providers are the farmers living within (or farming within) the watershed reserve, organized into the Maasin people's federation (KAPAWA).

Demand

Metro Iloilo Water District (MIWD), a semi-private water utility, is responsible for water supply to Iloilo city, Maasin and three other towns; plus 2,900 hectares of irrigation. Currently only 35 per cent of the household water requirements of Iloilo City are met by the Maasin watershed, with the remaining water requirements sourced from Guimaras Island and nearby districts (Jabatan, 2004).

Intermediary

KSPFI and the Tigum-Aganan watershed management council.

Facilitator

Iloilo watershed management council, DENR and other government bodies; funding has also been provided by the Japanese Overseas Economic Cooperation Fund (OECF).



MARKET DESIGN

Service

Flow regulation (due to floods in the wet season and water scarcity in the summer).

Water scarcity:

- i) Lack of rainfall (particularly serious during the El Niño year 2002-2003) has led authorities to offer incentives for rainwater harvesting and to consider cloud seeding (Iloilo News, April 2004). At the same time, farmers have been adapting to water scarcity by switching from rice production to short-term crops that do not need much water (ibid, March 2005).
- ii) In association with lack of rainfall, the growing water demand of "a bustling metropolis" has already led to water rationing, and to complaints from consumers over the lack of supply and parallel increases in water prices (Iloilo News, March 2006).

Water flow regulation

- iii) In 1995, 1996, 2002 and 2003 the Aganan River was responsible for floods submerging more than one half of Iloilo City, displacing over 100,000 inhabitants (Iloilo News, September 2003).

Commodity

Improved Management Practices through agroforestry.

Reforestation for commercial plantations (with mahogany and *gmelina*).

Rehabilitation of degraded ecosystems by allowing natural regeneration and promoting other vegetative measures

Payment Mechanism

Intermediary-based transactions (local government), and user fees.

The local governments (both from Iloilo and from Maasin) have managed to pool funds from different sources:

- i) budget allocations from within the Department of DENR and the National Economic and Development Authority, including domestic and international cooperation funds;
- ii) user-fees from MIWD and sporadic donations from civil society groups and provincial government. *Currently there are negotiations to establish a long-term user-provider agreement, being led by Iloilo watershed council and the NGO KSPFI.*

Terms of Payment

In cash, one-off: Communities organized as People's Organization Federations (KAPAWA) were paid for reforestation labour costs *and in-kind:* through a Community Based Forest Management Agreement that recognizes them as stewards of the land (for 25 years, renewable for another 25). However, this may not have been fully realised (see *Social Costs* for details).

Funds Involved

A large amount of funds were pooled from different sources, coming to a total of about US\$1.4 million (at current exchange rate US\$1=51.6PhP) broken down as follows:

- Donations from civil society groups: P0.5 million,
- Provincial government: P0.5 million,
- DENR:
 - i) National Government: P9.5millionfor rehabilitation of 1,070 hectares and P2.5 million for community organizing;



ii) Japanese Cooperation: P44.3 million for community site development activities in 2,685 hectares and P4.8 million for community organizing, and P2.6 million for monitoring and evaluation and loan of P1.9 million covering 100 hectares and P0.4 million for the establishment of 20,000 square metres of vegetative strips;

iii) Asian Development Bank: P1.8 million for Survey, Mapping and Planning; MIWD: P1million as contribution for watershed protection activities and National Economic and Development Authority: allocated P3.7million for the construction of 2,850 cubic metres of structural measures (GABION) and provided P1.4million to undertake three research studies. It has also provided P0.6million for the establishment of 53,900 square metres of vegetative erosion control measures (Arocena-Francisco, 2003). Private businesses also contributed creating "tree parks" and providing training in organic production.

ANALYSIS OF COSTS AND BENEFITS

Economic

Economic costs (see **Funds Involved**).

Environmental

Reforestation (mahogany, gmelina): 1,050 hectares

Agroforestry: 1049 hectares

Assisted natural regeneration: 300 hectares

Bamboo plantation: 249 hectares

Rattan plantation: 94 hectares

Riverbank stabilization: 330 hectares

Vegetative measures in 20,000 square metres

(from OECF loan and Government of Philippines investment)

Protective infrastructures: 85 kilometres trails; 700 metres fire lines; 77 units of nursery, lookout tower of seven units, 14 Gabion, and six units of concrete dam.

Perceptions: In 2002 (three years after the DENR-Japanese Bank for International Cooperation (JBIC) reforestation project), dry season flows were exceptionally low and that led to debate on the project's impacts. While those responsible for the DENR-JBIC reforestation project advocated that "the trees gave clean water and more water", the local NGO (KSPFI) considered that the lower flows could be a result of the planting of exotic fast growing species which were newly established and needed more water" (Salas, 2004).

Local news media appeared to support the reforestation project arguing that "a basin should have at least fifty percent of its slopes covered with vegetation to store sufficient water and replenish aquifers in the lowland" and the reduction of old growth forest to only 10 per cent of the watershed area was "the main reason why its streams overflowed during heavy rains and died in summer. In five years, it recovered its greenery" (Iloilo News, September, 2003).

Leakage: To make way for the reforestation project, farmers were relocated to other parts of the watershed. There they caused heavy silting, part of which affected the water utility company's reservoir and resulting in high additional expenses for the company.

Social

Increased institutional capacity.

New institutions were created to ensure the long-term integrated management of the watershed: i) Tigum-Aganan Watershed Management Council- an agreement between Iloilo city and eight other towns, signed in 2001; and ii) Iloilo Watershed Management Council involving 13 watersheds in the province.



Work in Maasin has led to the organization of the upland communities into a People's Organization Federation (KAPAWA), facilitating access to capacity building programmes and to assistance in establishing 17 livelihood projects. Social surveys conducted as baseline information for the rehabilitation plans have also led to a better understanding of the livelihood dynamics in the area. Tenure security was granted via the Community-Based Forest Management Agreement (CBFMA) (we could not confirm the extent to which this has actually happened as, according to Arocena-Francisco, 2003, Maasin municipality imposed too many land use restrictions, forbidding open cultivation farming and the presence of cattle, allowing only fruit trees, bananas and bamboos). This led to abandonment of the land by many of the farmers who could not see in this a high enough source of income to support them.

Social costs: in different stages of intervention in the watershed there have been serious social costs associated with unpaid land purchases, evictions and, more recently relocations of farmers to adjacent watersheds.

LEGISLATION ISSUES

According to the Republic Act 7160 of 1991, the local government is entitled to one per cent of gross revenues of the water distributed by the water district.

Existing legislation to support charging/investing in watershed services:

National Integrated Protected Area System Act (NIPAS, RA 7586) allows for the creation of Integrated Protected Area Funds with user fees (mostly from ecotourism), grants, donations, etc.

Department of Energy Act (DOE, RA 7638) and Electric Power Industry Reform Act (EPIRA, RA 9136, 2001) created three development funds for the area, hosting energy projects, one of which is named Reforestation, Watershed Management, Health and/or Environment Enhancement Fund (RWMHEEF) (see separate case profile).

Executive Order 318 (2004) on Promoting *Sustainable Forest Management* "provides for proper valuation and pricing of forestry resources and collection of fees for use of environmental services of forests and watersheds. It also provides for a plough-back mechanism that ensures service providers are properly compensated."

MONITORING

The project assigned a large proportion of the funds to infrastructure for management and monitoring of the watershed reserve (e.g. bunk house, lookout towers, trails, fire lines).

MAIN CONSTRAINTS

"Members of KAPAWA recalled how difficult it was to implement a project when most of the people were unwilling to cooperate (Jabatan, 2004).

MAIN POLICY LESSONS

Raise awareness and Willingness to Pay (WTP): Following the assessment for the rehabilitation of the Maasin watershed, the governor of the city initiated a large information, education and communication campaign in print, radio, and television to generate public awareness and support for the watershed situation; the MIWD put up boards in the City of Iloilo with the message, 'Year 2000, wala tubig sa ciudad sang Iloilo' (Year 2000, No more water for the City of Iloilo).

Supply system problems: The water district has also had serious problems in terms of its water supply system, which led to the recent takeover by the Local Water Utilities Administration (LWUA) because of slow implementation of an expansion project and poor



service to its concessionaires (Manila Times, January 2006). The Development Bank of the Philippines and Philippine National Bank have extended a term loan amounting to P984.8 million to MIWD to finance the rehabilitation, expansion and improvement of the water supply system of MIWD and also refinance its various loans with the LWUA (http://www.devbankphil.com.ph/News/news_full.php?articleid=00219).

OTHER INFORMATION

No information available.

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