



When Sacred Water Becomes an Economic Good: Tensions and Governance Challenges in Mount Banahaw, Philippines



ABSTRACT

Mount Banahaw, an active volcano and a watershed in the municipality of Dolores, Quezon province, Philippines, is also a considered a sacred place. This study discussed the community outcomes arising from the conceptual dichotomy of perceptions of multi-use of water by formal organizations such as water districts for domestic use and by informal organizations such as the religious groups for the sacred or religious use of water from the sacred mountain; and the negotiations among these different actors and agents for water access. Results distilled lessons around the interlocking themes of water use and institutions in the access and allocation of water resources as water transits from non-consumptive use to use value. Polycentric water governance is necessary in the context of Mount Banahaw's cultural, social and economic realities.

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INTRODUCTION

The debate on the theoretical conceptions of water-whether water is a free resource, a common property or an economic good has been dealt with sufficiently in the literature (Batten 2007, Briscoe 1996; Hermans *et al.* 2006; Rogers *et al.* 1998, Rogers *et al.* 2002; Savenije and van der Zaag 2002; Schlager and Lopez-Gunn 2006; Hanemann 2006). Hanemann (2006) observed that this true value of water is seen differently at different times. For instance, he cited the view of Saint Thomas Aquinas who said that the true value of an item is determined by its inner goodness, an intrinsic quality of the item stemming from its relation to the divine purpose. Other 14th century scholars also echoed the view that the “intrinsic value of an item arise from its inherent usefulness and ability to please man according to the rules of reason” (Hanemann 2006).

In recent times, however, different societal views have further emerged. The concept of water is “waters” from a more normative perspective, as it is composed of multiple ‘needs’ and ‘wants’. Needs are uses differentiated into direct human needs, spiritual needs, environmental needs and community needs, while wants are economic demands (Feitelson 2012).

The core of any economic analysis of a natural resource system such as water is the actual valuation of the resources, services and attributes of the system (Barbier *et al.* 1997). The concept of “water as an economic good” suggests that water has both a value and a cost. Empirical works proved that the recognition of direct use value estimates can aid decision makers in actions that provide the greatest benefit to society as a whole (Loomis 2006).

A review of cases around the world led to the conclusion that water is already viewed as an economic good in many countries. However, *Briscoe (1996)* argues that there is little agreement on what this means, in theory or in practice. This triggered several efforts to explain the concept of water as an economic good to the non-economist using simple frameworks and empirical data (*Rogers et al. 2002; Briscoe 1996; Hermans et al. 2006*). Additionally, there is also a need to expand the scope of existing water valuation methods beyond economic values to include social and environmental values (*Hermans et al. 2006*). These authors demonstrated that water valuation can be stakeholder-driven, reflecting values relevant to local stakeholders.

Water can have individual values as well as non-use values. Existence, bequest and philanthropic values are considered as non-use values of water (*Turner et al. 2004*). A non-use values of water can generate “feel good or warm glow”, but does not really mean actual use of water. (*Beaumont et al. 2007*).

This was revealed in the present case study where external benefactors donate huge sums of money to feel good and to ensure that water will be properly managed by the religious groups in the area for future use. Including this in the valuation equation of water is consistent with the argument forwarded by *Lazo et al. (1997)*, where paternalistic altruism and current over use of a natural resource are shown to provide appropriate motives for bequest values which should be included in the measures of environmental benefits. Non-use value is a resource’s value to those who have not used, and may never use, the resources which distinguished it from use value. Use value is the resource’s value to those who actually use the resource either directly or indirectly (*Sutherland 1985*). While there are indications of non-use value of water in this current investigation, it has not been a central feature and needs to be studied further in a more in-depth manner.

On the other hand, non-consumptive water use is when water goes back to its original source; examples are water used for recreation and electric power generation. (*Maven’s Notebook 2013*). Consumptive use of water means that water is lost and cannot be recovered. An example is water used for irrigation (*Arthur et.al. N.D.*).

Despite some professional controversies and unsettled points, empirical efforts related to valuation of water consistently show non-use values to be positive and significant (*Sutherland and Walsh 1985*). Using Tanzania, *Hermans et al. (2006)* generated a set of

indicators to come up with a mosaic of values that support water resources management by local stakeholders. This supports what *Ostrom (2010)* noted from the empirical evidence that institutional rules must be tailored to fit a specific social-ecological setting because one-size-fits-all policies are not effective.

This study contributed to the growing body of empirical evidence on the various definitions of water and its interpretation and provides a framework to assess the social/cultural value of water in Mount Banahaw, Philippines, the study area considered to be sacred. It argued that water cannot be appropriated for the exclusive use of any group of users on the basis of value alone, without impacting other users, stakeholders and the resource base. As various user groups with different perspectives on water interact, there were spaces where use and non-consumptive use values inevitably come in obvious conflict. Specifically, this study described the growing scarcity of water in the area and examines the competing use of water by communities served by the more formally- organized water district, by village-organized water providers and by religious groups with exclusive water sources. A framework was developed and applied to these communities highlighting the tensions generated during transitions of notions about water--as meeting divine purpose, as a common pool resource and as an economic good.

To understand the nature of these conflicts, and the efforts at resolution through combinations of allocation systems linked to different scales of governance, this study developed an analytical framework on the iterative change in the conceptualization of water as a common pool resource held by communities that view it as a sacred resource, into a commodity allocated through pricing. The framework developed in this study is considered as the water ladder (**Figure 1**).

Analytical framework

This study illustrated the conceptual transition of water from a common pool resource towards a tradable economic good distributed through payment schemes based on direct use values as perceived by different actors (**Figure 1**). A common pool resource refers to “natural resources owned and managed collectively by a community or society rather than by individuals” (*United Nations Statistical Division 1997*). There are two attributes of common pool resources: difficult exclusion and rival resource units, which can, according to *Ostrom (2007)*, “mutate depending on technological advancements and human intervention”. In this study,

such mutation can take place while the resource remains a “common property resource” was theorized. Thus, within the commons, excludability and rivalry come in shifting shades and degrees.

A “water ladder” was used to show the conceptual continuum of value perceptions of a water commons between two extremes: as a resource with non-consumptive use values and as a commodity with value in exchange. A “punctuated stage” highlighted by the looped double arrow going through the ladder shows the fluidity and straddling movement of institutions of non-consumptive use and use values competing in decisions related to water appropriation. This punctuated stage reflects the real-world situation that *Batten (2007)* described as “dynamic, nonlinear and co-evolutionary.” There is no automatic graduation from non-consumptive use to use values. The movement is not linear, as assumed in typical development projects. As *Fenell (2011)* noted, “we are always operating, at least partially, within a commons of some sort”, and that “property, as experienced on the ground”, are according to *Ostrom (1999)*, “mixed systems of communal and individual property rights”. These rights come as bundles of access, withdrawal, control or management, exclusion and alienation (*Schlager and Ostrom 1992*) that overlap as

users and uses of the same resource such as the waters also overlap (*Bruns and Meinzen-Dick 2005*). The water ladder shows that there are spaces where non-consumptive or use values of water predominate. When non-consumptive use predominates, customary access and withdrawal rights are implicit and acknowledged. As use values become more dominant, the need for instruments and mechanisms for regulating access and withdrawal increases, and the state or dominant user groups begin to exercise control, exclusion and alienation rights.

As the water resources of Mount Banahaw straddle a widely diversified biophysical and socio-economic landscape, there are spaces where use-values and non-consumptive use inevitably come into obvious conflict with each other, as various user groups with different perspectives on water interact. This study unpacked these areas of conflict using the water ladder, to show how these led to certain institutional arrangements (*Cleaver and Franks 2005*). In the framework, the use values of water manifest in two dimensions of the water resource: use and institutions. Water use refers to the applications of the resource by its different users, while water institutions refer to the social organizations of water access, management and distribution, both formal and informal.

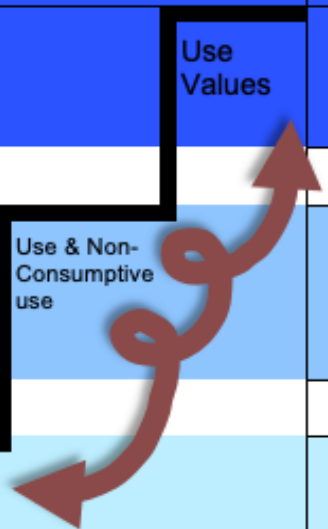
WATER VALUE		RESOURCES		GENDERED OUTCOMES
		WATER USE	WATER INSTITUTIONS	GENDER ROLES
 Use Values "Punctuated Stage" Use & Non-Consumptive use Non Consumptive Use		Household use Agriculture Commercial	Water district Formal institutions	Predominantly male
		Rituals/Religious function + Household use/ gardening	Local government unit Local water organizations	Males Females
		Rituals/Religious function	Religious and community norms	Predominantly female
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Figure 1. Water use value transformation and the punctuated stage of a water ladder.

MATERIALS AND METHODS

Secondary data were taken from Dolores Water District and the local government unit office of the Municipal Environment and Natural Resources Office (MENRO). Data gathered included location map of the watershed, watershed management programs in Mount Banahaw, water district-payment scheme, source of water for the poblacion or town proper and the villages (barangays), and the distribution scheme of water. At the village of Kinabuhayan, secondary data gathered included map of the springs, specific spring source for water distribution in the town proper, as well as sources for sacred use and domestic use, for the members of the religious groups.

In addition to secondary data, primary data gathered include perception about water and its uses, perception on the scarcity of water and its seasonality, problems encountered when water is scarce and the coping mechanisms, and the frequency of the regular meetings or spiritual gathering.

Primary data collection involved field data collection and continuous monitoring through participant-observation, open-ended interviews, and conversations with local people conducted from 2011 with four more subsequent visits/interviews in the years that followed until 2014. Six key informants, all female, were originally chosen and who belonged to the same religious organization. The senior author has a relative in the area who gave her six names of potential participants. These participants lived in the same house within the village. In that big house, the Mistica or the most popular sacred person resides. She was one of the respondents, who also directed the senior author to interview the members of the other religious groups. In the second visit in 2011, the respondents were suggested by a person who is familiar with the sacred community. The person referred to was a leader of another religious group. During the third visit, the senior author attended the occasion of religious group and did a participant observation. During the last visit in 2014, the senior author visited all the springs that were accessible and were major sources of water. There were also key informant interviews (KII) with the three village officials regarding the programs on water conservation, especially their programs of conserving the use of sacred water. During this visit, another KII was done with the religious person about the existence of a water source that is deemed to contain the holy step of Jesus. In these visits, the senior author, an anthropologist, participated in the daily routines in the study community. This participant observation process provided in-depth and non-obtrusive

data gathering regarding the challenges in accessing sacred water for daily use. Moreover, participant observation technique also provided opportunities for simple conversations with different members of the community.

The value of water to different users in Mount Banahaw was obtained by asking questions about prices paid, if any, for these different uses of water. Information on the different water uses was obtained by asking questions about applications in religious practices, household use, and livelihood activities. Governance was described through questions about norms and customs in water use, as well as village and water district policies in the use of water. Water users included individuals, households, groups and/or organizations. Open-ended interviews were conducted with local key informants such as community members, representatives of religious groups, the representative of the MENRO, and representatives of the town's water district. These are the key actors that figure prominently in the governance of the Mount Banahaw water resources.

RESULTS AND DISCUSSION

“Vulcan de Agua”: The Study Site

Mount Banahaw, also known as Vulcan de Agua, is located in the municipality of Dolores, Quezon province, Philippines. It is a watershed known for its flora and fauna. Dolores is a 4th class municipality; and according to the 2015 census, it has a population of 28,891 people (*PSA nd*). The population of this town has been increasing, though not as steep as the other average towns in the country (**Table 1**).

The mystical town of Dolores, is about 98 km. Southeast of Manila. It has 16 barangays (villages), four of which are in the Poblacion (town proper). A barangay is the smallest administrative unit in the Philippines. Mount Banahaw is also considered a sacred mountain. Globally, several places have been considered by many

Table 1. Population Census of Dolores, Quezon.

Year	Pop.	±% p.a.
1990	18,146	+1.69%
1995	20,749	+2.54%
2000	23,649	+2.84%
2007	26,312	+1.48%
2010	27,702	+1.89%
2015	28,891	+0.80%

Source: Philippine Statistics Authority, *nd*

people to be mysterious and/or miraculous. Mountains are considered “sacred” because of their divine qualities, sublime power and most closely positioned next to the heavens, the celestial bodies and the unknown. Examples of sacred mountains in the world are Mt. Fuji in Japan and Mt. Sinai in Egypt (Otto 2009). Temporal and spiritual healings are being practiced.

Pilgrims in Mount Banahaw believe that there are some similarities between these places and those that are in Jerusalem, that is why it is being called as the new Jerusalem of the Philippines. Today there are more than 70 religious sects practicing their beliefs and rituals in Dolores (www.wowquezon.com). These community members depict nuanced views about water. Mount Banahaw is perceived and experienced as a power mountain or spiritual center (Gorospe 1992), a promised land and a mystic mountain, which was believed to be Old Palestine (Pesigan 1992). Religious sects view Mount Banahaw as a “sacred mountain” whose water resources do not draw value from market exchange but rather from its existence as sacred ground.

The upstream village of Sta. Lucia is one of the five villages along Lagnas River, with major water system

flowing downstream from Kinabuhayan village including areas designated as “protected area” by the government, to Dolores town proper and further downstream to the villages of Bungoy and San Mateo (Figure 2). These five villages have seen phenomenal growth in population (117%) from 1990 to 2007. By comparison, the population of other villages grew by only 30% to 60% over the same period (Dolores Municipal Planning Office 2010).

Two of major religious sects in Sta. Lucia, Ciudad Mistica de Dios and Spiritual Filipino Catholic have taken decisive steps to supply water for domestic use to their burgeoning constituencies. Ciudad Mistica de Dios is an old sect which started in the 1950s, while the Spiritual Filipino Catholic started about 1980s. Ciudad Mistica de Dios has more members. The profiles of the leaders are contrasting: the spiritual leader of the Ciudad Mistica de Dios is an old single woman; while that of the Spiritual Filipino Catholic is a young male spiritual leader. Ciudad Mistica de Dios members are predominantly female while the Spiritual Filipino Catholic does not discriminate amongst the sexes.

Ciudad Mistica de Dios has three big water tanks supplying water to their members residing in the

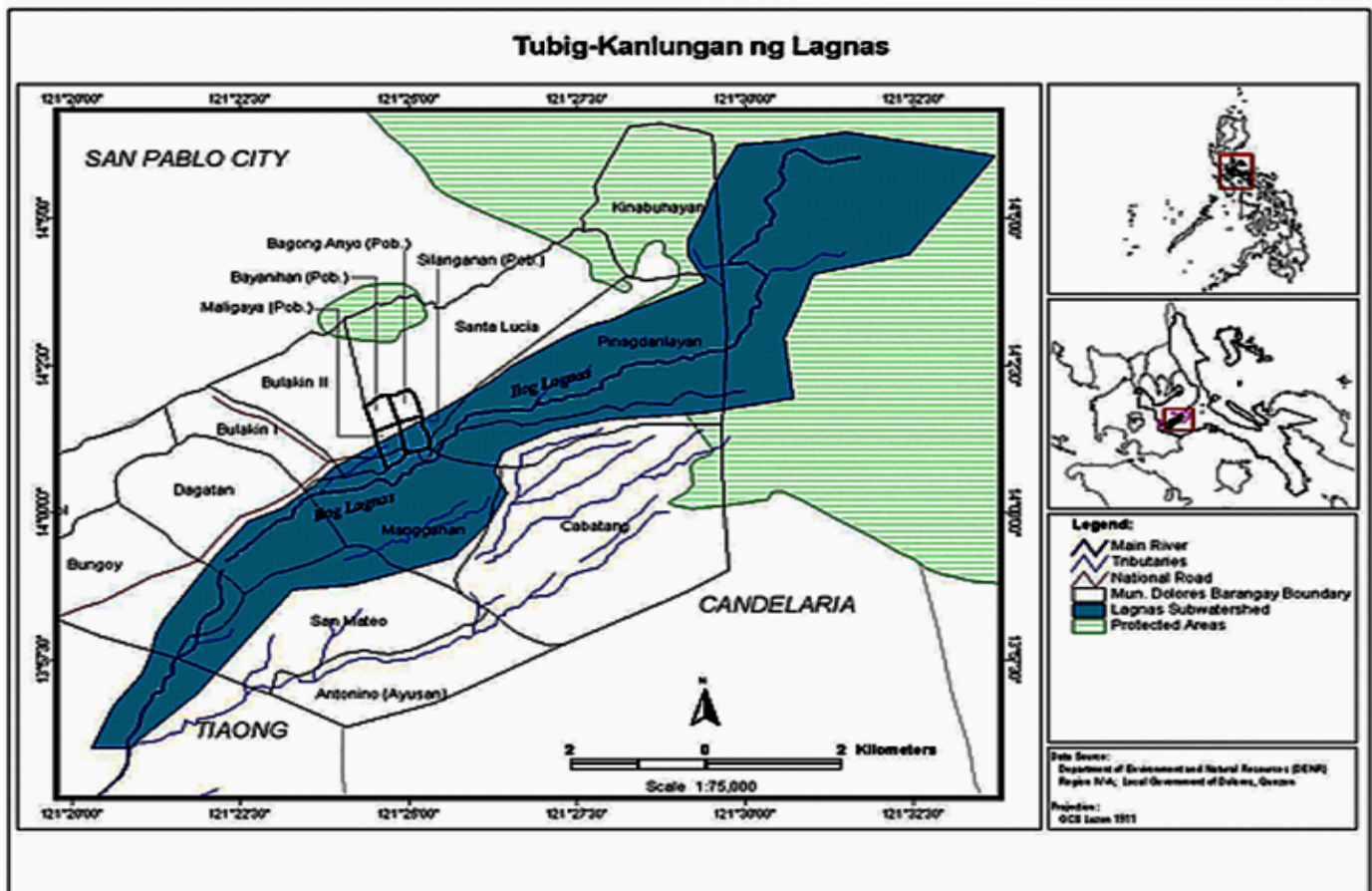


Figure 2. Map showing the location of Mt. Banahaw and the Municipality of Dolores, Quezon province, Philippines.

community. No payments were charged initially, but recently, a minimal fee was charged for maintenance. On the other hand, Spiritual Filipino Catholic gets their water from sources about 500 m from their houses. To have secured water supply, the Spiritual Filipino Catholic built a water box near their spring for water storage. Spiritual Filipino Catholic had a member who gave out a loan free of interest to build the tank. There was no help from government or any other donors. On the other hand, Ciudad Mistica de Dios had substantial funds to establish the water tanks due to donations from their members. Because of this, they are considered as water elites.

Use Value of Water

The villages located in the town proper have access to water (as a good) through the Dolores Water District (DWD), which accesses water from Mount Banahaw springs. Portraying the use-value perspective on water, DWD manages and regulates the distribution of water for domestic use and for industries downstream. Recognizing that water has become a scarce resource, DWD focused on water demand management and market-based mechanisms. DWD set a price of US\$3 (2014, \$1= PhP 44) for the first 10 m³ of water supplied and charges US 25 cents for every m³ for the next 10 m³. The water district's charges are based on standard computation set by national Local Water Utilities Administration (LWUA). Established in 1998, DWD provides piped-in water service to 8 out of the 16 villages of Dolores mostly in the downstream areas, and particularly the town proper. The current General Manager noted that from about 800 users in 2004, the number of users has grown to 1,300 as of 2014.

Settlers along Mount Banahaw's slopes drawing supply from the DWD felt that even if the community is the closest to the water resource base, the supply is threatened by: diversion of supply to downstream communities where demand is high; and pricing of water beyond the financial capability of many users. The increasing pressure on the water resources of Mount Banahaw has made it apparent that it is indeed finite and has a cost. Water supply systems were already set up by some villages, and by some religious groups prior to DWD. A reservoir at Apalihan spring, where water flows at 4 l sec⁻¹ (slowing down to 2 l sec⁻¹ during dry months), has been operated by a village since 1932. When the water district was established, it also set up collection boxes at Apalihan spring in addition to Kristalino spring, which is fed by flows from Salamin Bubog and Suplina springs upstream. The village of Kinabuhayan had an existing reservoir at Suplina spring to supply its community. These sources are also used by a religious

group Tres Personas for its religious rites and rituals. The Tres Pico spring is a source of water for another village as well as for Ciudad Mistica de Dios. The DWD set up its third reservoir at Tres Pico, enclosing the old reservoir managed by the village. Thus three systems of water governance (the water district, the village system and the religious system) coexisted in the same area over the years, with the water district serving downstream communities that have suffered water shortage, as well as households located in elevated areas upstream that cannot be served by the traditional systems. However, water supply has been far from sufficient, that the DWD has to resort to zoning of water service or rotating supply system of 4-hour ration periods. Additionally, the water district set up a 5-HP filtration system in Bulalakaw hamlet to treat surface water and make it available to its clientele.

Water districts are vested with property rights to the municipal water by virtue of a Presidential Decree. Given this legal basis, water districts have the legitimate claims over Mount Banahaw's water resources than religious groups whose custom-based access to the water resources have no legal recognition from the state. Moreover, water distribution systems set up by village that have been set up long before the water district, have been allowed to continue to operate even without water permits and within service areas of the water district. As things currently stand in Mount Banahaw, the operations of the water district overlaps with two other customary water service providers- the religious sects and the village local government units; in the three main spring sources tapped for distribution of water to their respective constituents. At the Tres Pico, Kristalino and Apalihan springs, the water district allowed the village waterworks system, and religious sects to continue to operate existing water reservoirs: to maintain good relations in the community and its major stakeholders; and due to the limited capacity of its current infrastructure to supply the potential service area in Dolores. Even then, the current setup clearly showed an overlap in claims over water resources by the water district, the religious groups and the village waterworks systems (**Figure 3**).

Non-consumptive use

The flow of water from a major water source in Kinabuhayan to the town proper illustrates nature's way of provisioning. "We are bathed, dipped and sprinkled, and the blessings flow", claims Ate Mely and other religious women, as they tell their stories of healing from the sacred waters of Mount Banahaw. The waters of Mount Banahaw are "springs, the reservoir of my existence and of my being", Ate Mely continues.

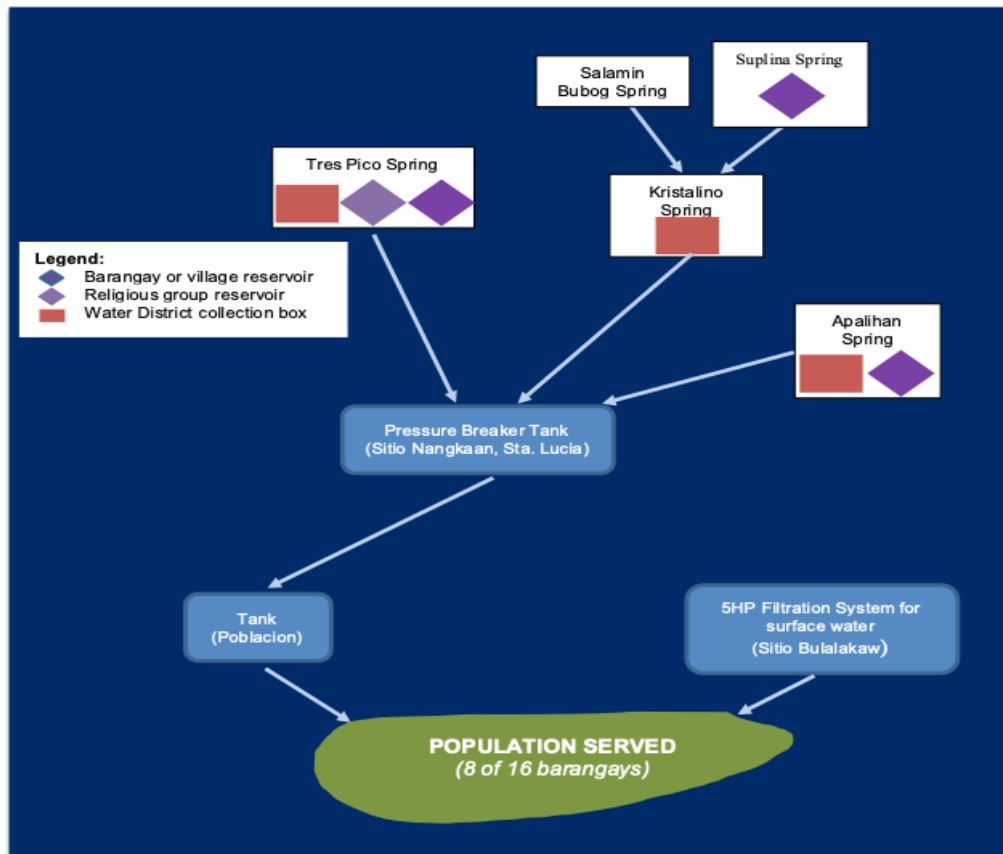


Figure 3. Reservoirs of religious groups and barangay waterworks superimposed on the water district supply system.

“I must live here to perform the ritual cleansing of my soul”. She sometimes expressed the sacred and profane, of life and sickness and of death. Religious leaders are mostly women; women figure prominently in informal water institutions.

Key to the informal governance mechanism is the non-consumptive use referring to various natural shrine commonly referred to in local language as *puesto* of the religious groups of Mount Banahaw. The *puesto* is a spring water source believed to be a medium with holy and healing powers central to their religious rituals. From more than fifty *puesto*, nine are considered most important for Mount Banahaw’s religious. The most supply-abundant and the most significant for religious practice is the Tres Pico spring. Water in this case is a free resource, exempted from access restriction and can be obtained without monetary cost. No single group or sect regulates this religious use of water. As the communities grow, each sect or group extracts and develops the water resource within its *puesto* (place) for religious and household use.

Unlike other groups, Ciudad Mistica de Dios taps directly from Tres Pico and is able to store them into three big water tanks donated by a political benefactor-member.

This political benefactor and other pilgrims donate sums for the water conservation programs in the area. This donation also makes them feel good, thus, the non-use or passive value of the sacred water can be discerned (*Lazo et al. 1997*). Other religious groups, however, are not as better placed. Their members have to walk about 2 km from other less-abundant *puesto* using only pails and small water containers. Due to water scarcity usually during the months of February to April, and especially during Holy Week, religious groups with few members have taken collective action to secure their water sources. They adopt financing and collection schemes that depart from the earlier treatment of water as a free resource. Financing comes from the collection from members and without interest, to build their tanks.

Priceless sacred waters vs price tag on “Priceless Sacred” Waters (use values)

With the growing water scarcity around Mount Banahaw villages, tensions were rising on two fronts: between Ciudad Mistica de Dios and other religious groups over the former’s exclusive access to the Tres Pico as *puesto*; and between the Sta. Lucia religious groups with their respective *puesto* and town proper residents

underserved by the Water District. At the core of the tension were two competing views about the value of water: the informal arrangements premised on the religious groups' historical claims over the *puesto*, and that sacred water from these *puestos* is a free resource for mystic and religious use; and the formal arrangements by the water district which draws from the same water resources from Mount Banahaw and treats water as a finite resource that has a cost.

Among the religious sects, water does not have a purely non-consumptive use. Although water drawn from the sacred *puesto* for religious rites is free, the use of the same water resources for domestic uses among the same religious groups comes with various fees. These fees, in most cases, cover the cost of installation and maintenance that make water available in the households. The communities involved discuss among themselves and decide the pricing scheme. These systems extend as well to the appropriation of water by some communities for agriculture. During the dry season in this area, which is about two to three months in a year, water supply is unreliable particularly in the upland villages where these religious communities are located. In the last 20 years, however, this problem appears to have worsened. The Department of Environment and Natural Resources (*DENR 2010*) cited increasing population and widespread slash and burn farming practices, which reduce water flow. The local communities, however, blame the water district and its management decisions for the water scarcity they continue to experience. In their perception, the water district has only worsened water distribution because water now has a price, and that the distribution system appears to have made water from major resources inaccessible to those outside of the distribution system, such as the upland communities.

The discussion illustrated how use values of water threaten the non-consumptive use, i.e., for religious and ritual purposes. Formal water organizations such as water districts converts water resources into private property. Payment-based schemes can also potentially make water inaccessible to some groups either through prohibitive costs, or through diversion of the limited supply to perceived priority groups by water districts. Informal water organizations by some religious sects, protect water considered to be sacred and spiritual. These organizations need to secure water supply also by charging of fees to recover installation and maintenance cost for water utilized for household and gardening by religious community members.

Tension 1.0: Between use value and non-consumptive use in the “punctuated stage”

The perceptions held by different user groups on the water resources of Mount Banahaw appear to encompass all types of goods (*Ostrom 2005*), depending on whose perspectives and whose realities are considered. Property, as experienced on the ground, is never wholly individual nor wholly held in common, but instead always represents a mix of ownership types (*Fennell 2011*). For instance, as religious groups make claims on specific sacred *puesto* for their own religious practice, the waters of the *puesto* take on the characteristics of “club goods”. Exclusion is not necessarily imposed by monetary means, but by membership in the group. On the other hand, water districts sell water for domestic use. These tensions emanate from on one hand, the long-held view of these same water resources as a public good by the indigenous settlers of Mount Banahaw when users were very few and the abundant resource appeared to be limitless, and on the other hand, as a private good subject to fee-based access via the water district or parallel formal organizations.

Within the Mount Banahaw watershed, spring water resources are fluid, transitory and interconnected. Drawing upon one spring water source naturally has consequences on the supply of other spring water sources. This very nature of the waters of Mt. Banahaw is at the heart of the tensions at the “punctuated stage”.

Governance mechanisms evolved out of these different water use norms. Religious groups through their leaders govern their water resources with reference to the sacred *puesto* and its role in their faith and religious practices. Non-religious communities, on the other hand, developed rules and devised mechanisms to regulate and enforce communal use of water resources for domestic and livelihood activities. With the establishment of the water district, the appropriation of water for domestic, livelihood and/or commercial uses across a wide range of user groups began to rely heavily on water pricing.

The interactions that took place between and among institutions surrounding water resources shape decisions and actions in the governance. In the case of Mount Banahaw, water cannot remain as open resource that was freely available to meet spiritual needs, as it is pulled in many other directions to meet needs that are increasingly economic in nature. This multiplicity of perceptions of the waters of Mt. Banahaw has led to tensions among its many users.

The increasing population and thriving community of devotees belonging to several religious groups in Mount Banahaw further gave rise to conflicts in water use. The emerging uses of water in these religious communities pit the religious sects against the burgeoning secular communities who appropriate water for other purposes.

While it is true that religious groups hold significant non-consumptive use of the waters of Mount Banahaw, these groups also hold concurrent use values for domestic livelihood activities. For instance, the religious groups are also engaged in productive activities like root crop production and vegetable gardening, and farming along the slopes of nearby Mount Cristobal for household food security.

As villages along the Lagnas River attract more settlers, it is expected that these tensions will intensify. Already, participants in the 2012 exploratory survey expressed alarm over the influx of new settlers in Mount Banahaw over the last 20 years, specifically in Sta. Lucia.

Tension 2.0: Between water elites and non-elites of Mount Banahaw in the punctuated stage

Ciudad Mistica de Dios and Spiritual Filipino Catholic are two religious groups in Sta. Lucia village with privileged positions. Their leaderships were developed because of the village-wide respect for their positions, and who demonstrated their leadership capacity to unite their respective groups in the conservation of water. Ciudad Mistica de Dios has tapped into the major water source in Mount Banahaw, the Tres Pico- which, incidentally, is also the main puesto- to supply the household needs of its increasing number of devotee-residents. Ciudad Mistica de Dios never ran out of water supply, having procured three water tanks in 1987 as donation from a former national government official. Since these tanks exclusively serve Ciudad Mistica de Dios, their members are able to comfortably do their household chores, accessing water direct from their dedicated water tanks to their faucets. By contrast, other religious groups and households relied on pails and small water containers to secure their own water supply. Some do not have proper water storage, resulting in water-related illnesses due to contamination.

During rainy season, water is more than sufficient specifically in Sitio Bangka, as declared by the Ciudad Mistica de Dios. Highly observable was the multiple uses of water in this community, which includes home gardening, agriculture, and domestic uses, in addition to its religious applications. The dry season presents a bit of a challenge for the community as they receive just enough

water from Tres Pico. During this season, participants use knapsack sprayers for watering vegetables and do their laundry in streams or shallow rivers. This was perceived as a seasonal scarcity, however, it would only appear to be a minor misfortune compared to the plight of non-Mistica members who have to walk about 2 km to fetch water from puesto other than Tres Pico.

The Ciudad Mistica de Dios's exclusive water access to Tres Pico and its members' relatively better position created tension with other religious groups as water supply from other puesto are decreasing. The three huge water tanks for storage of the Ciudad Mistica de Dios further elevated its status compared to other religious groups.

Tired of this problem, a new settler came up with a non-confrontational solution to the water woes among non-Ciudad Mistica de Dios groups. The settler gathered other co-spiritual members and presented a proposal to the thirty-five others that shared this household problem. The settler proposed a contribution of US\$136 per household for materials like cement and hollow blocks to build a water reservoir. However, the group needed to identify another puesto abundant with water. From there, members started building a cement spring box. In a few weeks, water became available to all 35 households. The water was made to flow directly to their households through hoses on a rotation basis.

However, rotational water distribution created an issue when a particular household failed to comply with the agreed schedule of one hour daily for each household to collect and save their water supply for the day. This arrangement was short-lived because it put the members at odds with each other, especially those downstream. *Van Koeppen et al. (2004)* claimed that rule setting and enforcement is the Achilles' heel of community-based water arrangements. It is morally more difficult to hold other water users, relatives and neighbors accountable to restricting water use for livelihoods, or to use the sanction of cutting water delivery to enforce agreed obligations.

In 2010, the group members agreed to the proposal of the leader to build a much bigger 19.82 m³ water box, replacing the old one destroyed by a strong typhoon. PVC pipes were used in the rehabilitated water box and cost it US\$1400, an amount already quite high for them. A member got a loan from a cooperative at the town proper to finance this. To generate funds to pay the loan, the group installed water meters and each household had to pay a US\$1 minimum for water use up to 10 m³. For maintenance and to ensure that water flows continuously,

the group assigned a person with a monthly honorarium of US\$23. This informal arrangement allowed the group to repay the loan within one year, resulting in better management of water resources. Additionally, the group acquired a Department of Health (DOH) certification for water quality to ensure that the water is clean and safe for drinking. The group agreed to pay US\$11 for each monthly analysis.

Life became convenient when water pipes were directly connected to each member household. People did not have to stay awake at night to wait for their turn to collect water. Through collective action, the religious group effectively designed an innovative water supply system that met the peoples' need and utilized available resources, without necessarily disrupting relationships with other user groups. This community-driven development approach to rural water supply also illustrated a choice made by the community to advance their interests which were more attuned to the local context (*Padawangi 2010*).

Six other religious groups copied this informal arrangement, getting water from different sources. The group clarified however, that they did not use the main sacred site to get water to avoid conflict with other dominant religious groups. The Ciudad Mistica de Dios continues to be the only group or sect which directly gets water from the sacred puesto from the major source in Tres Pico.

Community Outcome

These collective actions illustrated how alternative forms of water governance that fuses both non-consumptive use (recognizing Ciudad Mistica de Dios's exclusive claim over the puesto and finding other sacred sites to tap) and use value (recovering cost of infrastructure and water resource delivery to members) considerations were evolving among religious groups in Mount Banahaw. These trends were in line with Ostrom's polycentric governance in that spaces are created for multi-stakeholder action to safeguard the resource and secure access (*Ostrom 2010*). However, only the religious groups share similar views on the value of the waters of Mount Banahaw.

As water became increasingly commoditized, the principle behind water pricing appeared justified and necessary. However, the cost of providing water services can be expensive. An ADB paper reported that in developing countries, this can result in significant exclusion of the poor as the tariffs required to recoup

costs are often too high in relation to household income making it difficult for households to afford these services (*Chun 2013*). Observations in the case study bared, since the prices set appeared to be beyond the means of most households in the community. Thus, the basic right to safe and affordable water also informs discussions on the monetary cost of water to its various users.

CONCLUSIONS AND RECOMMENDATIONS

The study concludes that there are multiple uses of water in Mount Banahaw. These included uses provided by the resource such as irrigation water for agriculture, drinking water and domestic water supply for households, and piped water for commercial uses. Direct non-consumptive use, on the other hand, mainly consist of waters drawn from sacred puesto for religious rites and rituals performed by the various religious communities in Mount Banahaw.

Conflict issues arised because of multiple uses and stakeholder groups. The punctuated stage exists as use values for domestic use come into conflict with direct non consumptive use for religious purposes. Tapping water from major sources by the formal water district to supply the domestic and commercial needs downstream comes into conflict with the need for water resources for the maintenance of religious activities upstream.

Collective action around water issues was organized for water sourcing, impounding and distribution among members, while maintaining the resource for religious purposes. These groups organized rotational water distribution schemes, installed water meters, and pricing of water. Additionally, the Department of Health (DOH) certified water quality for testing. The Ciudad Mistica de Dios, as the dominant religious sect, set the rules regarding tapping into the sacred puesto, an arrangement which other religious sects do not contest. Various conflict resolution mechanisms were being coordinated by the relevant institutions. The evolving institutional arrangements and intergroup learning exemplified the phenomenon of polycentric governance that *Ostrom (2010)* suggested which can create spaces for mutual cooperation among stakeholder groups. However, it can also be noted that such is true only among the religious groups that shared similar views of the value of the waters of Mount Banahaw. "Paying for water", however, as in the case with the water district, can threaten or alienate others from the same water resources for agriculture, domestic uses, and possibly, for religious purposes governed by customary law and informal organizations. There appears to be, at the core of the "punctuated stage"

between the informal systems and the formal systems of governance, the disenfranchisement of traditional institutions.

How to Ease the Tension in the Punctuated Stage?

The informal modes of governance negotiated among the various religious stakeholders commits to the maintenance of rituals, while pursuing the daily household and livelihood routines of the farming community. This demonstrated that collective decision-making and action involving multi-stakeholder participation can stimulate community-based water management strategies to go around problems of free-riding and resource over-use under a common property regime.

However, community mechanisms for the appropriation of water in the form of water payments became the order of the day, as stakeholders other than the religious groups were unable to access water resources within the domain of the sacred puesto. Governed by more formal institutions, these threaten to replace the customary negotiation processes to ensure-hypothetically- the equitable access to a public good. This case study brought to the fore such problems and issues associated with this development as, among others: pricing of water for various uses to encourage conservation; fragmentation of governing institutions and mandates; and non-inclusive multi-stakeholder awareness and involvement in designing innovations in water governance.

As a final reflection, the discussion on water governance against the backdrop of Mount Banahaw's cultural, social and economic realities did not easily lend to simplification of uses and perceived values. Water practices, stakeholder interests and definitions of the realities experienced by the stakeholder groups were too diverse and complex to come up with straightforward recommendations for water governance when water becomes a traded economic good. In relation to this, there was also the need to understand the varying bundles of property rights enjoyed by the various user groups- and how these were reinforced or threatened by the different institutional arrangements- either existing or proposed. Any effort to intervene should be well-informed by a thorough study and understanding of the interaction between the values held by user groups. As the demand for the waters of Mount Banahaw extends from the traditionally religious to the thriving townships and commerce downstream and beyond, the heterogeneity of value perspectives challenges the governance of its waters.

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