

Voices of water users in Manupali watershed

In this issue, we highlight the voices and perspectives of water users on the impending water crisis in Manupali watershed, based on local ecological knowledge, public policy-makers ecological knowledge, customary laws, and legal frameworks.

Sustained economic, social, and environmental growth in Manupali watershed is highly dependent on judicious utilization of the resource base (e.g. water), effective control mechanisms, and fair sharing of benefits by all users - farmers, Local Government Unit (LGU), agri-business companies, National Irrigation Administration (NIA) and irrigators, National Power Corporation (NPC), and society in general. As demand for water in Manupali outstrips supply, a number of things are happening simultaneously: 1) rising conflict between different user-groups over who can use water and how much they can use; 2) allocation through issuance of water rights; and 3) collaboration of government and non-government agencies to develop viable interventions to manage the watershed.

Who owns the water?

Fundamental to resolving resource conflict is understanding issues of ownership. Two complementary management regimes are recognized and applied by the government to deal with ownership, allocation and use of water.

Customary rights - The Indigenous People's Rights Act (IPRA)

The 1996 Indigenous People's Rights Act (IPRA) is a law that recognizes the customary water rights of indigenous peoples (IPs) based on traditional belief systems. There are two premises that define these rights: 1) communal ownership of the resource; and 2) equitable access to the resource. These rights are rooted in the IP's concept of land – that the land, and all its endowments are given by God, so that they harness, cultivate and sustain them, but ensuring that these can be passed onto their children and their children's children. Water is a resource that cannot be owned privately. The IPs believe that the land, and everything connected to it, is held in usufruct, and they could not be deprived of its use. But while access and use of water is open to all, customary law condemns abuse. Water can be used by all, but individuals have moral obligations to protect it, ensuring that water flowing in the stream is undiminished.

Legal rights - The Water Code of the Philippines

The 1976 Water Code of the Philippines (PD 1067) provides the government control over water distribution. The Code stipulates that water can be allocated for 'domestic, municipal, irrigation, power generation, fisheries, livestock raising, industrial, and recreational and other purposes.' It emphasized that 'no person, including government instrumentalities or government-owned or controlled corporations, shall appropriate water without a water right.' The Code authorized the National Water Regulatory Board (NWRB) to grant rights, levy the appropriate fees for water rights and collect charges for water development. The Board determines who can get the right to use water and how much of it they can use. These rights belong to the user in the order in which they apply for them. In times of water shortage, those with more senior rights can use the full amount of water allocated to them, while those with junior rights must do with less or nothing. It likewise allows the transfer or lease of water rights in whole or in part to other users, as well as adoption of a pricing scheme subject to the Board's approval.

Attributing ownership of water can be difficult. However, it is clear that water should be used and managed by those who inhabit the watershed, with the government acting on their behalf, to protect and develop it, in ways that benefit society in general. This protocol has been generally accepted, but what is often the source of conflict is the way in which government allocates water rights—

questions of whom water rights are granted, and how much? remain controversial. To get around these issues is challenging, so instead of focusing on property relations in water, it is more helpful to develop mechanisms that provide some 'surety' for all stakeholders, to meet their water needs on a sustainable basis.

Supply and demand issues

The first step in developing compensation and reward mechanisms is getting the stakeholders understand cause-effect-scenarios associated with water use. Table 1 presents the multiple issues, causes and suggested interventions by key water users in the Manupali watershed.

Table 1- Identified problems, probable causes and solutions by stakeholder-groups

Stakeholders	Water used for	Main issues	Causing factors	Needed interventions
Farmers	Crop production	<ul style="list-style-type: none"> - Water shortage (seasonal rivers & creeks) - Contamination - Increasing demand - Siltation in river beds 	<ul style="list-style-type: none"> - Diversion by banana companies - Spring development for LGU's water system - Use of chemicals & pesticides - Increasing population - Decreasing tree cover 	<ul style="list-style-type: none"> - Adoption of soil & water conservation (SWC) technologies - Regulation of agricultural expansion in the buffer zone - Regulation of expansion of banana plantations
LGU	Potable water	<ul style="list-style-type: none"> - Poor water quality (turbidity) - High treatment cost - Shortage during dry season - Siltation in the source 	<ul style="list-style-type: none"> - Expansion of banana plantations - Inefficient water use during dry season - Diversion by banana companies - Population growth - Decreasing tree cover 	<ul style="list-style-type: none"> - Incentives for conservation farmers - Awareness campaign on SWC technologies - Regulation of agricultural expansion in the buffer zone - Enforcing compliance on environmental standards - Strict implementation of environmental policies (e.g. 20m riverbank allowance)
Multi-national banana corporations	Irrigating banana plantations	<ul style="list-style-type: none"> - Shortage during dry season - High maintenance cost of pipes 	<ul style="list-style-type: none"> - Increasing water demand by other users 	<ul style="list-style-type: none"> - Tree planting - Water rotation - Water recycling/re-use - SWC adoption by farmers
NIA & irrigators	Irrigating rice & annuals	<ul style="list-style-type: none"> - Shortage during dry season - Siltation in canals & reservoirs - High maintenance cost of canals & reservoirs - Chemical & pesticide contamination - Poor irrigation services - Low irrigation collection - Poor rice production 	<ul style="list-style-type: none"> - Increasing demand for domestic use - Diversion of water course by banana plantations - Overlapping water rights - Unsustainable farming practices 	<ul style="list-style-type: none"> - Construction of mini-reservoirs - Reforestation - Incentives to upland communities - Regulation of cultivation in environmentally-critical areas
NPC	Hydropower generation	<ul style="list-style-type: none"> - Declining water supply - Heavy siltation 	<ul style="list-style-type: none"> - Soil erosion - Deforestation - Intensive agricultural activities in the uplands 	<ul style="list-style-type: none"> - Watershed rehabilitation - Community development & forest extension program - Dredging the reservoir

Source: LEK-PEK Survey and FGDs, April-December 2007

Multi-national banana companies are one of the biggest water users in Manupali watershed (Table 2). The water requirement for irrigating bananas is 12,000 m³/ha/cropping. Thus, the growth of agri-business puts competitive pressure with other water users, particularly smallholders. Four multi-national companies have established plantations since 1999, and are continuously expanding in size, while three others are in the process of negotiating to establish their plantations.

The other major user is NIA, which by standard also requires 12,000 m³/ha/cropping of water to irrigate rice. To sustain the whole irrigation system with a service area of 4,395 hectares is challenging, especially when water supply drops in the dry season. Demand for water also escalates as vegetable farmers use rain verse and sprinklers to irrigate vegetables in the upper section of the watershed. This is an inefficient way of irrigating crops especially when water supply is scarce.



Table 2- Water usage by user-groups by crop/use

Users	Crop/use	Area covered (ha)	Water requirement (m ³ /ha/cropping)
Multi-national companies	banana	1,781.44	12,000
Smallholders	banana	410.70	Rainfed
	vegetables	530.95	3,000-5,000
	sugarcane	4,084.21	Rainfed
	corn	3,746.80	Rainfed
NIA	rice	820.16	12,000
	annuals	696.69	
	> banana		12,000
	> pineapples		7,000-10,000
	> corn		6,000
LGU	water system	19,773 (9 barangays)	523,705 m ³

Voices of stakeholders

Public-policy ecological knowledge

Low water quantity – seasonal rivers

'Until the late 1990s, Alanib River (a tributary to Manupali) was still in a very good condition. We had fun memories about the river. We enjoyed swimming in the deep waters while our mothers were washing clothes. Sadly, the river has now lost its aesthetic value to business, and the water has become very shallow because the flows are diverted by banana plantations. Cutting trees in the mountains also contributed to low water flows.'

~ Women in Balila ~

'I have been living along Manupali River for 30 years. I've observed that the incidence of extreme peak flows during rainy months and low flows during dry months has never been that pronounced in the past 5 years. In the 70s, the river was so deep and the current was so strong that I can hardly cross it. Today, a huge island of fertile soil in the middle of the river has formed, which I planted with different crops. Crossing the river to this 'newly acquired farm' with my carabao (draft animal) is not a problem since the water is only knee-deep.'

~ Farmer in Poblacion ~

Poor water quality – contamination

'I used to fish in the Manupali River. But today, one can hardly catch fish, since the river is already contaminated with chemicals and pesticides from farms and banana plantations. Sadly, some farmers use electric fishing rods, so the small fish die.'

~ Farmer in Cawayan ~



Public-policy ecological knowledge

Poor water quality – contamination

'The water quality in Alanib and Maгнаo Rivers is degrading with the presence of E. coli and other bacteria. This is because, some people dispose their domestic and farm wastes into the river. Many farmers are farming near the river, so when the rain comes, fertilizers are drained into the river, and worst, they also wash their chemical sprayers in the river. But recently, the number of cases reported has been reduced with the implementation of a Municipal Ordinance that prohibits the disposal of household wastes, dead animals and hazardous chemicals into the river.'

~ The Municipal Agriculturist ~

Social conflict –

'Because of shortage, conflicts on water use arise at different levels, between and among stakeholders – farmers are in conflict against each other, and against banana companies; while banana companies are against irrigators, and irrigators against politicians. This is a complex situation that can not be solved by the LGU alone, we need to collaborate and put our acts together.'

~ Vice-Mayor and SB Chair on Environment ~

'I have been receiving reports of stealing water pipes from the LGU water system and neighboring farmers when water becomes scarce in the dry season.'

~ Barangay official in Sungco ~

'We have accounted cases of family conflict because of poor rice production resulting from water shortage.'

~ Irrigation Engineer ~

Siltation – damage of irrigation canals

'Siltation problem in Manupali River has greatly affected our irrigation operation. Between 1995 to 2002, we've already spent 17 million to remove the silt deposit in the irrigation canals. To cope with water shortage, we adjusted the delivery schedule of water, and encouraged farmer to apply a cropping pattern that meets water scarcity challenges. Hence, a number of rice farmers are now shifting to annual crops, such as banana, pineapple and corn. Land conversion has become pervasive, despite the government's moratorium on converting rice into other land uses.'

~ Irrigation Staff ~

'Siltation in our reservoir is estimated at 1.5 m³/year. This constrained the inflow from tributary rivers, resulting in fluctuating levels in the reservoir. Siltation has also damaged our equipments and machineries. This is attributed to rapid soil erosion caused by deforestation and intensive agricultural activities in steep slopes. Our company has allocated more than 200 million PhP, to dredge the silt in the reservoir, but this doesn't solve the problem at all. I'm afraid that in 20 years, our reservoir will run dry given the current rate of siltation.'

~ Hydropower Engineer ~



Unregulated issuance of water permits

The unregulated issuance of water rights in the watershed is another cause of water shortage in Lantapan, resulting to water competition. We want to be involved in the process of issuing permits because settling conflicts of water users are directed to us. We suggest that the NWRB should determine the water discharge and consult us, before granting water permits to ensure that water supply is enough for the volume demanded, to avoid upstream and downstream conflicts.'

~ Vice-Mayor and SB Chair on Environment ~

Local arrangements to manage conflict regarding water rights

Water rights are the privilege granted by the government to use and further appropriate water. One of the key issues in Manupali is obtaining water rights, however the experience shows that this can be managed through local arrangements by stakeholders.

NIA and MKAVI

The NIA obtained water rights of Manupali river in 1979 for irrigation of lowland rice. However in 1999, MKAVI obtained the rights of three rivers in Lantapan which are tributaries to Manupali River. According to irrigation engineers, irrigation water has declined significantly due to the diversion of water from the tributaries. To avoid conflict, MKAVI responded by agreeing to pay an irrigation service fee to NIA – a form of settlement to compensate for the loss of water that could have otherwise been used for rice production. The company is currently paying an irrigation fee equivalent to a total of 150 hectares of rice irrigation.

Dole and Hilltop farmers

In 2001, Dole-Skyland, another banana company applied for the water rights of one of the river tributaries of Manupali (Maagnao River), but was denied due to the overlapping rights of MKAVI and Hilltop Lantapan Farmers in this river. Hilltop is a farmer's cooperative who obtained water rights of Maagnao River in 2000. The company however entered into agreement with Hilltop on condition that Dole provides financial assistance to the group's projects in exchange of tapping irrigation water from their source to the Dole plantation. However, the company has recently seized to pump water from the said source due to insufficient water. Their operation is now dependent on water impoundments and rainfall.

HIVAC and Basac farmers

The Celebrate Life, Inc. banana plantation negotiated with the Protected Area Management Board (PAMB) of Mt. Kitanglad to secure water rights for Kibuda spring in Kibangay, using the NIPAS and IPRA laws as basis. The company has an agreement with the Community-Based Forestry Management-People's Organization to tap water from the spring. In return, the company has to fund a community conservation project covering 5,000 hectares in the area, and support livelihood projects.

Table 3- Water permit grantees in Lantapan

WP No.	Water Right Holder	Water Source	Purpose	Granted (LPS)	Approved
3390	VGL Industries, Inc.	Sumaguisil Creek	Irrigation	34.00	12-22-77
4488	VGL Industries, Inc.	Alanib River	Irrigation	24.00	01-22-79
6590	NIA	Manupali River	Irrigation	5,700.00	12-14-79
7590	Bigy. Bugcaon	Deepwell	Domestic	0.64	08-22-80
11239	Elias L. Diaz	Alanib River	Irrigation	1.50	10-24-88
16879	MKAVI	Alanib River	Irrigation	57.93	02-12-99
16880	MKAVI	Maagnao River	Irrigation	57.93	07-26-99
17052	LGU-Lantapan	Hagpitan Spring	Municipal	61.77	11-24-99
17389	Hilltop Lantapan Farmers MPC	Maagnao River	Irrigation	94.30	09-25-00
17812	MKAVI	Kulasihan River	Irrigation	158.16	10-29-01
18241	Devaso Musatech	Kulasihan River	Irrigation	180.00	10-17-02

Source: National Water Regulatory Board, 2008

NIA and Antonio M. Soriano Farming Corp. (AMS)

AMS Farming Corp. is a banana plantation located in the lower section of the watershed. The company is currently paying NIA for the water that they get from irrigation canals to irrigate bananas.

Small farmers

In general, farmers are unaware of water rights and legal procedures. In Lantapan, only two educated and relatively well-off farmers have applied for water rights, after succeeding a rigorous process. The Code stipulates that small farmers who obviously do not have water permits cannot complain before NWRB. They cannot assert their rights over the use of water in cases of adverse claim, which makes them extremely vulnerable to increased water demands from more powerful users.

It is evident that water competition is high amongst water users in the Manupali community, but somehow, stakeholders have come to terms to avoid hostile confrontations, by coming up with voluntary agreements, even so, these are only transitory solutions, and will not solve the problems of declining water quantity and quality. What remains crucial is developing mechanisms that ensure co-investments in managing the watershed, with benefits fairly shared by all stakeholders.

What's next?

We will feature the Modeller's ecological knowledge on the water balance of the Manupali watershed.



For more information, please contact:

Delia C. Catacutan, PhD
 World Agroforestry Centre (ICRAF)
 Avocado Road, Casisang
 8700 Malaybalay City
 Philippines
 Email: d.catacutan@cgiar.org
 Mobile: +63 9177182480

