

FRESHWATER COUNTRY PROFILE

PHILIPPINES

Decision-Making

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Decision-Making: In implementing its commitment at the 1992 United Nations Conference on Environment and Development (UNCED), the Philippines has begun the process of integrating Agenda 21 principles into its development plans, programmes, and budgets at the national, regional, and local levels. To assist this progress, the Philippine Council for Sustainable Development (PCSD) has coordinated the integration of a number of priority actions into the country's Medium-Term Philippine Development Plan (MTPDP), 1993-1998. A development vision and framework for the 21st Century has been formulated under the Long-Term Philippine Development Plan (LTPDP), 2000-2025 or Plan 21. The LTPDP framework recognizes that the new millennium will increasingly call for economic development to become less ecologically destructive.

Plan 21 builds on the solid foundations created by the MTPDP. Plan 21 sets the broad developmental directions of the country and will serve as the basis for the detailed plans of the sector agencies. It ensures the continuation of policies based on self-responsibility, productivity, creation of opportunities through competitive markets and enlightened government regulation. The Philippines has also established a national Agenda 21 called the Philippine Agenda 21, or PA 21. It provides for the creation of an enabling environment which would assist various stakeholders to integrate sustainable development in their decision-making processes. A mechanism to ensure integration of sustainable development in local plans, programmes, and projects is through the localization of PA 21. In this regard, the PCSD has been supporting local initiatives on the creation of local councils through technical assistance and training.

A resolution recognizing and advocating the leading participation of NGOs and POs in the implementation of development programmes and projects has been passed. The other major groups of society, for example women, youth, indigenous peoples, and communities, have been recognized as equal partners in shaping, crafting, and implementing development programmes. They participate in all stages of development. The business sector continues to be involved in a number of programmes to ensure that environmental considerations are integrated in their activities.

Water resource management: The government of Philippines has decided to pursue, consistent with the December 1994 Water Summit decisions, an Integrated Water Resources Management (WIRM) based on river basin approach as the direction for future water resources planning and investment. The shift from a sector approach to a more focused river basin approach is integrative and coordinative of all water-related efforts. In line with this approach is the need to address the over-all institutional structure of the water resources sector and its management including the resource regulatory function, the water rights function, the water pricing regulation function, and water allocation.

Currently, while waiting for the creation of an independent water resources authority, the National Water Resources Board (NWRB) acts as the overall water resource regulator except in the case of Metropolitan Waterworks and Sewerage System (MWSS). The National Water Resources Board (NWRB) was also recently reconstituted through Executive Order 123 (signed in September 2002) which made it independent from direct claimants to water resources which should improve its image of impartiality and, thus, increase investor confidence.

The Department of Agriculture (DA) and the Department of Interior and Local Government (DILG) issued the implementing rules and regulations (IRR) on the preferential treatment and access of marginal fishermen to municipal waters under the Local Government Code (LGC).

The National Framework for Physical Planning (NFPP), which contains policy guidelines for settlements planning, espouses policies that would provide access of the population to sanitation, and basic utilities such as water.

The Agriculture and Fishery Modernization Act of 1997 (AFMA) recognized that the most urgent task to start the modernization program is irrigation. Being the lifeblood of agriculture and rural development, the lack and mismanagement of it have been pinpointed as one of the major constraints in achieving growth in the agriculture sector.

With the current scarce financial resources, irrigation development is now geared towards the following:

1. Rehabilitation and improvement of existing facilities (e.g. NIS, CIS, SWIP and other small-scale irrigation systems)
2. Ensuring effective O & M of existing facilities
3. Prioritization of the implementation of small-scale irrigation systems (e.g. shallow tube wells, small water impounding projects, small farm reservoirs, small diversion dams) to expand irrigated areas
4. Increasing water productivity (i.e. yield per unit water use) through the use of more efficient and high yielding varieties (e.g. Hybrid).

In 1995, then President Fidel V. Ramos issued E.O. 286, which sought the reorganization of the Manila Waterworks and Sewerage System (MWSS) to encourage private sector participation in the privatization of MWSS operations and facilities. Subsequently, the issuance of E.O. 311 paved the way for the involvement of the private sector in any, or all segments of MWSS' operations. In 1997, water and sewerage operations in Metro Manila were assumed by two private concessionaires. Metro Manila was divided into East and West Zones, each served by a concessionaire. The privatization of water services in Manila is considered to be the biggest in terms of size. The policy alternative chosen by the government to privatize water services in Metro Manila has generated mixed results, where one of two concessionaires is able to generate positive profits while the other is experiencing financial problems due to a mix of internal and external factors.

Recently, the Philippine Clean Water Act of 2004 was signed into law. This landmark legislation aims to comprehensively address the issues of water supply and sanitation in the Philippines. Among the most essential features of the law are the establishment of Water Quality Management Areas (WQMA) such as watersheds, river basins, and other water resource areas. Also, it requires that agencies charged with the provision of water supply and sewerage facilities in highly urbanized cities be required to connect sewerage lines to available sewerage system. Furthermore, it establishes Area Water Quality Management Fund for the maintenance and upkeep of the water bodies in the WQMA.

Programmes and Projects:

A. Integrated Water Resources Development and Management: Over the years, the government has implemented projects aimed at addressing the issues of water resources. Efforts towards the rehabilitation of several rivers have been undertaken. NWRB is a member of the Technical Working Groups (TWG) on Water of the Philippine Economic Environmental and Natural Resources Accounting (PEENRA) which aims to prioritize water resources (surface water) based on their economic importance and environmental significance and to ensure availability of the data needed in the compilation of the accounts.

The Master Plan on Water Resources Management in the Philippines adopted the River Basin for comprehensive planning. It provided a framework for the orderly development and management of water and related land resources as well as identified and recommended water resources development projects to cope with the projected water shortage in the future.

Appropriate land use management systems and soil conservation techniques have been developed to minimize land degradation, indiscriminate conversion, and consequent deterioration of land productivity. These farming techniques include Contour Farming and Alley Cropping; and Water resource management.

NWRB is currently conducting a National Water Data Collection Network Project, which is an improvement of the three national primary monitoring networks for stream flow, groundwater and water quality. The main objective of this activity is to define the hydrological and hydrogeological characteristics of the country as well as the changes in the water quantity of the surface and groundwater resources.

B. Water Resources Assessment: The Water Inventory Project was conducted in 1995. Monitoring of water pollution has been conducted. Efforts towards assessment of several rivers have been undertaken.

As reported by the World Bank's Philippines Environment Monitor 2003, the Environmental Management Bureau (EMB) has been regularly monitoring a total of 39 bays and coasts in the Philippines since 1996. Except for Puerto Galera, which is a protected seascape, the data indicated that 64 percent had dissolved oxygen (DO) levels below 5 mg/l, the minimum criterion set for waters suitable as a tourist zone, fishery spawning area, and contact recreation or swimming area. In the coasts of Mandaue to Minglanilla in Cebu (Central Visayas), DO levels varied from 0 to 14 mg/l, which indicate that the ecosystem is already undergoing "stress" during certain periods.

Drinking water supply is distributed unevenly among the regions, with some areas containing more while others have limited supplies. Among Southeast Asian countries, the Philippines ranks second from the lowest in terms of per capita water availability per year with only 1,907 cubic meters. This is much lower than Asian and world averages. For the low economic growth scenario, it is projected that by the year 2025, water availability deficit would take place in Pasig-Laguna (Region IV), Pampanga and Agno (region III), Bicol (Region V), Cagayan, all regions in Luzon and Jalaur and Ilog-Hilabangan (Region VI), and the island of Cebu (Region VII) in Visayas. Cebu Island was included in the analysis due to its significant economic role, which is second to Metro Manila, except Angeles and Iloilo, shows a water supply deficit until 2025.

C. Protection of Water Resources, Water Quality and Aquatic Ecosystems: Under the Socio-Economic Development Policies (SEDP) of the Integrated Environment Management for Sustainable Development (IEMSD), a study on the "Implementation of Selected Market-Based Instruments (MBIs) for Air and Water Pollution Control" was undertaken to examine the applicability of MBIs for air and water pollution reduction in the Philippines. The study also discussed the implementation designs of efficient charges on water pollution and computed the optimal levels of pollution charges.

A programme of assistance to Local Government Units is being implemented by the Department of Agriculture (DA) to prevent further environmental degradation by: a) prohibiting further destruction of the mangrove ecosystem and reconverting abandoned, foreclosed, or unproductive fish ponds into mangrove farms; b) establishing and maintaining fish sanctuaries and marine parks in municipal waters; c) restoring productivity and ecological balance of exploited inland waters by prohibiting the use of destructive fishing methods and gears and by dispersing fingerling; and d) providing support for programmes which promote community participation in environmental conservation (that is, the Bantay Dagat Programme which encourages local communities to actively participate in the protection of their fishing grounds).

The Department of National Defense, together with MWSS and ABS-CBN Foundation, Inc., has been keen in working for the security, maintenance, and development of the La Mesa Watershed, the reservoir of Metro Manila's water supply. Series of meetings have been conducted to discuss ways and means of addressing the problems and challenges of conserving the La Mesa Watershed.

D. Drinking Water Supply and Sanitation: Department of Social Welfare and Development: Kapit Bisig Laban sa Kahirapan - Comprehensive Delivery of Social Services: Kapangyarihan at Kaunlaran sa

Barangay (KALAHI-CIDSS:KBB) provided a total 68 water-related projects, which includes potable water, water supply system Level I and II, water tank/reservoir, jetmatic pump and water lines, covering eleven (11) regions, thirty (30) municipalities and seventy-seven (77) barangays. Water-related development projects of KALAHI-CIDSS constitute 37 percent of the total community project.

World Bank's Philippines Environment Monitor 2003 reports that at the local government units, investments in sewerage collection and treatment facilities receive low priority compared to income-generating projects such as water supply. This is due to the high cost of constructing sewer networks, poor technical capacity, and low demand or willingness to pay for sanitation services.

E. Water and Sustainable Urban Development: The total population served by MWSS through its concessionaires as of the first quarter of 2002 stood at about 9.6 million or 82.8 percent of the 11.6 million total population under the MWSS service area. This represents an increase of 100,000 in served population from 9.5 million in December 2001. It is significantly higher than the 7.3 million population served prior to privatization: the number of people served rose by 32 percent while water production rose by 46 percent. Nonrevenue water also fell from 61 percent to 60 percent.

The Local Government Units Urban Water and Sanitation Project (LGUWSP), funded by the World Bank, served 5,491 additional households covering a population of 32,946.

F. Water for Sustainable Food Production and Rural Development: A programme, known as "Kasaganaan Sakahan at Kalikasan" or "KASAKALIKASAN" represents the government's commitment towards promoting sustainable agriculture and rural development through measures including water resource management. The Small Water Impounding Projects (SWIPs) have been developed as water storage mechanisms to supplement the water supply for subsistence farmers and as a deterrent to soil erosion.

As the result of the Multi-Sectoral Summit convened in July 1997 to mitigate the impact of El Niño in various production areas of the country, the following programmes and projects have been undertaken: an intensive campaign and information dissemination on the proper techniques for rain water harvesting, use, conservation and management for irrigation and domestic uses; and the provision of additional investments on shallow tube wells (STWs), small water impounding projects, and other small-scale irrigation projects especially for highly vulnerable areas. Water conservation is also promoted through crop diversification and integrated farming.

Agriculture, specifically, irrigated agriculture is considered as the greatest water user as it accounts for about 79 percent of the total water use. As of September 2003, the total irrigated area is about 1.392 M hectares, which is just 42.70 percent of the total potential irrigable area of 3.26 M hectares (i.e. NIA estimates). While the Philippines has abundant water resources (i.e., being endowed with 59 natural lakes, 421 river basins, 50,000 sq. km. of extensive groundwater reservoir and an average annual rainfall of 2,400 mm), uneven distribution of water still persists.

The Department of Agrarian Reform has provided potable water supply and irrigation projects to Agrarian Reform Beneficiaries (ARBs) particularly in the Agrarian Reform Communities (ARCs). The Agrarian Reform Communities (ARCs) Situationer Report indicated that as of June 2003, 661 irrigation projects were put up in 342 ARCs, serving 70,522 ARBs. Most of these irrigation projects (244 completed irrigation projects) were provided to the Prime ARCs with 30,816 hectares benefiting 29,100 ARBs.

On the other hand, the country's rural population served by the DPWH/DILG water supply projects increased by more than 131,400 at the end of 2002 with the implementation of the following projects: (i)

Rural Water Supply and Sanitation Project (RW3SP); (ii) Rural Water Supply and Sanitation Project (RWSSP V); (iii) Water Program for Rural Areas funded by GTZ

For other provincial areas served by Water Districts, the coverage increased from 10.8 million in 2001 to 11.1 million by midyear 2002 with the implementation of various water supply development programs.

G. Impacts of Climate Change on Water Resources: The Asian Development Bank Climate Change Project, which conducted vulnerability studies, generated a rapid assessment of the country's vulnerable sectors and areas to climate change, including water resources.

Status: Socio-economic aspects: The National Anti-Poverty Summit drew-up poverty reduction targets at the regional level to achieve a national target of 30% by 1998. It also resolved to expand the coverage of the SRA from an initial concentration on 20 priority provinces to an additional 57 provinces and 65 cities.

Based on the results of the 2000 census, the country's population growth rate for the 1995-2000 period is 2.36 percent- a rate higher than the 1990-1995 period which is 2.32 percent. Relative to other ASEAN countries, this growth rate is very high given that Thailand and Indonesia have reduced their growth rates to 0.9 percent and 1.5 percent, respectively, since the early 1990s. Given the demographic trend in the country, the population policy embodied in the PPMP DP was restated to address the need for RH and FP information and services. Likewise, its companion document- the PIP- was revised. Despite these efforts in POPDEV, several issues have not been addressed. For one, there is still gap between desired and actual family size. In 1998, actual family size was 3.7 children while the desired family size per women was 2.7 children. Contraceptive use is low as indicated by the 28.2 percent contraceptive prevalence rate for modern method. Moreover, unmet need remains high at 19 percent (about three million women). Meanwhile, male participation in fertility management, childcare and household activities still need some improvement. Other issues are the increasing incidence of teenage pregnancy and the lack of a sustainable operating mechanism for RH/FP. The infant mortality rate (IMR) decreased from 48.9 per 1,000 live births in 1995 to 41.2 per 1,000 live births in 2000. However, the Philippines still ranks far below our neighboring countries like Singapore and Thailand with IMR of 3.1 and 6.3 per 1,000 live births respectively in 2000.

Aspects of water resources: The MDGs include a target to halve both the proportion of people who are unable to reach, or to afford safe drinking water by 2015.

The 1991 baseline data for the country reveals that 26.3 percent of the populations have no access to drinking water (Table 1). Thus, the MDG target translates to a national target of reducing the proportion of the Philippine population that do not have access to safe drinking water to 13.2 percent by 2015. By 2000, this proportion has been reduced to 21.5 percent. If this rate of reduction is maintained, the Philippines is expected to likely achieve its MDG commitment for safe drinking water access.

Table 1. Safe Drinking Water: Actual and Projected Access

% of HH without Access			Average Rate of Progress	Required Rate of Progress	Ratio of Required Rate to Average Rate
1991	2000	2015			
26.3	21.5	13.2	0.53	0.55	1.04

Source: Philippine Progress Report on the Millennium Development Goals, January 2003.

It may be noted that while the national average for access to safe drinking water is approaching MDG norms, there are wide geographical disparities. For instance, only about 31 percent of all households in one region in the southern part of the country have access to safe drinking water while in a northern region, household access has already reached 96 percent. It is interesting to note that peace and order as well as economic growth have been most problematic in this southern region. More than half (55 percent) of the country's rural population, amounting to about 26.7 million, are still being served mostly with Level I systems.

Problems in deteriorating quality and quantity of water will also have to be addressed especially for slum dwellers and those living in municipalities near the coasts. It was discovered that 36 percent of the water used by the former was contaminated at the point of consumption and 17 percent at source. This was due to improper handling and storage of drinking water. Meanwhile, ground water has been the principal source of municipal water (46 percent). However, the recent up swell in ground water use in the country has led to problems like salt water intrusion into the aquifers of coastal communities and water pollution.

There's also the problem of the high incidence of non-revenue water (NRW). In one area in Metro-Manila, it has increased from 66.2 percent in 2000 to 67 percent in 2001. On the other hand, the NRW in other urban centers, though still high, appear to have been reduced from 31 percent in 2000 to 29 percent in 2001.

A half (50%) of the activities identified under the action agenda on freshwater for the period 1997-2001 has been implemented. Implementation of activities in the action agenda was facilitated through the presence of Sustainable Development (SD) champions whose strong commitment and support paved the way towards operationalizing SD and the Philippine Agenda 21 (PA 21). These champions come from the various government agencies, local government units, civil society, and business institutions, who clamor for concrete action in their respective organizations.

In the period 1990-1999, the pressure on water resources continued to increase.

The Philippine Institute for Development Studies (PIDS) conducted a study on water pricing to determine the economic value of water for the development of a more realistic pricing scheme to consider full cost recovery and other externalities such as the public's willingness to pay for water as a commodity. Then the Government recently moved towards the privatization of the Metropolitan Waterworks and Sewerage System (MWSS) as a result of Executive Order No. 311. The privatization aimed to: improve service standards and expand service area coverage; increase the water supply system efficiency; eliminate fiscal burden on the government; and implement waste water management programmes.

The privatized MWSS is obligated by the year 2000 to provide water on a 24-hour basis, to maintain water quality within World Health Organization standards and to ensure effluent discharge is within the standards set by the Department of Environment and Natural Resources (DENR). These concessionaires are required to provide clean and safe drinking water to 98% of the population in Metro Manila by the year 2001 and to expand the water supply facilities to include raw water sourcing and treatment.

Capacity-Building, Education, Training and Awareness-Raising: To raise the level of awareness of the general public on the efficient use of limited water resource, massive information, education and communication campaign was conducted.

Watershed Management Training was organized by the Lingkod Tao-Kalikasan, an environmental NGO. The training tackled watershed characterization, water budget, soil conservation, water management, land use planning and modeling, monitoring and evaluation in watershed areas. Participants were representatives from NGOs, community-based groups and some academic institutions in Mindanao.

Another innovation in integrating sustainable development (SD) in governance is to implement the “Environmental Intelligence Quotient Scheme (EIQS).” The EIQS will integrate environmental and SD aptitude test in the examination administered by the Philippines’ Civil Service Commission (CSC) and Career Executive Service Board (CESB) for career service officers and other government personnel. An Environment and Natural Resources Network (ENR Net) has also been set-up to provide information on SD and environment.

Information: The Government has developed an integrated water resource database to better manage and plan for the development of water resources in a sustainable manner.

National Master Plan on Land Resources Management proposes the adoption of computerized Survey Verification System (SVS) and Land Records Management Information System (LMRIS), Geographic Information System (GIS) Technology on a National scale and the acquisition of modern surveying equipment.

An environmental NGO, Lingkod-Tao Kalikasan, published a primer “Water of Life” for dissemination to community leaders. The primer presents a simplified discussion on the uses and problems of water in the Philippines, the hydrological cycle, water supply, watersheds, water contamination., water management proposals, and the various agencies responsible for water management, supply and pollution control.

The National Water Information Network (NWIN) is an on-going project of NWRB, a computer-based system to design and develop a central database at NWRB which would receive, access and integrate water resources data from the major data collection agencies. There are eight (8) national agencies that are already electronically linked to the NWRB databases (<http://nwin.nwr.gov.ph>). These are PAGASA, BRS, LWUA, NIA, MGB, NEDA, and DILG.

Research and Technologies: There are ongoing research and development activities in the development of appropriate methods for water pollution control to reduce industrial effluents.

Management of hazards, disasters and risks is also among the areas of concern. The establishment and operation of centralized waste handling is in progress. This is complemented by the development of training modules in the field. Other on-going R&D activities include: the development of efficient and clean technologies to reduce industrial wastes (such as the development of appropriate methods for water pollution control); utilization of renewable energy sources; strengthening of solid waste management; and air pollution quality.

The Integrated Environmental Management Programme (IEMP), a joint undertaking of DENR and US AID, aims to encourage sustainable economic growth in the Philippine industrial sector while reducing pollution from industrial activities, and improving human health and the environment. It conducts pollution management appraisals (PMAs) to periodically assess waste minimization opportunities and improve firms’ production processes and methods (PPM). There are also initiatives being coordinated by the PBE, a non-stock, non-profit organization formed to assist business firms in making their operations supportive of environmental thrusts. The PBE developed and promotes the PBCSD, an instrument which encourages business firms to adopt environmentally correct practices or cleaner production strategies. Some of the initiatives include implementation of a pollution control programme by Hi-Cement (cement plant) which includes the installation of a device that controls the release of dust and other particulate matter into the atmosphere.

Financing: The integration of SD principles into budgetary guidelines was pursued. The Department of Budget and Management (DBM), the lead agency in the integration process, developed a general framework for integrating SD principles and parameters in the budgetary process in coordination with the

PCSD Committee on Socio-Economic Dimensions. With the institutionalization of the system, public sector spending may be made more in line with the goals of SD.

Assuming the same pace of poverty reduction under the MTPDP, the amount of resource needed to meet the MDG in low-cost water will increase from PhP 946 million in 2002 to PhP 17.635 billion in 2015. The amount of resources required for low-cost water is not large per se. However, the major challenge appears to be the relatively low priority given to the sector in the budget and the need to focus on hard-to-reach areas (Source: Manasan, R.G. 2002. Philippines Country Study on Meeting the Millennium Development Goals. UNDP)

The DBM, in a general sense, has incorporated the SD principles in the Fiscal Year 2004 Budget Call by advocating a budget that is reflective of the government's medium-term fiscal consolidation and debt reduction strategies towards sustainable socioeconomic development. Furthermore, DBM recently shifted to performance-based budgeting under the public expenditure management (PEM) approach where agencies are urged to integrate SD principles through their major final outputs (MFOs). Agencies, in consultation with the DBM and NEDA, have identified their MFOs which contribute to sector outcomes identified under the Medium-Term Philippine Development Plan (MTPDP). Under the environment subsector, for instance, SD principles were considered in the formulation of the subsector MFOs. These MFOs will now be the bases in formulating Agency Performance Reviews (APRs) conducted by DBM.

The government will also: (a) shift emphasis from Build-Operate-Transfer (BOT) scheme to concessions and similar arrangements in terms of privatization of water supply activities; (b) develop and provide incentives for contiguous water districts to aggregate into single business entities to attain economy of scale in project development cost; and (c) ensure the financial and technical performance of water utilities to address the sustainability of water supply. It will also pursue the establishment of a single agency for the rational and effective economic regulation of all piped-water supply and sewerage system and to increase the capitalization of the Local Water Utilities Associations.

The private capital infusion in development undertakings came into the sector less-than-expected. One reason for this was the absence of a strong and independent regulatory board that, among others, sets and approves tariffs as well as allocate finite water resources among various competing users. An effective and credible economic regulatory agency weighs two conflicting objectives – quality of service and reasonableness of tariffs. The regulatory body will also have to provide incentives to suppliers to improve efficiency without compromising the welfare and interests of consumers.

Another possible reason for low investments is the varying cost recovery schemes for the different services of water delivered. For instance, urban water supply (level III), services are provided on the basis of full cost recovery. On the other hand, user charges for rural water supply (levels I and II) cover only the operation and maintenance of the systems.

See under the subsection of G. Impacts of Climate Change on Water Resources on Programmes and Projects.

Cooperation: The Ramsar Convention on Wetlands entered into force in the Philippines in 1994.

The Philippines hosted a series of Asia-Pacific Economic Cooperation Council (APEC) meetings on sustainable development. These meetings were aimed at advocating wide-ranging concerns and forging APEC-wide consensus on the need for increased economic and technical cooperation on sustainable development. The PCSD, being the country's focal point in sustainable development efforts, was instrumental in forging position papers for international gatherings and dialogues. Among its

commitments is the preparation and coordination of country papers for the annual sessions of the United Nations Commission on Sustainable Development (UNCSD) in New York.

The Philippines sent a delegation to the World Summit on Sustainable Development in Johannesburg, South Africa. The Summit provided a venue not only for negotiations of formal documents pertaining to the UN but also a venue for enrichment of many sectoral groups outside the country.

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