Chapter 8. WATER SUPPLY AND SANITATION

I. Introduction

1. Water is an important natural resource and should be managed in a holistic and sustainable way. Today, the threat of inadequate safe water supply is real. Water is a key development ingredient and should be made available to every human being.

2. In the Philippines, groundwater is the common source of water in cities, municipalities and rural areas. Groundwater is primarily used by 60% of households, and in communities without the convenience of piped water service from municipal or city water districts, or Metropolitan Waterworks and Sewerage System (MWSS) concessionaires, people use water from the nearby "*poso*" or deep well.

3. Philippine legislators are currently working on the Clean Water Act to ensure that resource regulation covers the overall management of water resources with respect to its allocation and distribution, utilization, conservation and protection, and sustainable use. Water resource management in the Philippines is currently being handled by multiple agencies. Due to the range of functions of these agencies, planning is undertaken independently by the different groups. This makes the water sector inherently fragmented and sometimes conflicts exist among agencies due to some overlaps of responsibilities. It is hoped that the new legislation crafted can correct the situation.

4. Important water-related issues have to be addressed by public and private players and stakeholders to ensure improved and sustainable water supply for existing customers and to provide the poor with equitable access to safe and reliable water supply. The critical issues include the following: inadequate supply of clean water; complex structure of water governance; sewerage and sanitation; water pollution; and the implementation of the Philippine Clean Water Act (RA 9275).

5. Adequate supply of water is essential in the Philippines but not assured throughout the country. The deterioration in the quality and quantity of surface and groundwater source is a clear indication that access to clean water is becoming a problem in many urban and coastal areas. Households with no connections to water sources or no formal level of water service resort to self-provision. They access water from wells, springs, and communal faucets. Demand exceeds supply, especially among the urban poor who pay private vendors for water at rates that are sometimes 10 times the price of piped water. The poor and rural households are more vulnerable to diseases such as gastroenteritis and typhoid, caused by contaminated water.

6. This chapter discusses the following:

- **characteristics of a water system;**
- **integrated water resource management – need for a coherent regulatory framework; and,**
- **improving the structure of water governance.**

7. It is not possible to define sustainability in an absolute sense but government should ensure the availability of water resources not only for the present generation but also for future generations. This means that strategies and action plans should have a planning horizon covering the next 20-30 years.

8. The constantly growing population of the country (2.3% per year) is making it more difficult for planners and water service providers to cope with the ever-increasing demand both for domestic and industrial uses. Another challenge being faced by the government is meeting the target under the Millennium Development Goals (MDGs), which is to reduce by half the proportion of people without sustainable access to safe drinking water and sanitation by 2015. In the Philippines, in order to achieve the Millennium Development Goal of 90% access to formal services by 2010, the investment needed for water supply is estimated to be about Pts6 billion to Pts7 billion a year. The cost of implementing the Clean Water Act is estimated at about Pts35 billion a year.[1]

II. Characteristics of the Water System

9. Water is central to human existence and its scarcity and wasteful use impact acutely on humanity. According to the Department of Health, an average of 12 persons a day (or 4,200 deaths per year) die of water-borne diseases. Water is a major factor in ensuring the availability of food, and the conditions in which people live. In Asia and the Pacific region, home to nearly 900 million of the world's poorest people, accessing adequate clean water is one of the principal concerns.

10. The Philippines is endowed with rich water resources, with rivers and lakes covering 1,830 sq. km. and 421 river systems in 119 proclaimed watersheds. Water demand is expected to increase from 1,303 m^3 in 1995 to 3,955 m^3 in 2025. There is an uneven distribution of water resources throughout the country, resulting to water shortages in highly populated areas especially during the dry season. There are four urban regions that are considered to be in critical condition in terms of water quality and quantity: the National Capital Region (NCR, Metro Manila); Central Luzon; Southern Tagalog; and Central Visayas.

11. Surface water quality can be assessed by using parameters, such as Biochemical Oxygen Demand (BOD) and Dissolved Oxygen (DO).

12. Water pollution, caused by the domestic (municipal), industrial, and agricultural sources, is affecting the different bodies of water. The relationship between polluted water and disease has been firmly established. Pollution of our water resources can occur directly from sewer outfalls or industrial discharges (point sources), or indirectly from air pollution or agricultural urban runoff (non-point sources). Water pollution is most severe in Metro Manila, where almost all surface waters can be considered biologically dead during the dry months. This is due to the heavy concentration of population and industrial activities and the lack of sewage treatment system

13. Given the present characteristics of the water system, strategies should be formulated to come up with action plans that will address the present water-related problems.

[1] *Philippines, Meeting Infrastructure Challenges*, The World Bank, p.116.

III. Integrated Water Resource Management – Need for a Coherent Regulatory Framework

14. Water resources are critical to the survival of humankind, but they don't always exist when and where they are needed. There is, therefore, a need to manage water resources efficiently and effectively to have a sustainable supply of water for both the present and future generations. There is a present gap between human demand and the availability of water in the required quantity and quality, and this has become a fundamental issue facing the water sector. As populations grow, water shortages will increase, and competition for water will intensify. This brings to the fore sustainability issues.

15. Water resource development and management are public sector activities, but money needed to develop and manage water, sustainable or otherwise, generally comes from the private sector. Professionals, particularly engineers, can contribute to sustainable development in several ways. They can introduce environmentally beneficial practices within their own organizations, and ensure that their projects not only meet their client's needs but at the same time contribute positively to sustainable development.[2]

16. To meet the increasing challenges of water scarcity, water pollution, continuous degradation of watersheds and ecosystems, water resources need to be managed in an integrated manner. Integrated water resources management (IWRM) is a process to improve the planning, conservation, development, and management of water, forest, land, and aquatic resources in a river basin context, to maximize economic benefits and social welfare in an equitable manner without compromising the sustainability of vital environmental systems.[3]

17. There is no ideal type of arrangement. The most applicable framework is one that is very much country-dependent in terms of its culture, economy, and political environment.

IV. Improving the Structure of Water Governance

18. The existing regulatory set-up is quite complicated and poses problems on conflicts of interests and possible overlapping of responsibilities that hinders effective water resources management. Governance from a water sector perspective refers to the range of political, social, economic, and administrative systems used to regulate the development and management of existing water resources and provision of water services.

19. Water governance in the Philippines is being undertaken by multiple agencies. At the national level, existing institutions on water resources management include: the National Water Resources Board (NWRB) and the Presidential Task Force on Water Resource Development and Management (PTFWRDM). The NWRB is responsible for policy formulation, administration and enforcement of the Water Code of the Philippines. Other agencies perform policy formulation as it relates to its mandate:

a. Department of Public Works and Highways (DPWH) for flood control and drainage (this responsibility has recently been transferred to the Metro Manila Development Authority);
b. Department of Health (DOH) for sanitation;

[2] Daniel P. Loucks, Member IWRA, Cornell University, Ithaca, New York, USA.
[3] *Water for All*, ADB, p.19.

c. Department of Environment and Natural Resources (DENR) for watershed protection and water quality;
d. Department of Interior and Local Government (DILG) for LGU-managed water supply, and sewerage and sanitation systems and capability building;
e. National Power Corporation (NPC) for hydropower development;
f. National Irrigation Administration (NIA) and Bureau of Soils and Water Management (BSWM) for irrigation development;
g. Metropolitan Waterworks and Sewerage System (MWSS) for water supply, sewerage and sanitation in Metro Manila and partially in its neighboring provinces; and,
h. Local Water Utilities Administration (LWUA) for the Water Districts-managed water supply and sewerage systems.

20. In addition to these existing agencies, several proposals have been put before the Philippine Congress for consideration, such as the Water Regulatory Commission (WRC), the National Water Resources Commission (NWRC), and the Water Resources Authority of the Philippines (WRAP). The aim of these proposals is to streamline the operation of existing agencies and combine the different agencies involved in the water sector.

21. In the different regions in the country, the Regional Development Council (RDC) acts as the single planning body that directs and coordinates the socio-economic development of a region. This serves as a forum where local efforts can be integrated with national development activities.

22. At the local level, the 1991 Local Government Code empowered the Local Government Units (LGUs) to implement devolved activities, which include water supply systems, communal irrigation systems, and local flood control projects.

23. Non-Government Organizations (NGOs) are also working with government agencies and communities to address issues pertaining to water supply and sanitation.

24. Community participation is an important element that needs to be built into the initial stage of any project. The bottom-up approach has been very effective. Communities identify their problems and their needs and work with the local government with assistance from funding agencies to put a waterworks system in place.

V. Roles of Major Government Agencies in Regulation and Privatization

25. The Local Water Utilities Administration (LWUA) regulates the more than 600 water districts outside Metro Manila. LWUA is a specialized lending institution for the promotion, development, and financing of water districts. It is mandated to establish standards for local water utilities – regarding water quality; design and construction; equipment, materials and supplies; operation and maintenance; personnel; organization; and accounting – and to formulate rules and regulations for their enforcement.

26. In Metro Manila, the Metropolitan Waterworks and Sewerage System (MWSS), embarked on a privatization scheme which resulted in two private water concessionairs: Ayala (with Northwest Water and Bechtel), and Benpres Holdings (with Lyonnaise des Eaux), providing water to the east and west zones of the metropolis, respectively, since 1997. The concessionaires are under the MWSS Regulatory Office where the chief regulator reports to the MWSS Board of Directors.

27. The Regulatory Office (RO) monitors compliance of MWSS concessionaires to their Concession Agreements (CAs). It has considerable authority over determining tariff rate adjustments, service target adjustments, compliance with water and environmental standards, consumer target, audit and compliance with obligations and termination of CAs.

28. The concessionaires are required to provide 95% water coverage by 2002, and are beginning the necessary upgrades and rehabilitation of the distribution network. The concessions have had financial difficulties due to reduced water supply and the devaluation of the peso. The concessionaires do not assume the financial risk for bulk water provision from the government until the tenth year of the concession. Only after 2008 can they freely set rates that allow for cost recovery of operations, maintenance and investment expenditures incurred over the 25-year term.

29. NWRB regulates and control the operations of utilities outside the jurisdiction of MWSS and LWUA. It also undertakes economic regulation of private systems and performance monitoring of private and LGU-operated systems.

30. Under the Local Government Code of 1991, water supply, sewerage and sanitation services are effectively devolved functions of the LGUs. These services may be provided through LGU-owned and operated water supply facilities. In these cases, LGUs have the economic and regulatory functions as they set their own tariffs.

Figure 8.1 Proportion of Families With Access to Safe Water Supply by Region

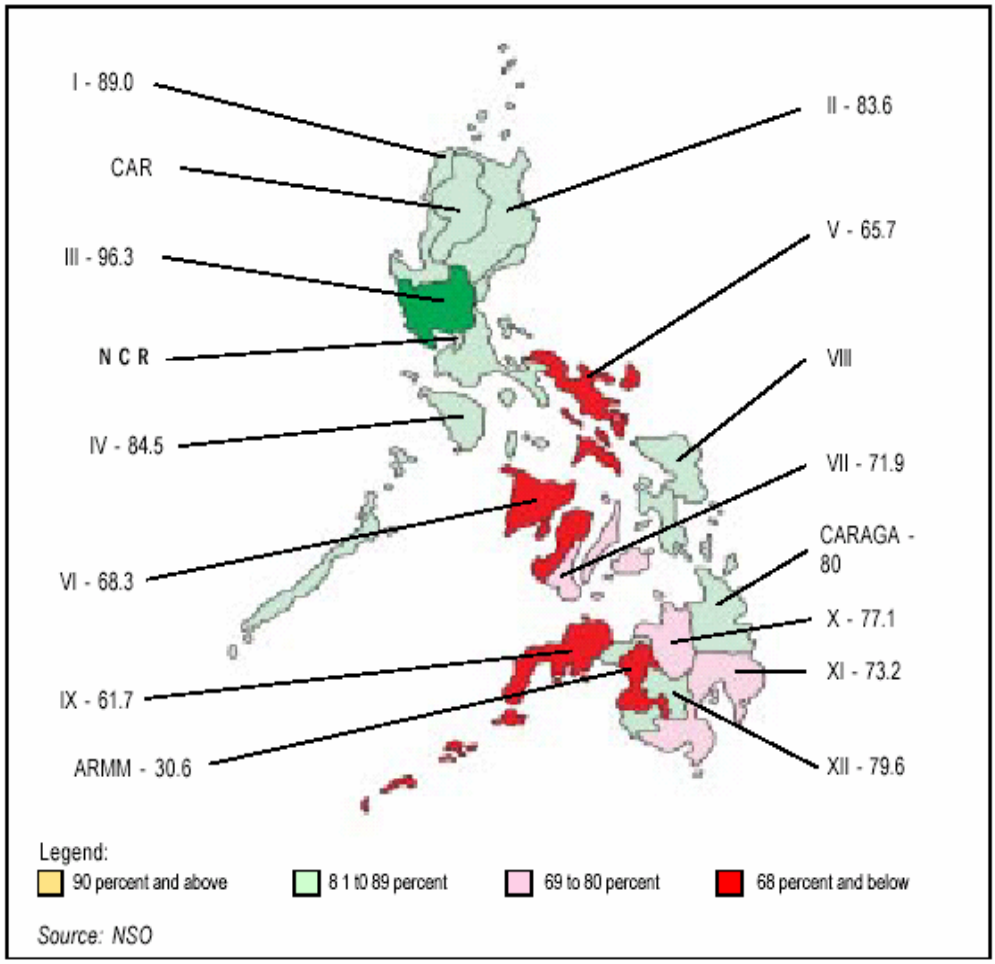

Table 8.1 Proportion of Families With Access to Safe Water Supply, Selected Years (In Percent)

1988	1991	1994	1997	1998	1999	2000
71.9	73.7	77.3	76.9	78.1	79.1	78.5

Sources of Data: Family Income and Expenditures Survey (FIES); 1988, 1991 and 1994
Sources of Basic Data: FIES: 1997 and Annual Poverty Indicators Survey; 1998 and 1999
National Statistics Office

- Priority Policies and Programs
  - strengthening public health programs
  - institutionalizing water quality management system for LGUs
  - developing the capacity at the national, regional and local levels in providing environmental health testing laboratories
  - developing the skills and qualifications of personnel within the DOH and at the local levels on environmental health

- Challenges and Priorities for Action
  - Disparities Across Regions
  - Deterioration in Quantity and Quality of Water Resources
  - Low Level Investment

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