



ENVIRONMENTAL SERVICE PAYMENTS FOR THE MAASIN WATERSHED

A Case Study

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Abstract

The case study draws lessons from a hundred-year history of the Maasin Watershed. The watershed is a reserved forest, 26 km downstream, declared for use by the city as source of potable water. Its history depicts the various positions of institutions, including that of the users, relative to this small watershed of 7,150ha. Through the years, the positions of providers/keepers of environmental services as well as sellers have been occupied by several institutions, namely the central government through a franchised quasi-public water corporation, a national agency, a local government unit, and the watershed direct users or the undifferentiated community living in and around the area, and directly using its resources. The roles played by these different institutions varied even as they occupied the same position in the market of environmental services. This provided an opportunity to study how and why the mechanism for environmental service payments progressed and then stagnated. Various mechanisms were experimented, their strengths and weaknesses shown.

The final lessons drawn include the need for well-informed constituents to make the mechanism effective. A socio-eco-political framework for understanding the dynamics of interaction of stakeholders from various sectors as well as from upstream and downstream communities in the watershed was drawn to help understand ESP application.

The bottomline of the exercise is to appreciate integrated watershed management as an advocacy of the Philippine Watershed Management Coalition. ESP fits properly and has been advocated by its members without using the term ESP.

1. Introduction

Maasin is a fourth class municipality in the province of Iloilo, Philippines, 30km from Iloilo City, and has a population of 30, 828 (as of 2000) with an area of 17,100ha. Iloilo is one of the four provinces of Panay Island located in the central portion of the country. One-third of the total land area of Maasin town is reserved for potable water source of Iloilo City and as irrigation water source for 3,310ha of riceland. The Maasin Watershed of 6,738.52ha was declared a reserved area in 1923 by then Gov.-Gen. Leonard Wood.²

In 1990, Kahublagan Sang Panimalay (Community Movement) Foundation volunteered to work with the Provincial Task Force for the Rehabilitation of Maasin Watershed. In 1995, *Kahublagan* was contracted by the Department of Environment and Natural Resources (DENR) to organize a people's organization (PO). One of the approaches the Non-government organization (NGO) used in organizing the community was through an organized information, education and communication (IEC) strategy. The IEC message focused on the use of natural power as the

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² Salas, J. Case Study of the Maasin Watershed: Analyzing the Role of Institutions in a Watershed-Use Conflict. RUPES Project, World Agroforestry Centre, December 2004

community's legitimate social capital and in order to sustain their source of livelihood, they should refrain from being illegal squatters or fugitives in the watershed. Community-based forest management was not feasible in reserved areas at that time and the way to convince the people was to ask them to be creative and purposive in asserting and negotiating with the government. That was part of the empowerment exercise. Short of making threats, social capital was seen as a potential tool for liberating themselves. Leaders and groups were asked to think how the community could possibly turn the tide to a win-win situation. Several strategies were thought of. One was to ask the water district or the City of Iloilo to pay them for protecting their water source. Another was to sell the water that comes out of the watershed. And yet another was to make the area a tourist destination to attract visitors. But first things first, they had to invest in their social capital and the natural asset of the place. A win-win situation will always win friends and government support, at the same time benefit the community.

The people rallied behind the belief that the "promise" was possible. The promise was that it was possible for the watershed communities to get support from the people who need water if they (communities) protect the water source. When the NGO was contracted by DENR, the promise made a different tune and it included security of tenure that was even attractive to the people in the area. Thus the associations were registered and federated.

Meantime, over a span of three to five years (1989-1995), the non-government organization - community organizing (NGO-CO) staff worked closely with the municipal government. At that time, the CO staff held weekly meetings with a point person assigned by the mayor. The purpose of the meetings was to review issues, messages, and responses of the community. The original key messages were imbibed even by the key municipal officials as a result of the weekly meetings. Acting on the possibilities of these messages, the Maasin

Municipality demanded that they be paid real estate tax and 1 per cent user's fee by the Metro Iloilo Water District (MIWD). When the MIWD declined, the municipality filed a suit and won. MIWD paid Maasin a total of PhP3,963,875.40 for real property tax from 1992 to 2004 and the 1 per cent user's fee from 1992 to 2002. During the 23 February 2005 Iloilo Watershed Management Council (IWMC) meeting, it was reported that MIWD paid a total of PhP1.87 million for tax and user's fee to four municipalities where it extracts water. Maasin alone got a share of PhP1.3 million.

2. Environmental Services and Products from the Watershed

The main environmental service of the Maasin Watershed refers to the major purposes that the government has approved for resource use.

The Main Environmental Service. The 1923 declaration of Maasin Watershed as a forest reserve and the expropriation of the land for the purpose of providing safe drinking water to be distributed to Iloilo City and the neighboring towns signaled the main environmental service expected of Maasin Watershed. The intention was to protect the area, the trees and other vegetation as well as the land of this small watershed.

The MIWD has the franchise to distribute drinking/ domestic water, and was given a permit to extract 350lps (liters per second). However, when water is computed based on the size of pipes used, water flows at 522lps. When annualized and sustained, the 350lps flow rate may reach 11,037,600m³.

In 1991, however, *Kahublagan* conducted a study of the Maasin Watershed to determine the feasibility of rehabilitating it. The study showed that 93 per cent of the area was denuded. The condition posed a grave threat to the main environmental service of the watershed. The volume of water supplied at that time was 6,490,346m³/yr, serving only 35 per cent of the city residents. It was projected

that by year 2000, if no change occurred in the vegetative cover of the area, the water supply of 5,000,000m³/yr would be way below the projected demand of 62,468,380m³/yr, thus creating a huge supply gap.

The study also revealed that the immediate cause of the problem was the denuded areas, in spite of yearly tree planting activities and reforestation programmes of the government and private citizens for over 30 years. Ten thousand people living around the area have been using the land and other resources of the watershed for their livelihood.

Other Services and Products. The Tigum River also provides water for barangay and farm wells used for drinking, other domestic purposes, and farming. These are communities along the river where it passes through — the municipalities of Maasin, Cabatuan, Sta. Barbara and Pavia.

The National Water Resource Board (NWRB) has given rights to Sta. Barbara River Federation of Irrigators Association (STARFRIA) to irrigate 2,000ha in the towns of Leganes and 1,255 in Pavia. The Federation has about 1,500 members with each farmer owning an average of 2ha. According to a study of the National Irrigation Authority (NIA), the Association should have a volume of 40,908,240m³/yr or 30 per cent of the total demand requirement for irrigation. Several other permits were given by NWRB to other water users, farmers, industries and small businesses.

The Maasin Watershed also serves the recharge of the aquifer. The hydrologists of NIA-Region VI speculated that the portion of the river below the MIWD dam recharges the ground water. At one point, they made a computation to reconcile the total stream flow of three channels and found a 40 per cent discrepancy with the stream flow above the dam. They attributed this discrepancy to the groundwater recharge.

Land, another watershed resource, is illegally used by residents around the watershed for their crops (rice, corn and vegetables) because the area has been declared as a Forest Reserve. There is no illegal logging of commercial scale in the Maasin Watershed. According to interviews in the historical transect³, farmers would just burn the logs to ashes after they cut them because they do not have equipment to haul or cut them into logs. All they wanted was that piece of land where they could plant their crops.

Bamboos, which grow abundantly in the area, are harvested by the nearby residents. Apparently, one person promoted the planting of bamboos to hide the lost trees in the watershed. The Local Government Unit (LGU) supported the idea so there would be vegetation; moreover, bamboo could be used for livelihood. Up to this day, bamboo is the major source of income of the households around the watershed, despite dwindling demand for its products.

Other minor but significant products for upland poor households are branches and small trees for firewood, herbs for local use, root crops for food during planting season and pouched lumber or logs. The farmers also use the rivers to bathe and cool their cows and carabaos. They also make small wells for their drinking water, for bathing washing, cooking. Fish, shells, and other edible plants from the stream are also gathered by farmers for their food. These activities, however, have been declared as illegal as a consequence of the declaration of Maasin Watershed as a forest reserve. A municipal ordinance in Maasin imposes a penalty of P100 to a farmer whose carabao or cow is caught inside the watershed. Incidents of women being abused or raped when they went inside the *linya* (queue) to fetch drinking water or wash clothes were reported during a focus group discussion on 29 June 2004.

³Historical transect used in the case study of Maasin Watershed employed focus group discussions

3. The Providers/Keepers of Watershed Services/Products⁴

Over a hundred years, three providers/keepers of services and products in the Maasin Watershed have been identified. These are the MIWD, the undifferentiated communities around the Maasin Watershed, and the national agency or DENR with its PO.

MIWD as ES Provider/Keeper. From 1926 up to the 1950s, the area was controlled and guarded by the Water District, a quasi-government body, often assisted by central agencies of the government to implement its role as provider/keeper. Since the Water District received its franchise and sole responsibility to manage the area, the following were the major roles it had to assume according to the various periods in the history of the Maasin Watershed.

- a. In the history of the watershed, the 1927-1940 period was called “no man’s land” because it was when the people were brought out of the watershed, with their houses and livestock, their schools and mills closed, and their farms abandoned. There was an expropriation proceeding for the value of land.
- b. MIWD, as ES keeper, constructed a fence around the watershed and established the dam, pipes, and posted guards and area supervisors in charged of protecting the forest reserve. At that time, the primary activity of the provider was to protect the forest since vegetation was good. Abandoned farms were also planted with trees.
- c. During the war, protection activity in the watershed was minimal. The place was open to all who took refuge in the forest.
- d. There was a period of economic adjustment at the end of the war and the protection of the forest reserve got out of control from the activities of local wood poachers, land tillers and cattle owners. Guarding the area and punishing the offenders became the primary activity of the Water District.
- e. When the forest reserve was faced by uncontrollable forces that threatened water supply, the national government and civil society groups attempted to reforest the area, only to gain a 10 per cent survival rate. The Water District was able to reforest 300ha, which they attributed to giving life to an already dead creek, the Tinapi-an creek.
- f. In the 1990s local government and civil society groups, took the lead for another reforestation effort. The Water District worked hand-in-hand with the governor and the civil society groups. At this time, the Municipality of Maasin required payment of real estate tax and 1 per cent user’s fee for the Maasin Watershed, to which the Water District complied.
- g. In late 1990s, the Water District actively supported the creation and operation of the IWMC and the Tigum Aganan Watershed Management Board (TAWMB), new local bodies looking into the protection of watersheds.

The Undifferentiated Communities Around the Watershed as ES Provider/Keeper. During the period of economic adjustment, which was after the war, when MIWD lost control of the situation at the Maasin Watershed, MIWD ceased to become the environmental services provider/keeper. The role of the ES provider/keeper was assumed by the groups — the community residing in and around

⁴Providers or keepers of environmental services and products are those who have influence (power) to keep nature and environment functioning to optimize use of the resource.

the area — that controlled the conditions of the Maasin Watershed. Not even the strong arms of the government, the national agency, the police and the military, needless to mention MIWD, were able to stop them from using the land and other resources inside the Maasin Watershed.

The ancestors of these people were the ES providers/keepers before the declaration of the forest reserve but their role was assumed by the government, who later transferred powers to a quasi-government organization, the Water District. Following the national declaration of the area as a forest reserve, the former forest dwellers and residents of the area, the natural ES providers, restrained from exercising their “potential powers” for a time until after the World War II, and around early 1950s. Meanwhile, descendants of the Bukidnon tribes, who are still living inside the area up to this date near the old growth forest, never left the forest reserve

DENR with its POs as ES Provider/Keeper. In 1995, DENR was able to get a loan from the Japanese Bank for International Cooperation (JBIC) in the amount of PhP60,091,015, which was used to reforest 2,604ha inside the Maasin Watershed that accounted for about 1/3 of the area. This time, MIWD took a back seat. DENR organized POs and paid them to develop the site by planting mahogany and Gmelina (1,000ha), fruit trees (1,000ha), and mixed species (bamboo, coffee, fruit trees, etc.) for another (300ha). They were asked to take care of the trees and were assured a 70 per cent share of the harvest for 25 years. In the beginning, establishing plantations was a success, yet after exhausting the money for labor, many trained leaders left the organization, saying they had to look for other jobs since they could not depend on their share of the income or produce from the plantation. Other members continued to till the land inside the watershed but outside the project area.

4. Relationships among Stakeholders in the Maasin Watershed

MIWD as ES Provider/Keeper and Seller⁵. DENR is the national agency responsible for the conservation of the country’s natural resources. The relationship of MIWD with the local administrative office of DENR in the region is one of recognition and respect of the rights and responsibilities of each other. When the forest reserve was declared for the exclusive use of the Water District, this authority was respected by DENR local offices. However, when people started getting inside the delineated area after the war, DENR intervened with reforestation projects. For over 30 years though such projects only garnered 10 per cent survival because the farmers ploughed the field where the seedlings were planted to grow their own crops. The relationship between MIWD and DENR has lately been adversarial. It started when MIWD demanded accountability for the money it donated to DENR to help rehabilitate the watershed.

The LGU, the institution directly responsible to the community and functioning within the state’s formal legal framework, respected and supported the role of the ES provider/keeper until its powers waned. The LGU then took the leadership and tried to take different options in rehabilitating the forest. At one point, the municipal government attempted to rationalize the illegal activities by entering into an agreement with the households, allowing them to till one hectare provided they plant trees into another hectare. This incentive did not work, however. The Water District, which has little effective power and authority at this point, agreed to whatever strategy other institutions would do to save the forest reserve. After community organizing, the relationship between MIWD and the LGU also became adversarial as the former likewise demanded LGU’s accountability of the its payment for the maintenance of the watershed.

The provincial LGU convened a task force to look into the problem of the watershed. MIWD became

⁵Sellers of ESP are those with statutory rights and legal personality to exchange value of resource utilization for another value.

an active member of the task force, until it was changed into a Watershed Management Council. MIWD also became a member of TAWMB, a river basin organization where the Maasin Watershed is the head waters. To the Provincial Council, MIWD was cooperative and saw its sincere effort of protecting the watershed.

The Undifferentiated Community as Environment Product (EP)/ES Provider. After World War II, the people residing in and around the watershed usurped control over the area and consequently became ES providers because the available ES to stakeholders depended on their hands.

DENR wanted to gain control over the area, and the police and the military were employed but to no avail.

MIWD was more diplomatic in dealing with the local community. It tried moral suasion, capitalizing its own personnel and guards living in the same area and its long associations with the people over the years. The strategy was peaceful co-existence.

The LGU, considering the economic plight of the people after the war, turned a blind eye on the activities that it knew its own police power could not contain. It dealt with its own constituents with benevolent authority and consideration. The soft approach though left unaccomplished objectives for forest protection.

On the other hand, the civil society was helping government effort to reforest the area. But as the volunteers left, glad with having planted some seedlings, farmers started ploughing the field. Yet volunteers kept coming back, year after year. This was expressed in the words of Governor Arthur Defensor who announced in desperation: “We will come every year to plant and replant the forest even if it takes several years to do so.”

Over the years, the relationship of the so called “undifferentiated community” with DENR, MIWD

and LGU, was adversarial as the objectives of each group of stakeholders were seen as opposing each other. It became cooperative only when the time of strong leadership came in the province and when DENR had money to pay for the plantation establishment.

DENR and its POs as ES Providers/Keepers. The third set of ES providers/keepers were the POs and their federation, the KAPAWA. Before the users were organized, they were the adversaries of the provider/seller (MIWD) as they encroached into the reserved area. After they were organized, they became the new provider that MIWD, the seller, had to contend with. DENR contracted an NGO to organize the KAPAWA and the relationship among community leaders and the NGO, this time, was one with respect. For this reason, the farmers planted trees on their own farms to pursue the objectives of DENR’s site development. After the organizing process, DENR prevented the NGO from attending meetings of the KAPAWA in spite of the MOA KAPAWA and the NGO signed that the latter continue to assist the PO.

Instead, DENR closed ranks with the POs up to the point where their voice and rights were perceived by some members to have been emasculated. This created a faction of pro and con groups. On the other hand, the NGO continued helping PO members to have access to radio programmes, school-on-the-air, and planning at TAWMB and IWMC that gave attention to the plight of the POs.

DENR’s plan to develop the site was implemented with mixed feelings. The people liked it because they got Php44 million as payment for working in the plantation. They were, however, wary about harvesting the fruits and the food security around the watershed under the terms of the Community Based Forest Management Agreement (CBFMA), based on the agreement they signed with DENR. The former manager of the PO, KAPAWA, reported an observation in one of the workshops that farms were transferred from the ridge inside the project area to the other side of the ridge, which is the

watershed of another river or creek still inside the Maasin Watershed to avoid DENR's regulations. In fact the MIWD manager reported that they experienced the worst silt in their settling ponds since the Maasin Watershed was rehabilitated⁶.

There was also the general perception that the POs were divided into two factions, one was pro-DENR and the other, con. Those who did not agree with how the project was run left the association. Among the leaders trained during the CO phase of the project, only a few remained as leaders of the PO. This was reported during the TWG meeting of the IWMC.

5. The Main Actors: Sellers, Buyers⁷ and Brokers of Watershed Goods/Services

Sellers/Providers of environmental services in the Maasin Watershed had changed overtime, as explained in Section 3. The providers, however, could not become the sellers because of institutional arrangement. The providers have remained to be the undifferentiated and unorganized community. Part of the community was organized, including the members of the Protected Area Management Board, a body which was lately activated and has the statutory rights to sell. The sellers, however, are not effective providers because of the larger portion of the community that will not allow the DENR policy to rule their lives. They continue not to follow the rules and regulation of the PAMB. The task that remained therefore is to align the provider and the seller to make the payment for environmental services effective.

The IEC "promise" made in the early 1900s that the communities take care of the watershed because they would get benefits from the users of water turned out to be a "broken" promise. First, the benefit was substituted by labor's wages for establishing a plantation; second, they were not

happy with the outcome of the plantation in their cultivated riceland and were not confident of their food security. The feeling could have been fleeting since the fruit trees had not matured then. It is hoped that as soon as the fruit trees mature, they would be ripe for harvest and for sharing with DENR.

Another concern was the increase in silt and reduction of water supply especially during the summer months. There were speculations that the reduction of water supply was due to the increase in the number of mature trees that consume more groundwater when there is no rain. Theoretically, this was possible with more than 2,000ha planted to 2,100 trees per hectare. Townspeople complained about the Tigum River getting dry, for the first time, and water being rationed every summer during the last three years. Many became skeptical, saying they would not believe anymore that if you plant trees, you would have plenty of water. Expectations are such that the situation would be short-lived and that as the watershed gains stability there would be more water for the rivers.

Meanwhile, the federation of POs was perceived to be losing support from the community. The area is being managed by the Protected Area Management Board (PAMB) with the federation as only one of its members.

In addition to the taxes and 1 per cent user's fee it paid, MIWD gave additional fund for the upkeep of the watershed, first, to the LGU. When MIWD was not satisfied with how the money was spent, another PhP1 million was given to DENR with the same result. MIWD then stopped giving additional fund, but is now an active member of the Tigum Aganan Watershed Management Board. The Board and IWMC are now expected to look into the funds for watershed protection.

⁶Salas, J.C., 2003. A Socio-Economic Study of the Tigum Aganan Watershed Iloilo City: Kahublagan Sang Panimalay Foundation

⁷Buyers of Environmental Services/Products are those who demand and offer, and are willing to pay the cost of utilizing a natural resource for its purpose.

The experience, not guided by any logical intervention process, was long and laden with lessons on the community's "false-benefit" from wages of doing plantation work. The most significant lesson here is in giving attention to the political process. Various institutions, which have the power and authority to influence the people in the area, make separate and uncoordinated decisions to implement their well-meaning desire to make the forest reserve protected. This emphasizes the need for a multisectoral group with linkages with all levels of government. The present experience of the river-basin organization, which includes the Maasin Watershed, shows a social infrastructure that defines such structural relationship.

The principal franchised seller of the main environmental service of Maasin Watershed is the MIWD. It has a history of reorganization, as shown below:

1926 — Iloilo Metropolitan Waterworks (IMWW) and controlled by the provincial government of Iloilo for 27 years. Construction started in 1926 and completed in 1928 an 18in-diameter transmission line, from the dam to the reservoir with a carrying capacity of 11,355 m³/day.

1955 — National Waterworks and Sewerage Authority (NAWASA)/RA 1383 transferred the administration of the facility from IMWW to NAWASA; its administration lasted until 1970.

1971 — Metropolitan Waterworks and Sewerage System (MWSS) administered the operation of NAWASA from 1971 to 1978.

1978 — Simultaneous turnover of the water system from MWSS to the city government, pursuant to PD14-5, and from the city government to MIWD in accordance with the provision of PD198 on 18 September 1978.

Over the years, the water district could not service the total city population. MIWD has served only 35 per cent of the population. It could not complain whenever other businesses, like water truckers, and deep-well owners sell water to the city residents. Today, the old water pipe system casts doubt on the quality of water. The use of bottled water has then become popular. Water entrepreneurs have been sprouting in the area, tapping underground water or just the water from water district pipes.

The STARFRIA also sells irrigated water to its 1,500 farmer members. This association was organized in 1985 subsequent to the construction of NIA irrigation canals. NWRB has given rights to extract 7,450lps from Tigum river to STARFRIA. It irrigates 2,000ha in Leganes and 1,250ha in Pavia. During summer, only 40-50 per cent of its water demand can be satisfied by irrigation water.

5.1 The Water Buyers

Buyers of water from MIWD are determined by the number of service connections as shown in Table 1. There are 19,354 connections over water demand of 60,733 m³/day, but with only 38,465 m³/day capacity.

Table 1. Number of Service Connections and Water Sold by MIWD (in m³)

	Maasin	Caatuan	S.Barbara	Pavia	Iloilo City	San Miguel	Oton	Total
Local	272	888	715	997	11794 ^a	256	1458	16190
government	6	9	12	8	112	2	5	154
Commercial	17	17	24	38	2698	7	31	2832
Public faucet	0	1	7	5	161	1	3	178
Consumption	6,489	18,526	22,125	42,168	534,628	6,928	32,275	664,138

There are non-buyers who also use the water of Tigum River and share the same water body with the city residents. These other users, who are not buyers, include municipal residents who use wells near the river banks for their domestic use.

Buyers' Willingness to Pay. Based on the experience of Maasin Watershed, it was not just the willingness to pay that has been established. There were actual payments made in forms of real estate tax, users' fee, and voluntary contributions from businesses, institutions, ordinary citizens, employees, even children residing in the city. Except payments mandated by law, other forms of payments were not sustained because of the loss of trust and the unresolved question on how appropriate and relevant was the spending of funds for the rehabilitation of the Watershed.

There are other users and permit holders, including those using ground water, who have not given indication of their willingness to pay, since they have not been asked to do so. The irrigators' association, which is a member of the Tigum Aganan Watershed Management Board (TAWMB), has pledged support to activities/projects that will help protect the watershed and its source of water.

5.2 The Broker: TAWMB

TAWMB, under the auspices of the Iloilo Watershed Management Council, acts as a broker between the ES provider and the seller/ direct users,

and between the seller and the ultimate users.

TAWMB is a watershed board managing the watershed of the Tigum, Aganan, and Jaro rivers including the tributaries. It was formally established in 2000 as a multisectoral local council composed of LGUs, the private sector, local administration of national agencies, and NGOs and POs.

6. Compensation Mechanisms

Since TAWMB's creation, members have been working on the ways and means to raise funds for the upkeep of the watershed. At present, TAWMB and IWMC are getting a share of the 1 per cent users' fees and the real property tax of the reserved forest paid to the municipality of Maasin. This covers administrative expenses of the two bodies plus monitoring activities of the Barangay Information Centers (BICs)⁸. With regard to watershed projects, each municipality has included programmes and projects in its Annual Investment Development Plan.

The provincial government —, through its Task Force for the Rehabilitation of Maasin Watershed, which was later expanded to IWMC with TAWMB as the Council's specific area management board — has adopted the following mechanisms:

- a. Donations to reforest 500ha from 1992 to 1995 raised P500,000.
- b. Voluntary labor provided by students, ROTC cadets, employees of government

⁸Barangay Information Centers are information arms of the municipalities in the TAWMB and are linked to a school-on-air radio programme of the Iloilo Watershed Management Council, purposely for public journalism and transparency.

- offices and private businesses to compliment cost of buying seedlings. The local farmers helped by clearing, holing and staking the area in preparation for planting.
- c. National agency loan secured by DENR for site development or plantation establishment inside the Maasin Watershed.
 - d. Non-financial mechanisms, such as tree planting programmes encouraging investments on tree parks, seeds collection, municipal nurseries; community organizing and IEC; livelihood training and participation of individuals in watershed councils, water boards and barangay information centers.

While fund-raising mechanisms were well-defined, the mechanism to bring the benefits to providers/keepers is absent. This is left to the plans of the municipal LGU or to the DENR — whoever implements the project. Historically, this was the reason why the NGO doing the community organizing in the area (*Kahublagan*) advocated for the creation of IWMC and TAWMB to look over the whole mechanism. Eventually, *Kahublagan* looked for funds to provide technical assistance for the rationalization and creation of these local bodies. Currently, the Council and the Board are still in an experimental and negotiating stage as regards overseeing the funds intended for the upkeep of the watershed.

The problem of benefits not reaching the communities is a virtual race against time. Currently, there are reports that some farmers have started tilling the land improperly within the watershed areas, which are not within DENR's project area. There are apprehensions that the problem could escalate to a level difficult enough to control like what happened in the past.

Ongoing Negotiations for Financial Payments. The existing plans as basis for payments are being negotiated. These are the following:

- a. Negotiation between the irrigators' association and the Board. The association is waiting for the new watershed management plan (WMP); they will then choose which project to fund.
- b. Negotiation between the Sand and Gravel Operators' Association and the TAWMB. The association also awaits the new WMP.
- c. Member municipalities are at present reviewing the WMP for the next five years. The plan includes an action programme to identify water polluters and to establish penalties for these.
- d. Another WMP programme envisions identifying existing NWRB permit holders organizing, and making them share the responsibility of watershed protection.
- e. A resolution passed by TAWMB in its recent meeting is meant to establish measures to control quality and quantity of drinking water from small industries engaged in selling bottled water.
- f. An IWMC resolution passed rules audit payments made on natural resources and collection of those not remitted.

7. Lessons Learned, Opportunities and Challenges

The preceding historical account of the Maasin Watershed provides a wealth of experience in the general context of watershed management. The prolonged negotiations for compensation from users of watershed goods and services, with their twists and turns, also present lessons in the emerging arena of markets or payments for environmental services. The general lessons, challenges and opportunities are summarized in the points enumerated below.

- a. The first lesson is to attain a critical mass of well-informed and educated users. This is a prerequisite to the participatory nature of a social infrastructure, a prerequisite to

- democratic process. An intelligent user surely has a different institutional culture from one who is not.
- b. Understand the characteristics of and dynamics inside the watershed (**Figure 1**). Each water user should be able to claim rights and accept responsibilities.
- c. Appreciate the integrated watershed approach, Manage the whole river basin, not to just specific sub-watersheds, focusing only on its services since water concerns cross even watersheds. There are common resources or ecosystem shared by watersheds; e.g. groundwater, aquifer, forest, and coastal resources.
- d. Using the social infrastructure in managing the watershed means creating multisector, multilevel, multistakeholders, multidisciplinary bodies to enhance transparency and strengthen responsibility. In social infrastructure management, there are independent bodies that act and communicate in venues at different levels with an overarching responsible body. Its environment is provided by broad policies.

Table 2. Tools for Using the Socio-eco-political Dimensions

Dimension	Means of knowing	Application of tools at Maasin Watershed*
Social	o Education to strengthen social capital	5
	o Participation to strengthen empowerment	3
	o Formal venues available to communities for them to negotiate and claim rights	5
	o Manageable units and groups for the grassroots (multilevel structure)	5
Economic a. buying of ES/EP b. investing in ES/EP c. Contribution in cash or kind	o Organization of ES providers/keepers	3
	o Basis to pay	5
	o Agreement to pay	5
	o Presence of a broker who links the providers/keepers with the buyers	4
	o Local venue/platforms for information dissemination and discussion	4
	o Transparency of information	3
Political	o Service provider for information/knowledge generation and dissemination	5
	o Educated providers/keepers	4
	o Clear statement of objective at all levels of the political bureaucracy and the LGU ñ equitable access to the resource	1
	o Clear indicators for reaching the objective	1
	o Means of checking and measuring indicators.	1
	o Study of current or new mechanisms for equitable sharing of resources	1
	o Mechanism for accountability	

Extent of application of tools is scaled from 1 to 5 — 1 is lowest; 5, highest — rated by an insider expert to be validated at the TWG of IWMC

- e. National policies should be broad enough to allow local initiatives that fit local situations.
- f. The socio-eco-political dynamics of environmental services should be appreciated. The base of the framework is the social asset of the community, while the process is economic. Environmental services payment may take the form of (a) buying the services/ products, (b) investing in the services/ products, and (c) contributing to the availability of these services and products. The political dimension should pursue the objective of equitable access to the resource; not that it is available only to those who can pay, but that it should include a government responsibility to effect equity through existing or new mechanisms.
- especially the use of school-on-the-air with the BIC and information dissemination focused on the message “Education is Information plus Action”.

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- Future directions of the Tigum-Aganan Watershed
- As discussed earlier, the Maasin Forest Reserve is part of Tigum, Aganan and Jaro river basins. The LGU managing bodies for watersheds of the province is the IWMC and TAWB for the watersheds of Tigum, Aganan and Jaro rivers.
- With the Tigum-Aganan Watershed chosen as the pilot study of the Water Quality Management Area for the Clean Water Act, the Council and the Board will need political support to implement its plan. The WMP is being prepared, and programmes or actions for environmental service payments are already considered part and parcel of this plan.
- The issues raised on the table of TAWMB are being covered by its IEC arm, which is the *Ugat Sang Tubig* school-on-the-air radio programme supported by TAWMB and IWMC. Using a public journalism framework, transparency is promoted and accountability is given social pressure. The secret to the success of managing river-basin wide stakeholders is the education of everyone,

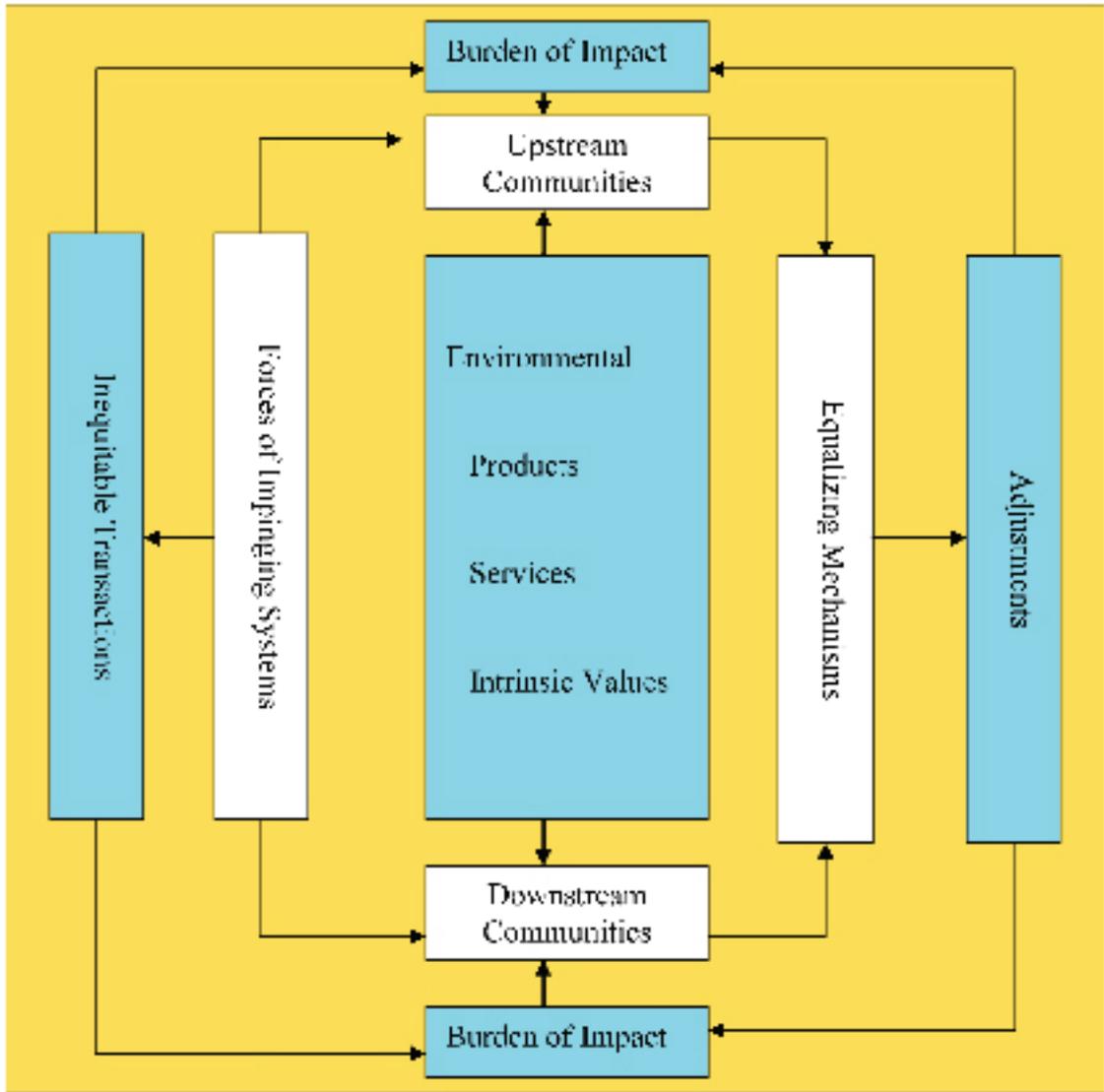


Figure 1 ES-IEC Framework⁹

⁹Adopted framework from Hydrosolidarity Project of Kahublagan Sang Panimalay Foundation, End of Project Report, 31 December 2003