

Challenges of Water Governance in the Philippines

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Using a multi-dimensional framework of governance, this paper analyzed the state of water governance in the Philippines from the legal, organizational, and operational perspectives at various governance levels. Data were taken from secondary sources and case studies done by the authors. Results showed that the many legal documents for water are a source of confusion; that water data for planning are inadequate; that there are numerous water agencies, these are not connected vertically nor horizontally; and, that these various institutions do not have sufficient human and financial resources and presence at the local level to be effective in their mandates. The authors recommend: 1) to review the legal and institutional framework for water; 2) to improve on planning and decision making mandates; and, 3) to study and implement more participatory models of water governance fitted to the Philippine context.

Key words: customary laws, participatory governance, Philippines, private-community partnership, water governance

INTRODUCTION

Development practitioners all over the world have recognized the role of water governance in addressing future water scarcity. In 2001, Kofi Anan of the United Nations and in 2002, Tadao Chino, former Asian Development Bank (ADB) President, have both declared that the water crisis is a governance crisis. An ADB report further stated that if some Asian countries will face a water crisis in the future, it will not be because of physical scarcity of water, but because of inadequate or inappropriate water governance (including management practices, institutional

arrangements, and socio-political conditions), which leave much to be desired (ADB 2007). For the Asia-Pacific region, the literature contends that water shortage will become a major constraint in the economic and social development of the region's individual countries unless equitable and efficient water allocation policies and mechanisms are developed (UNESCAP 2000).

Globally, the supply of water may not be limited as gleaned from projections data of Rosegrant et al. (2002) where only 10 percent of total renewable water shall have been withdrawn in 2025. In the Asia-Pacific region, in particular, only a small portion of the renewable water sources can be tapped, even if statistically, the per capita

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annual use of 400 cubic meters (m^3) is only 12 percent of the 3,360 m^3 per capita renewable water resources in the area (Webster & Le-Huu 2003). Focusing on the Philippines, it was noted that the annual water use accounts for only 12 percent of available supply (FAO 2002). Viewed in isolation, this figure tends to suggest that the need to manage water use and conserve water resources is not a pressing concern.

However, several facts quickly dispel this notion in the case of the Philippines (Rola & Francisco 2004). First, the per capita water availability has been declining over the years (Webster & Le-Huu 2003) brought about by increased water demand arising from economic growth and population increases and by decreased water supply associated with degradation of watersheds in the country.

Second, the data on aggregate availability are illusory in that they indicate the average supply per capita per year, without regard to the distribution of available supply. True availability is contingent on time, place, quality, and cost.

In terms of spatial differences across the country, the projections for 2025 show that in a high-economic growth scenario, the water balance, which is the difference between the amount of water resources potential and the water demand, will be negative for some regions in the Philippines due to rising water demand in Metro Manila. All Mindanao regions have positive water balances (JICA/NWRB 1998). In the low-economic growth scenario, Central Luzon region is still projected to have a negative water balance.

This same study shows that 17 of the 20 major river basins in the Philippines will experience water shortage in 2025. This is projected to happen in the high-economic growth scenario and on the assumption that there is no water resources development program. The river basins in the Luzon region will face the most serious shortages by the year 2025.

Finally, the Philippine freshwater ecosystem faces severe problems of pollution and rising costs of potable water supply. Surface water accounts for about three quarters of freshwater supply, but many of the major rivers and lakes, particularly those passing through or close to urban centers, are heavily polluted. Fifty of the major rivers are now considered biologically dead, a term used to describe places that no longer support any life form because of over pollution. While the main river systems in Metro Manila are “biologically dead”, the siltation and chemical residues pose a serious problem to major lakes, including Laguna Lake, Lake Danao, Lake Lanao, and Lake Leonard (Rola & Francisco 2004). This situation shows that ensuring potable water supplies to households will become more costly as water treatment requirements increase. The increase in population and economic activities has

considerably increased the effluents being discharged to water bodies. Domestic sewage has contributed about 52 percent of the pollution load while industries account for the remaining 48 percent (NSCB 2006). Other sources of water pollution are inefficient and improper operation of landfills or incinerators and inadequate public cooperation on the proper disposal of sewage and solid wastes. Toxic red tide outbreak in Manila Bay occurs regularly, which simply shows the extent of degradation of this resource. Relatedly, available data also point to an increasing incidence of water-borne diseases, such as typhoid and paratyphoid, diarrhea, H-fever, malaria, schistosomiasis, and cholera (Rola & Francisco 2004). In sum, therefore, the current state of water resources in the Philippines should be a cause for concern among policymakers.

Given the above, this paper surveyed the literature to understand the current water governance environment in the Philippines guided by the frameworks developed by Food and Agriculture Organization of the United Nations (FAO) (2011) and by Malayang (2004). These frameworks are discussed in Section 2. Section 3 discusses the results of the review on the state of water governance in the Philippines; while Section 4 offers ways to move forward. Section 5 contains brief conclusions and recommendations.

METHODOLOGY

Analytical Framework

Rogers & Hall (2003) define water governance as “the range of political, social, economic, and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society”.

Araral and Yu (2013) argue that this definition is problematic because practically the entire literature on water policy, economics, finance, politics, regulation, law, and management would fall under this definition. To these authors, the mechanisms to develop and manage water resources are often not well specified and thus their operational implications for research and governance reform are unclear. They provide an alternative operational definition of water governance in terms of various dimensions of water law, policies, and administration that have been commonly regarded in the literature as important determinants of performance. These include water rights, pricing, decentralization, accountability, integration, private sector participation, user group participation, and organizational basis of water management among others (Araral and Yu 2013). Furthermore, according to the same authors, water governance has largely been studied in terms of disciplinary orientations. As a result, the literature

has not evolved into a multi and inter-disciplinary agenda despite the fact that water governance should be inherently multidisciplinary in orientation.

The framework used in this study deepens the multidisciplinary of water governance as proposed by Araral and Yu (2013). It recognizes that water governance is a very complex process, because of the nestedness and interlocking set of decisions about water (Malayang 2004). Decisions about policies, laws, institutional structure, incentives, and capacity development are made by a multi-layer of decision-makers: national, regional, local, and even ethnic authorities.

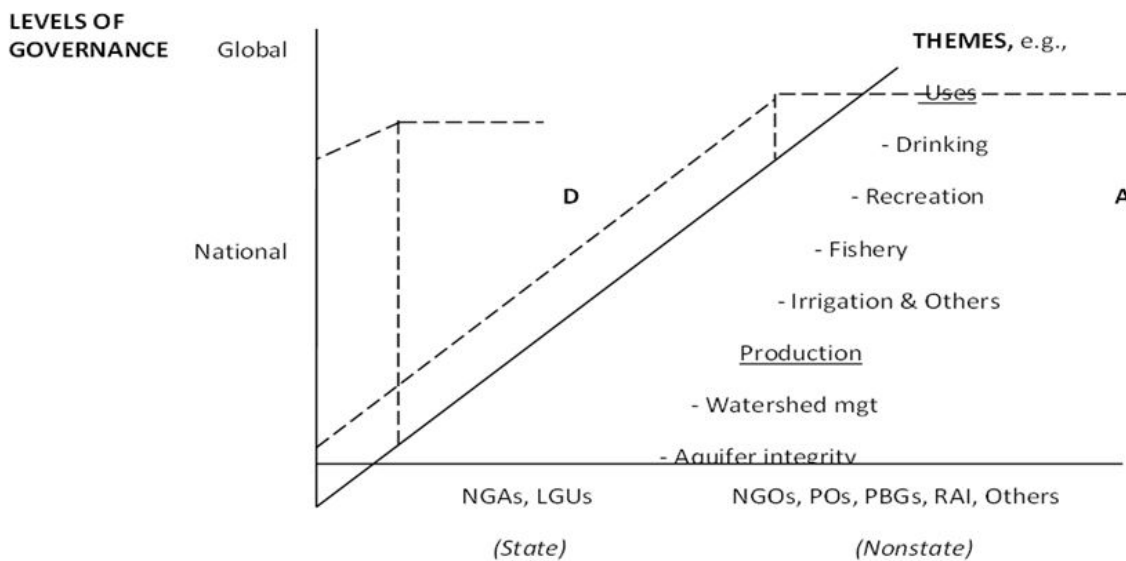
The FAO (2011) framework used in the study expressed governance according to principles and pillars. The principles of governance include accountability, effectiveness, efficiency, fairness and equity, participation, and transparency. These principles can be expressed through three pillars. Pillar 1 includes policy, legal and institutional regulatory framework. Pillar 2 relates to planning and decision making processes. Pillar 3 relates to implementation, enforcement, and compliance.

A second governance model which is a three-dimensional model is expressed by Malayang (2004). He argued that water decisions and actions in the Philippines are a product of the interplay among multiple institutions operating in different hierarchies of authority (multilevel), and from different

sectoral perspectives (multisectoral). In addition, because concerns on water may conceivably include a number of issues over its uses and features, it is multi-thematic as well (that is, it covers a range of technical, social, economic, and political concerns on water). The three-hierarchy, sectors, and themes define a “governance space”, where water decisions or actions occur, or which can be located at any given time (see Figure 1). Further, Malayang (2004) also observed that water decisions and actions are not events that occur by themselves, but are a product of complex competition and collaboration among institutions and their concerned constituencies in different hierarchies of governance. Institutions and their constituencies will either compete or collaborate to address water concerns. While collaborative mechanisms maybe instituted to accommodate the different interests over various concerns, actors will nonetheless seek to have their interests upheld eventually. Thus, water decisions and actions are actually shaped by the dynamics of institutional competition and collaboration occurring within an *area* (not a point) in the governance space (Malayang 2004).

This paper used the FAO (2011) model in the analysis of water governance in the Philippines, discussing each of the pillars from the point of view of the multi-dimensions presented in the Malayang (2004) model.

The variables under study can be classified as 1) policy, legal, and institutional dimensions of Philippine water governance; 2) planning and decision making processes;



D = an example of a decision on water pricing by a national government agency

A = an example of an action to use a water resource for fishing; done by a local nonstate

Figure 1. Three dimensions of water governance (Malayang 2004).

and, 3) implementation, enforcement, and compliance processes. These variables are studied across the governance space in terms of hierarchy, sectors, and themes.

Data Sources

Data were taken from secondary information, review of related studies and two case analyses: the Metro Iloilo Water District governance of the province of Iloilo, Philippines and the conflicts of the Mt. Banahaw water allocation in the province of Quezon also in the Philippines.

RESULTS AND DISCUSSIONS

Policy, Legal and Institutional Regulatory Frameworks

National Level

There are at least 8 legal frameworks that govern the water sector in the Philippines. These are the Presidential Decree 1067 Water Code (1976); Presidential Decree 198 Provincial Water Utilities Act (1973); Presidential Decree 522 (1974) Prescribing Sanitation Requirements for the Travelling Public; Republic Act 7586 National Integrated Protected Area System Act (1992); Republic Act 8041 National Water Crisis Act (1995); Republic Act 8371 Indigenous Peoples Rights Act (1997); Republic Act 9275 Clean Water Act (2004); and Republic Act 8435 Agriculture and Fisheries Modernization Act (AFMA). According to the study of Hall et al. (2015), the laws address several themes including: (1) legal treatment of water resources (ownership, rights and distinction between types surface or ground and sectors/uses); (2) property rights (basis, i.e. permits/license/franchise for collection and distribution; private rights granted to individual versus collective; whether rights can be leased, transferred, recalled by granting authority; right to water quality) and their enforcement; (3) legalized inter-sectoral prioritization and basis for prioritization; (4) legal linkages between land and surface water, and between land and forest/environment; (5) inter-governmental responsibility on water law; (6) integrated treatment of water law with other laws on land, forest and environment, and for water planning and development; (7) favorability to private sector and NGO participation in water planning and development; and (8) openness to market solutions (as opposed to state/government ownership or intervention).

The Water Code of the Philippines (NWRB 1976) is the over-arching law that governs water access, allocation and use. It stipulates rules on appropriation and utilization of all waters; control, conservation and protection of waters, watershed and related land resources; and, administrative and enforcement of these rules. It defines requirements

for application of water permits and conditions of its use. It also sets charges per rate of withdrawal based on the permits. During periods of drought or water scarcity, the Water Code prioritizes the use of water for domestic use, followed by irrigation, and other uses.

The laws above can sometimes be conflicting. For instance, while the Water Code stipulates that the state owns all the water in the country, the Indigenous Peoples Rights Act protects the rights of indigenous peoples with respect to resources contained in their ancestral domain. Therefore, water is not freely shared with the other community members. The National Integrated Protected Area System (NIPAS) Act provides for watershed protection so water supply can be sustained. This overlaps with the provisions of the Indigenous Peoples Rights Act.

Similarly, AFMA provides that all watersheds that are sources of water for existing and potential irrigable areas and recharge areas of major aquifers identified by the Department of Agriculture and the Department of Environment and Natural Resources shall be preserved as such at all times, which is consistent with the NIPAS Act.

Local Water Governance

The Philippines legal framework allows some dichotomy in terms of functions and jurisdiction in water resource governance. Local governance functions by the Local Government Units (LGU) include Community-based Forest Management, waterworks system and water quality monitoring. The LGUs decisions and actions are still bounded by powers at the national level. This has been a source of conflict between the national and local water governance.

Conflicts Between National Policies and Local Agreements in Provisioning Domestic Water Supply

The current institutional regulatory framework is weak in terms of clarity of purpose. For instance, the domestic water supply in Metro Iloilo (one of the city centers south of Metro Manila) is taken from a watershed that contains a smaller watershed which is a Protected Area and managed by the National Government. On the other hand, this larger watershed is managed by the locally organized Watershed Management Board. This board is composed of more than 20 representatives of government, non-government, and academic institutions. Due to its sheer size, it is quite difficult to really point out who is ultimately responsible for the stewardship of this watershed. There is therefore a need to clarify the relationship between the Protected Area Management Board of the smaller Watershed, established by an Act of the National Government, and the Watershed Management Board, established under the Local Government Code. In the meantime, this issue poses challenges for the sustainability of the water

supply in the province, manifested in the following: 1) deforestation in the upper watershed, landslides, flooding or drying up of water source especially during the summer months (non-availability of water); 2) conflicts due to the competing uses of the water; and, 3) degradation of the riverbed caused by sedimentation and quarrying which is improperly regulated.

Conflict between ICCs and local governments in domestic water supply provisioning

The current conflict for the rights to the use of water between the indigenous cultural communities (ICC) and the local governments (LGUs) representing the state is a concrete example of tensions in water governance in the Philippines (Rola 2011). As example, ICC residing near the mouth of the river and other water sources are not willing to share the water for an LGU project on rural water supply that is meant for lowland household consumption. The State enforced its stewardship of natural resources citing the provisions of the Water Code that anybody can apply for a water permit for the use of the resource beyond household needs. While the law provided public information about water permit application, mechanisms for doing this has not been instituted. Thus, in practice, an entity securing a water permit does not necessarily ask the permission of local communities who use said resource. This practice runs counter to the customary laws and other national laws. For example, as supported by the Indigenous Peoples Rights Act (IPRA) of 1997 and implemented by the National Commission on Indigenous Peoples (NCIP), any use of resources within the ancestral domain of the IP should get permission from the community following the principle of *free and prior informed consent* or FPIC (RA 8371).

Conflicts on Water Uses: Sacred Use of Water versus Other Uses

This case showed the conflicts arising from the policy of commoditization of water in the rural areas and the customary water laws. Water is used differently in the sacred area, mostly to meet spiritual needs of the locals and pilgrims.

Ciudad Mistica is one dominant religious group in this municipality of “sacred waters”. This organization has become the water elite because they control the most abundant water source in the area. The Ciudad Mistica’s exclusive water access to this source and its members’ relatively better position creates tension with other religious groups as water supply from other sources are decreasing.

On the other hand, drawing water from the major water reserves in Mt. Banahaw, in the province of Quezon,

settlers on its slopes have felt that while they are closest to the water resource base, their own supply from the water district is threatened by two phenomena: 1) diversion of supply to where demand is high, and 2) pricing of water beyond the financial capability of many traditional users. The increasing pressure on the water resources of Mt. Banahaw has made it apparent that water is finite and has a cost. It must therefore be managed for sustainable and equitable use by its many stakeholders.

The indigenous hierarchy of uses of water in this area is consistent with the Water Code of the Philippines except for one most important use in this village: water use for rituals or sacred activities by women (Table 1). The second step in the hierarchy ladder is the household use which is also predominantly done by women. Men will also use the water for gardening and other commercial-based activities. The local government and institutions are just one among the many users of the resource, according to the local people, who also say that there has to be a local initiative to clarify the water allocation in the area. According to the community members, the state rule from the Water Code needs to be modified to accommodate the local priority water use, which is for spiritual needs.

Given the above, there seems to be no “singular” water

Table 1. Hierarchy of water use in Mt. Banahaw, Philippines

Water Use	Water Users
Ritual/Sacred Use	Mostly Women
Household Use	Mostly Women
House Use and Gardening	Men and Women
Commercial/Industry	Institutions/LGUs

policy to speak of but highly localized and perhaps politically-contingent legal bases varying from one area to the other.

Planning and Decision Making Processes

National Level

To respond to the increasing demand and competing use of water, the Philippines has come up with a National Water Resources Management Master Plan based on a JICA/NWRB 1998 study. The plan has two components: a) development of water resources to meet increasing water demand; and, b) strengthening of the water institutions.

For purposes of planning, the NWRB, the regulatory arm of the Philippine government for water, has divided the country into 12 water resources regions. A water resource region divides the country by hydrological boundaries for comprehensive planning of water resources development. The Philippines has 343 principal river

basins that have at least 40 square kilometers (km²) of basin area. Of these, 20 river basins with at least 990 km² of basin area are identified as major river basins. These 20 major river basins account for 37.1 percent of the total land area of the country and 55.7 percent of the total area of the principal river basins (JICA/NWRB 1998). Politically, meanwhile, the country is divided into 18 administrative regions. These, however, are not congruent with the water resource regions. As such, there is no administrative unit that manages the water resource regions. The operationalization of planning at the water resource regions thus remains elusive, at best a plan.

Furthermore, the JICA/NWRB plan only considers the physical aspect of water. Certain socio-cultural aspects can impair the plan. Customary rules still guides water use in most places within the country as discussed below. The formal system of water management used by the government is based on a paradigm where water is priced and assigned rights to access. On the other hand, indigenous communities perceive natural resources as a communal resource and an integral part of their everyday life, culture, and traditions. Water is a central element in the varied and complex social relations of production and consumption within which conflicts between individuals and groups arise. Far from being clearly delimited and mutually exclusive, the customary and statutory are usually intertwined in complex mosaics of resource ownership systems (Cotula & Chuveau 2007).

Precisely because they are community based, customary rules are inherently unique to the locality in which they operate, they frequently entail complexities not found in formal systems that address more general principles and concerns.

Water governance in the Philippines needs to recognize both sets of rules because as customary systems are undermined, they leave a void that statutory systems are ill-equipped to fill, given the limited administrative capacity in the country. There are cases where statutory and customary systems co-exist in harmony and provide a reasonable degree of stability (Rola et al. 2015).

In reality, there are 30 public sector agencies (national and LGU-based) managing the water resources in the Philippines (Rola et al. 2012) (Table 2). Their regulatory mandates cover water quality and quantity, water resource, and water services. Institutional concerns as expected are also varied: water sanitation and quality, watershed management, integrated area development, data collection, flood management, irrigation, hydropower, water supply, research, and cloud seeding. While not all are present at every locality, the sheer number of potential actors and the assumed plurality of mandates (no mandate is deemed a priority over the others) make for serious political inertia in terms of getting the job done (Hall et al. 2015).

Table 2. Fragmented and overlapping range of functions of key Philippine water-related agencies (Rola et al. 2012).

Functional Area	GOVERNMENT AGENCIES															
	NWRB	LWUA	DENR	LGUS	DOH	NIA	NAPOCOR	PAGASA	DOF	DILG	DOE	MMDA	DOT	LLDA		
Policy Planning	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Data Monitoring	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Scientific Modeling								●								●
Infrastructure and Program Dev't	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●
Operations of Water Facilities				●	●		●	●		●					●	
Regulatory Functions	●	●	●	●		●					●		●	●		●
Financing		●	●	●						●						
Public Relations, Capdev't and IEC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Local RBO Dev't			●													

NWRB-National Water Resources Board; LWUA-Local Water Utilities Administration; DENR-Department of Environment and Natural Resources; LGUs-Local Government Units; DOH-Department of Health; NIA-National Irrigation Administration; NAPOCOR-National Power Corporation; PAGASA-Philippine Atmospheric, Geophysical and Astronomical Administration; DOF-Department of Foreign Affairs; MWSS-Manila Water-Metropolitan Waterworks and Sewerage System; DILG-Department of the Interior and Local Government; DOE-Department of Energy; MMDA-Metropolitan Manila Development Authority; DOT-Department of Tourism; LLDA-Laguna Lake Development Authority. (Source: Tabios and Villaluna 2012)

Local Level

Most national water institutions have regional counterparts, governed by national laws. Without the provincial or municipal counterparts, local water planning and decisions are not formally done. This can explain the proliferation of customary rules and local specific rules governing local or community water use.

For example, despite the existence of formal rules on the use of water resources in the country, the use of water and natural resources by the indigenous people of the rural Cordillera Region and Northern Luzon are guided by customary laws and practices. For instance, the activities of the *Zanjas* cover the construction of dams and maintaining and managing the irrigation system in order to ensure that water is adequately and regularly delivered to its members (Yabes 1992).

Nested and Interlocking Water Resource Planning at the Watershed and Local Levels

Multiple decision makers at the national, watershed, and local levels constrain the planning and decision making of the water resource. Figure 2 shows an example of the water decision dynamics in a watershed governance space. One town's water planning and decisions are influenced by decisions to protect the forest, and manage the watershed where this town belongs. These are also relevant actions for water supply sustainability. Furthermore, the town's decisions are also affected by the management decisions of the watershed cluster where it belongs. This shows a maze of peoples and institutions, sometimes with competing concerns to agree on water governance in this local area (Rola 2011).

In particular, figure 2 illustrates the various actors and institutions that had to converge to plan on the water for one municipality. The first step is to draw a municipal plan. Then the plan will have to be consistent with three other plans: that of the watershed where the town belongs; the Mountain Range Nature Park Management Plan; and the Upper Watershed Cluster Management Plan, which is part of the provincial watershed cluster. It will indeed take a lot of transactions cost to be able to really define the three other plans and to connect to the town's water plans.

Following Francisco & Salas (2004), the watershed management approach in managing the water supply is likely to work in an area when the following contributing factors are present: relevant community and the resource managers understand fully well the ecological inter-relationship within the system; with a community having high level of social capital that supports the watershed management initiatives; with adequate financial resources and capable technical expertise of resource managers; and supporting legal and institutional support to undertake those watershed management initiatives.

Implementation, Enforcement, and Compliance

National Level

The Water Code is implemented by the NWRB. The NWRB is housed at the Department of Environment and Natural Resources (DENR). The NWRB is a central agency of 120 people with PhP 50M (\$1=PhP45) budget with limited capacities for water resources management (Paragas 2012, personal communication). The lean institutional set-up constrains the agency to act on its

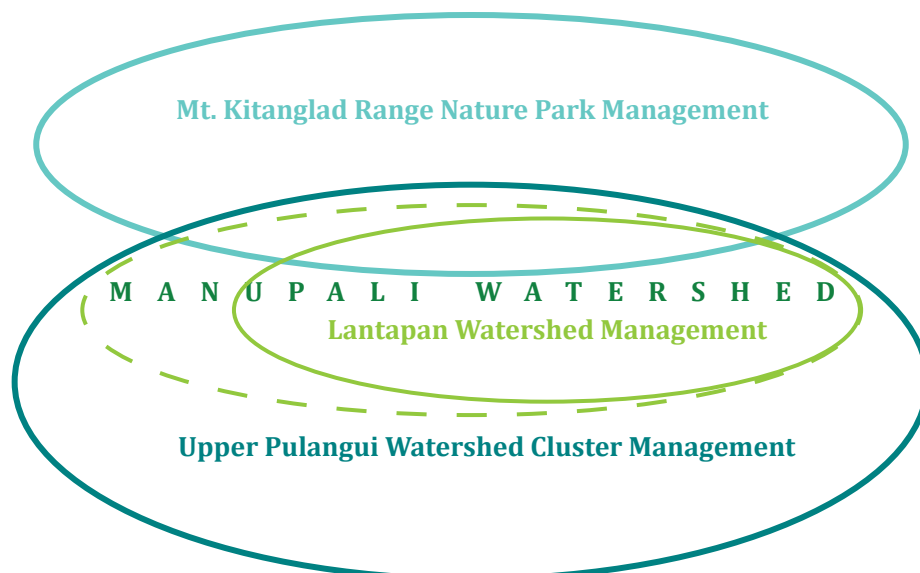


Figure 2. An example of a nested and interlocking water governance model (Rola 2011).

mandate. Building institutional and human capacity for implementing regulatory laws remains a challenge.

NWRB confers water rights. But there is a large proportion of water rights freely held by public institutions such as that for irrigation and for domestic water supply, both in Metro Manila and the areas outside this metropolitan city. Also, several other agencies perform the various mandates for water. For instance, the mandate of watershed conservation is with the Department of Environment and Natural Resources (DENR), domestic water supply is with the Local Water Utilities Administration (LWUA), irrigation water supply is with the National Irrigation Administration (NIA), and flood control management is with the Department of Public Works and Highways (DPWH). This problem of multiple institutions with overlapping mandates came about because as one agency is established, the remaining agencies were not abolished. Elazegui (2004) highlights the high cost of coordination given this set-up and the fact that some national agencies have no field presence in many localities.

Local Level

As noted by Elazegui (2004), devolving watershed management functions from water districts to LGUs could be done through a presidential proclamation or a Memorandum of Agreement (MOA) between the DENR and LGUs. Government owned and controlled corporations (GOCCs) could also be assigned to exercise jurisdiction and control over certain watersheds. They must coordinate, however, with the LGUs in the localities where their projects are to be undertaken. A MOA on project implementation could thus also be drawn up among the GOCCs and the LGU.

To implement projects, including those in small watersheds serving as source of potable water or irrigation to the community, a Memorandum of Agreement (MOA) has to be forged among national agencies concerned with the environment (DENR) and the interior and local government (DILG) and the concerned local government unit. Meanwhile, the Protected Area Management Board (PAMB), composed of the DENR, relevant LGU and NGO, and a community representative, is mainly responsible for the implementation of the National Integrated Protected Areas Act (NIPAS) at the local level. Co-management of certain watersheds supporting facilities of local water districts has also been made possible through an agreement between NWRB and LWUA (Elazegui 2004).

A Water District's Saga: Weakness in Enforcement and Compliance of Water Laws

A water district (WD) in the Philippines is a local corporate entity that operates and maintains a water supply system in one or more provincial cities or municipalities.

It is established on a local option basis and is classified as a government-owned and controlled corporation (GOCC). A WD is run by a five-man Board of Directors through a General Manager. The members of the board of Directors are appointed by the local government unit where it is located. In some instances, the WD board has conflicts with the local government units, especially in instances that the water district is not effectively governed. Administrative weaknesses will actually impede the delivery of water to the clients.

One recorded case is that of the Metro Iloilo Water District (MIWD). The MIWD, a waterworks system, has undergone several evolutions since it was established in 1926 as Iloilo Metropolitan Waterworks (IMWW) authorizing the Provincial Government of Iloilo and selected municipalities to be covered by the proposed service area. From 1928 to 1954, the IMWW was administered and controlled by the Provincial Government of Iloilo.

In 1955, the administration of the IMWW was transferred from the Provincial Government of Iloilo to the National Waterworks and Sewerage Authority (NAWASA), a public corporation existing as an independent agency. In 1971, the Iloilo waterworks system was under the administration of Metropolitan Waterworks and Sewerage System (MWSS) during the creation of the MWSS and abolition of the NAWASA, and aimed for proper operation and maintenance of waterworks system. This was also to insure an uninterrupted and adequate supply and distribution of potable water for domestic and other purposes and the proper operation and maintenance of sewerage systems.

In 1973, Presidential Decree No. 198 was promulgated, authorizing the formation of autonomous water districts and the creation of the Local Water Utilities Administration (LWUA), a government corporation aimed at providing water districts financial, technical and skill-training assistance. In accordance with the provisions of P.D. 198, in 1978 there was a simultaneous turn-over of the waterworks system from the MWSS to Iloilo City Government. Visualizing local water utilities as being locally-controlled and managed while simultaneously receiving support from the national government in the areas of technical advisory services and financing, the MIWD was established in 1978, as GOCC. As GOCC now, the Board of Directors is the policy making body of the WD.

Part of its functions is to hire the General Manager and personnel for the day to day operations of the WD. The General Manager is responsible for the supervision and control of the maintenance and operation of water district facilities. But the cessation of water supply in Iloilo City for three months in 2000, and the subsequent ongoing

shortages during the following dry seasons up to the recent times due to non-existent flow in the river near the city's off-take, has generated controversy and arguments for MIWD over who and/or what has been responsible for the water shortage and what the solution is.

On the water supply side, MIWD extracts its water supply from a river for domestic use through an intake dam with a capacity of about 30,240 cubic meters of water per day. In 2002, a decrease in the volume of water in this river and in another river was experienced resulting in shortage of potable water in its service area. Watershed degradation was blamed as one factor of this drying up of the river. In the early 1980s, on account of its critical role to the water supply of Iloilo City, MIWD assumed the responsibility of protecting the said watershed as part of the franchise agreement. Unfortunately, MIWD was not able to protect the area effectively for there were about 10,000 people maintaining farms within the reserved area by 1992. This is the weakness in the compliance of the law, that reservation area should be maintained as a natural park. This is beyond the MIWD mandate and within the mandate of another national agency. Since then, numerous watershed conservation projects and activities such as tree planting and livelihood projects were implemented in the watershed. However, these were uncoordinated and unsustainable.

In the meantime, legal issues and controversies have beset the management and employees of MIWD relative to the appointments of the Board of Directors (Lizada 2012). In the General Administration, the concerns are as follows: lack of Corporate Strategic Plans, ineffective budget process, absence of proper internal control mechanism, low morale of employees, absence of staff development program, lack of personnel reward system, mismatch of job requirements and hired personnel, non-availability of baseline information on assets, and lack of Corporate Social Responsibility Program. In light of the experiences of this WD, water decisions and actions are complex, ultimately affecting water service delivery. Thus, a need for integrated and interdisciplinary approach is seen as imperative.

CONCLUSIONS

Water is a basic human right. Yet many, especially the poor, have limited access to it even if annual available resources far exceed total withdrawals. Inappropriate water governance at various levels contributes to "artificial scarcity".

In discussing the major challenges for water governance at the national and local levels, and from national to local levels, significant issues found were: 1) the multiple

and fragmented water institutions in the country; 2) the nested and interlocking mechanisms in spatial water governance; 3) conflicts between national policies and local agreements; and, 4) conflicts between customary rules and formal state laws.

Results showed that the many legal documents for water are a source of confusion; and water data for planning are insufficient. While there are a multitude of water agencies, these are not connected vertically nor horizontally. These various institutions do not have sufficient human and financial resources and presence at the local level to be effective in their mandates.

The findings in this study reinforce previous studies that governance depends to a large extent on the underlying economic and social conditions and that there is no one prescribed approach to governance that will work in all cases (Rogers 2002). The one size fits all economic solutions are also inadequate (Sampford 2009). While hierarchical governance seems to be the prevailing arrangement in the Philippines, poly-centric governance mechanisms (Ostrom 2009) may be contextually relevant.

Instituting good water governance including responsive policy and institutional arrangements, appropriate planning, and effective implementation are the keys in addressing water crisis in the Philippines. The following strategies are therefore recommended to move things forward:

RECOMMENDATIONS

Review Legal and Institutional Framework

The Philippine Water Code defines the legal framework for the extraction, allocation, and management of water resources in the country. A proposal for a central regulatory office has been studied. The National Water Regulatory Board has also been transferred to the DENRs jurisdiction. At the local level, LGUs can establish water councils or watershed authorities which may not require legislative action.

There is proposal for an institutional body that will govern the watershed unit for its water resources and other environmental services. Since the watershed transcends administrative units, the need to have a watershed council or authority seems to be a move in the right direction to bring about a truly watershed-based water resource planning and implementation. Such a legal mandate must define who should have the power and how power and accountability must be shared among the various entities with interest in water resource concerns. It should also clearly define how water must be shared among recognized users and what priorities must be established across uses.

A legal system of this nature must include a discussion of the institutional requirements and accepted procedures for determining new uses, reviewing existing uses, and resolving disputes on water access (UNESCAP 2000). Unfortunately, the lack of a comprehensive legal framework and unclear institutional responsibilities remain outstanding issues in the water governance in most developing countries, including the Philippines. An institutional framework through which all water users will understand their roles is thus imperative.

Improve Planning and Decision-Making Processes

There is currently a proposal to establish a central body to manage water resources in the country (Tabios & Villaluna 2012) that has been submitted to the water sector agencies. This central body aims to be an efficient and effective agency to manage the country's water resources and have a coherent decision-making process. Its proposed mission is to manage and protect the country's water resources for domestic water supply, sanitation, irrigation, hydropower, fisheries, aquaculture, flood control, navigation, and recreation including the enhancement and maintenance of water quality, conservation of watersheds, control of water pollution, and environmental restoration without compromising the natural ecosystem functions and services. Table 3 enumerates the functions of this proposed agency.

The proposal is to strengthen the leadership and capacity of the National Water Resources Board (NWRB) and transform the agency to a structure that will enable the agency to become the management authority of the country's water resources. The transformed NWRB, is fundamental to manage the country's water resources, optimize the use of this resource and ensure water security for the different purposes/uses of water.

In addition to sector governance, the priority policy imperatives were also identified to facilitate the creation

of enabling environments, institutional arrangements and management instruments to enable the NWRMO to implement a decentralized framework of good water governance at river-basin level. This would include recommendations on the planning, development and implementation of an integrated water resources management (IWRM) approach based on quality data and scientific analysis. Most importantly, the proposal features integrated and accurate data collection and analysis and the use of scientific decision support systems for water resources management including flood modeling and warning system.

Study and Implement Participatory Water Governance Models

Local communities are the frontline consumers of environmental "good and bad," resulting from either water resource rehabilitation or degradation. As such, it is in their best interest to be directly involved in the governance of this resource. Their involvement in fact can spell the difference between the success and failure of governance efforts. Equating governance with government is a common practice (ADB 1999). But governance is also about the way stakeholders in society shape their relationships to order their affairs (Cleaver & Franks 2005). Local governments also play a major role in water governance. In the Philippines, local governments are empowered to manage natural resources within their spheres of influence and are in a position to make residents comply with best practices in water resource management.

On the other hand, there is need for alternative strategies to deliver water to communities. Such good practice of cooperation and coordination among the different stakeholders in the water delivery in poor urban communities was reported by one of the water concessionaires in Metro Manila. This is a case of a private sector-community partnership.

Table 3. Major functions of the proposed national water resources management office.

1. Planning and Policy Recommendation	6. Regulatory Functions- economic and resource regulation including extraction and water permits, quantity, monitoring and enforcement and conflict resolution
2. Data Collection and Monitoring	7. Water Economics Studies
3. Scientific and Decision Support Systems	8. Public Relations and Capacity Development
4. Infrastructure and Program Development	9. River Basin Organization Development
5. Strategic Development of Water Facilities and Operations	

(Source: Tabios and Villaluna 2012)

The problem as stated is that the poor are most vulnerable to limited water access because of their economic condition. The solution is a community based strategy where the community participates in the water delivery services, even becoming co-owners of the project, “Tubig Para sa Barangay” (Water for the Community). Among their engagements with the project was the establishment of livelihood opportunities (a cooperative) where they supply services for the maintenance of the water system. The report of the water firm in terms of impacts showed high economic benefits for the community members and especially reduction in incidence of water borne diseases and improved overall health and sanitation conditions (Rola & Francisco 2004). The biggest lesson in this case study is that with stakeholder participation, both the consumers and the suppliers benefit. This example shows that the water governance can indeed be improved if programs are inclusive, participatory, and community- based.

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