

Towards a Sustainable Systems Approach in Governing Water Environment in the Philippines

Carlos M. Pascual

Professor, Department of Agricultural Engineering
Mariano Marcos State University
Batac 2906, Ilocos Norte, Philippines
Email: cmpascual123@yahoo.com

Abstract

This paper presents a critical *state-of-the-art* review of the policy agenda *cum* theoretical model of governing water environment in the Philippines. Systems approaches on water governance model propose that transparency, accountability and participation of stakeholders or their improvement among water institutions be further strengthened and enhanced to ensure the stability of water governance and policy in the country. There is a need for a transfer of power from national to local water authorities and certainly necessitates the creation of an enabling legal and policy environment that would enhance and support local initiatives, as well as a continuing research agenda on water governance for sustainability.

1. Introduction

The Philippines, although known to have relatively abundant water resources is presently confronted with disturbing sustainable development crisis in the water sector. Ensuring the long term availability of adequate supplies of clean water at a reasonable price is one of the greatest challenges the nation needs to address. Rapid population growth, economic development, urbanization, and industrialization have taken its toll on the water resources of the country resulting in an increased competition for water supply, irrigation, and hydropower. Furthermore, increasing water pollution, degradation of the watersheds, and the inadequate government support to the water sector programs has aggravated the situation. Hence, there is a need for the implementation an integrated, coherent and sustainable integrated water resources management program. Water governance is a central issue to these concepts and entails complex issues and factors. There is a clear need to analyze the impacts of different types of governance of national and regional water resources in a global context (Craswell, 2005). Apart from concerns over energy and oil resources, scientists revealed a global shortage of water would curtail the world's ability to raise food by 2025. A system approach integrates voluminous database, complex issues, and analytical modeling methods such as artificial intelligence, decision analysis, optimization, modeling, etc. to support decision making (Aldeman, 1991). Walker & Zhu (2000) listed four reasons that would justify the development of system approaches decision support system for rural planning and resource management, such as: 1) increase of available information; 2) increase of complex decision making; 3) professionalization of resource management systems; and 4) increase of requirements to demonstrate “due process”. However, such system approaches had been applied mostly on agricultural land use planning options, crop suitability using GIS, crop modeling, and natural resources management (Lansigan, *et al.*, 2000) and being considered just lately in higher education and policy researches.

2. Water Environment Situation

The Philippines is an archipelago consisting of more than 7000 islands and covering a total area of 300,000 km². The average annual rainfall is estimated at 2373 mm/year. There are 421 rivers in the country. There are also 59 natural lakes and more than 100,000 ha of freshwater swamps. The groundwater resources are estimated at 180 km³. The total internal water resources would therefore amount to 479 km³/year. A survey of surface water storage potential has identified sites for 438 major dams and 423 smaller dams. The total water withdrawal was estimated on the basis of the water rights issued by the National Water Resources Board (NWRB) to 55,422 million m³ in 1995, of which 88% is for agricultural purposes. The water situation in the Philippines may be best described as an abundant scarcity. There is so much water, but it is scarce for most Filipinos. Moreover, scarcity has become so widespread that it seems happening most everywhere in the country. Irrigation service areas have dropped nationwide due to urbanization and drought (Malayang, 2003).

3. Policy Agenda for Water Governance

Outputs of the policy forum on water resource management in May 2002, revealed three major themes. This include: (1) there is an alarming water crises; (2) the water crisis, which is caused by a conjuncture of natural and anthropogenic events and rooted on destructive land-use practices, is aggravated by a flawed governance system characterized by a soft state (wherein laws are formulated in imprecise terms); and (3) while there is a need to strengthen national laws in order to address the water crisis, the need to empower local government units (LGUs) and communities is clearly recognized (PIDS, 2002). Major key problems in water governance were: (a) the failure to implement the laws and the presence of corruption—the problem of a soft state; and (b) the absence of mechanisms to operationalize an ecosystems approach and a market-based valuation technique in water resource governance. At present, the following laws provide the legal framework for water governance in the country: the 1987 Constitution which mandates that all water resources belong to the State; Presidential Decree (PD) 1067 in 1976 or The Water Code of the Philippines; Republic Act (RA) 8041 in 1995 or The Water Crisis Act; and the Executive Order (EO) 364 in 1996, which created the Presidential Task Force on Water Resources Development and Management. In this regard, it may be argued that it is necessary to establish a science-based governance mechanism and support the institutionalization and statutory recognition in any form of both a watershed approach and a market-based valuation system in water resource governance. However, legislating for a watershed or market-based approach will only be effective if it is supported by capacity-building programs inasmuch as the issues involved here are of technical rather than of legal nature. Water management inevitably involves a two-tiered system of governance-national and local. The central government still holds significant powers in water resources management. In some instances, other sectors such as non-governmental organizations (NGOs) also influence water policy and management schemes. However, failure in water governance is eminent due to: (1) failure to implement the laws – ‘soft state’ of governance system; (2) the absence of institutional mechanisms to operationalize integrated watershed approach; (3) the lack of appreciation of water as an economic good; and (4) the lack of mechanisms that will integrate water and watershed plans and programs of various agencies (PIDS, 2002). And, just lately, the Clean Water Act was enacted in 2004, with Implementing Rules and Regulations issued in May 2005. Provisions of the Clean Water Act will soon open commercial opportunities among various stakeholders.

4. A Conceptual Model of Water Governance

Water governance is viewed broadly as the collection of social controls on human conduct relating to water (Malayang, 2003). The controls constitute the deliberate intentions of a body politic to shape the state and conditions of water resources and its availability and services to humans and to other beings. They are articulated by the decisions and actions of water institutions which are either formal like state agencies or LGUs or non-formal regulatory arrangements like customs and tradition. In this view, water governance encompasses the set of purposive human decisions to bring about actions that are intended to maintain, or alter (if they are unacceptable, e.g., if polluted), the physical and social components of water resources. These are the decisions and actions that determine how water resources are able to produce energy, information and materials for acceptable human ends.

The model (Fig. 1) as expounded by Malayang (2003) is constructed from the following observations on how decisions and actions on water environment are made in the Philippines:

1. There is a multiplicity of institutions – organizations and regulations – governing water and its uses in the country; (Malayang, 1999; Magallona & Malayang, 2001 as cited by Malayang, 2003);
2. The authority and jurisdiction of water institutions differ in terms of a *hierarchy* of their coverage. Some are national while others are regional (or sub-national) and local. Others are global which have acquired legal authority in the Philippines through treaty ratification; they, too, affect water decisions and actions in the country;
3. The mandates of the institutions differ. Some are statutory (prescribed by law, and others are customary (or are creations of tradition or of local social arrangements, e.g., irrigation associations); and
4. Water institutions differ as well in terms of the societal sectors that they occupy; i.e., some are state agencies, while others are community or civil society groups (i.e., non-state organizations like irrigation associations, farmers' associations, consumer groups, NGOs and peoples' organizations (POs), private business groups (PBGs) and research and academic institutions (RAIs). Some of the latter might have legal personality ascribed to it by the state such as farmers' associations given water rights under agriculture and fishery, or NGOs and POs given official capacities in the national planning process like through the Philippine Council for Sustainable Development (PCSD). Thus, the decisions and actions on water resources in the Philippines are in fact a product of the interplay of multiple institutions operating in different hierarchies of authority, and in different societal sectors of decision-making and action taking. It is multi-level and multi-sectoral. And because the concerns on water may cover a number of issues over its uses and features, it is multi-thematic as well (i.e., 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 (Fig. 1).

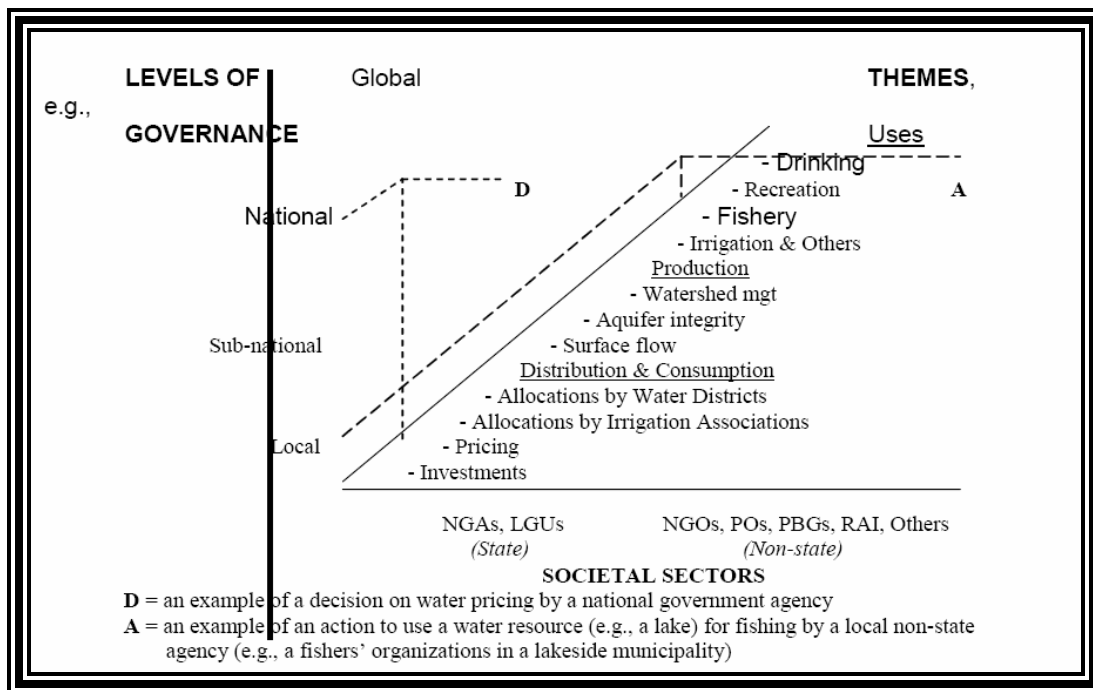


Figure 1. Water governance model in the Philippines. (Source: Malayang, 2003.)

5. Concluding Remarks

Transparency, accountability, and participation are the keys to strengthening water governance in the Philippines (PIDS 2002). The water governance model suggests that water policy, management, and governance in the Philippines will likely become more effective and efficient if they were to be the product of multi-sectoral participation in shaping the decisions and actions on a wide array of water concerns. Participation is to be anchored on public transparency and accountability to engender higher levels of legitimacy, public trust and credibility of water institutions, and thus of water governance itself. Those who own and manage water definitely have power over those who are deprived of this resource. But if governments fail to redistribute wealth and power by protecting local communities and vital water resources from the invasion of greedy corporations, who can the people rely upon but them. Stronger democratic movements at different levels that will demand and successfully obtain greater accountability from both governments and private corporations are therefore needed. And at the end of the day, when so many people are dying from lack of access to safe drinking water and sanitation, the struggle for water has to be transformed into a struggle for a fundamental human right and for being an economic good. Paradigm shift of research agenda is needed on water resource indicators, quality, productivity, as well as blue, green water and environmental flows; virtual water and associated nutrient flows, risk assessment on the water systems discourse to integrate natural science and social science into system approaches for a sustainable science on water environment (Craswell, 2005).

References

- Aldeman, L. (1991). Experiments, quasi-experimental and case studies. A review of empirical methods for evaluating decision support systems. *IEEE Transaction on Systems, Man and Cybernetics* 21(2).
- Craswell, E.T. (2005). Water and poverty in southeast asia – The research agenda from a global perspective. A paper presented during the *SEARCA Regional Conference on Water Governance and Poverty*, held in Manila, 9-10 March 2005.
- Lansigan, F.L., Pascual, C.M., Francisco, S.R. & Cruz, R.T. (2000). Exploring land use option for the Ilocos Norte Province, Philippines. In: *Proceedings on System research for optimizing future land use in south and southeast asia*, IRRI, Laguna, Philippines.
- Magallona, M. and B. S. Malayang III. 2001. “Environmental Governance in the Philippines” in *Environmental Governance in Southeast Asia*, Institute of Global Environmental Strategies, Tokyo, Japan.
- Malayang, B.S. (1999). “Environmental Co-Management in the Philippines: A Policy Challenge from the Perspective of Political Ecology” In: *Co-Managing the Environment: The Natural Resources of the Sierra Madre Mountain Range*. Ellen Bernardo and Denyse Snelder (eds.). Cagayan Valley Programme on Environment & Development and PLAN International.
- Malayang, B.S. (2003). A model of water governance in the Philippines. Paper Presented at the *Water Policy Forum*, Philippine Institute for Development Studies (PIDS), 28 May 2002, PIDS Room 208, Makati, Philippines.
- Walker, D.H. & Chu, X. (2000). Decision support for rural resource management. In: Workshop Proceedings “Deepening the basis of rural resource management”, February 2000, ISNAR, The Hague, The Netherlands.
- PIDS (2002). Development Research News. *Philippine Development Studies*, vol. 20 No. 4. July-August 2002. ISSN. 0115-9097. pp. 1-7.