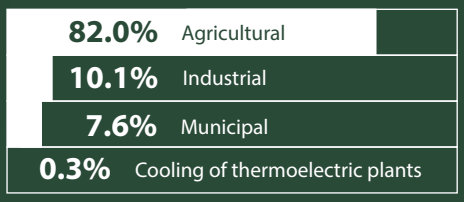
UN WATER

Philippines

UN-Water Country Brief

		year
Total population (UN Population Division)	**96.47** million inhabitants	2012
Total area	**300 000** km²	
Population density	**322** inhabitants/km²	2012
Human Development Index (UNDP) (between 0 and 1; 1 is highest) Country rank (total 186 countries; 1 is highest) Gender Inequality Index (0 is equality between women and men; 1 is least equality)	**0.654** **114** **0.418**	2012
Water, sanitation and hygiene-related deaths % of total deaths (WHO)	**5.5** %	2004
Long-term average annual precipitation (CRU CL 2.0)	**2 348** mm/year	
Long-term average actual renewable water resources (FAO AQUASTAT)	**479 000** million m³/year	
Actual annual renewable water resources per capita (FAO AQUASTAT)	**4 965** m³/inhabitant	2012
% of total actual renewable freshwater resources withdrawn (MDG Water Indicator) (FAO AQUASTAT)	**17** %	2009
Groundwater withdrawal as % of total freshwater withdrawal (FAO AQUASTAT)	**4** %	2009
Total area equipped for irrigation (FAO AQUASTAT)	**1 879 000** ha	2006
% of irrigation potential equipped for irrigation (FAO AQUASTAT and AQUASTAT)	**60** %	2006
Ramsar sites (Ramsar) – number – total area	**5** sites **154 234** hectares	2013

Water withdrawals by sector
(total 81 819 million m³ in 2009)



The Money Stream

From 2002 to 2011, the government has expended US$ 478.65 million (in constant 2010 US$) on average per year on water-related infrastructure and programmes.

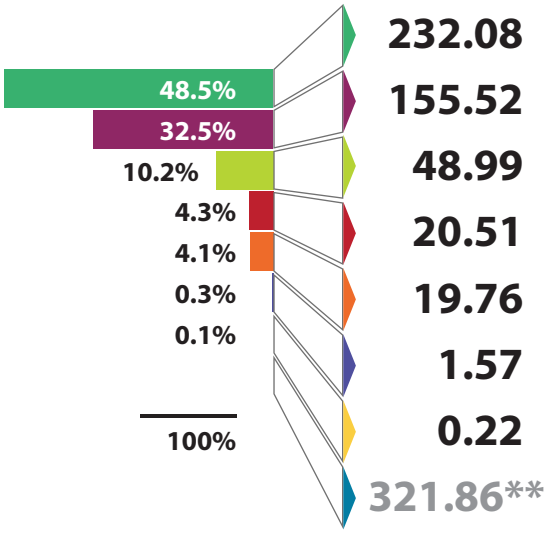
During this period, close to half of the government's expenditure was channeled into agricultural water resources (48.5 percent). Spending priority was then allocated to river development (32.4 percent) and disaster prevention and preparedness and flood prevention and control (10.2 percent).

Official development assistance (ODA) gross disbursements amounted to US$ 81.88 million on average per year channeling close to half of the disbursements into disaster prevention and preparedness and flood prevention and control (48.7 percent). Over the period 2002 to 2011, the Government of the Philippines' water-related investments accounted for an estimated 3.0 percent of total government expenditures.

Estimated % of water-related government expenditure to total government expenditure 2002 - 2011°

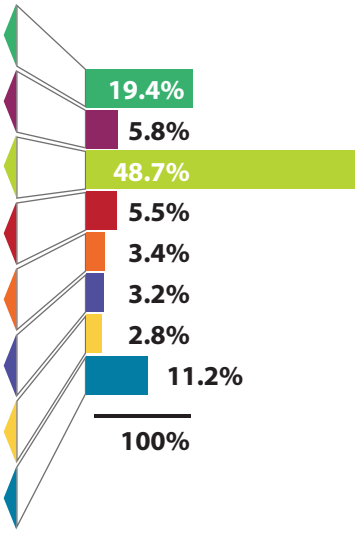
°Total government expenditure excludes ODA. Water-related government expenditure includes some ODA but excludes investments in hydroelectric power plants, which are funded primarily through private sector funds.

Annual average government expenditure during the period 2002 - 2011*
(million constant 2010 US$)



232.08	Agricultural water resources
155.52	River development
48.99	Disaster prevention and preparedness/flood protection and control
20.51	Water supply and sanitation in large systems
19.76	Basic drinking water supply and basic sanitation
1.57	Water resources protection
0.22	Water resources policy and administrative management
321.86**	Hydroelectric power plants
478.65	total annual average

Annual average official development assistance gross disbursements during the period 2002 – 2011
(million constant 2010 US$)



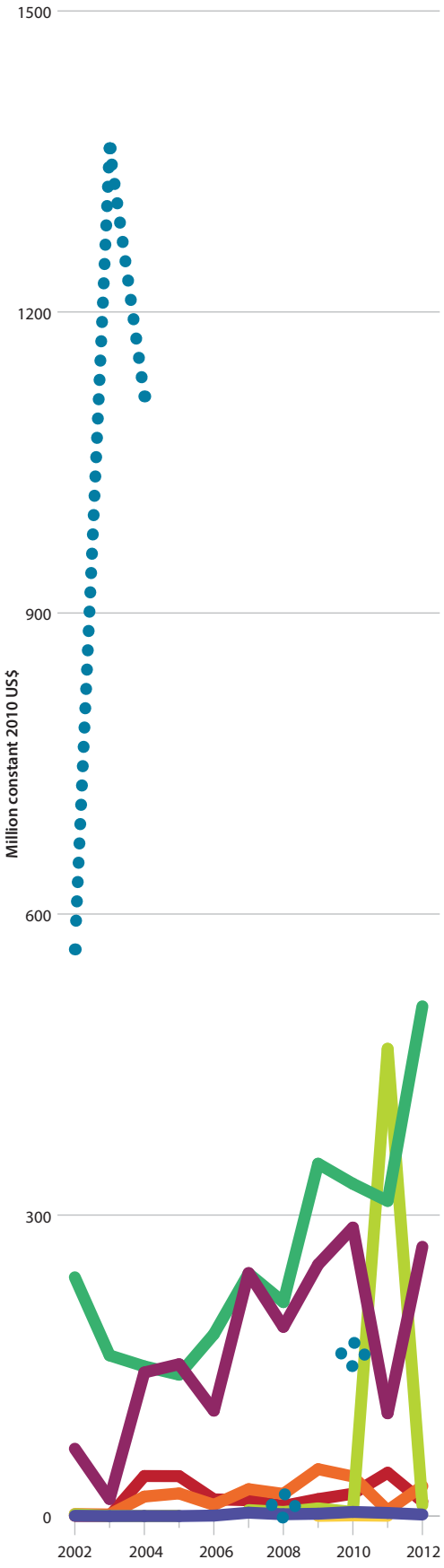
15.88	
4.76	
39.90	
4.47	
2.82	
2.64	
2.26	
9.15	
81.88	total annual average

*Government expenditure includes some Official Development Assistance (ODA). It has not been possible to separate funds from government sources and ODA, as the General Appropriations Act, the law setting the operating budget of the Philippines, combines funds from the national governments and ODA.

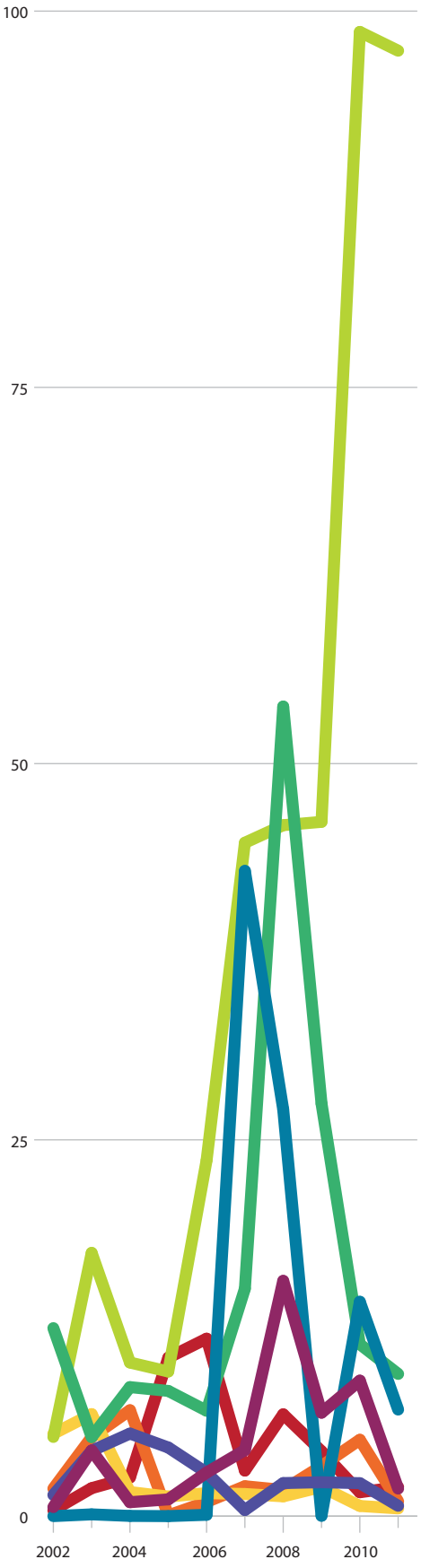
**Hydroelectric power plants are primarily financed through private sector funds.

Status and Trends

Government expenditure during the period 2002 – 2011 and budget for the year 2012*
(million constant 2010 US$)



Official development assistance gross disbursements during the period 2002 - 2011
(million constant 2010 US$)



Government water-related investments over the period 2002 to 2012:**

- There were significant expenditures from 2002 to 2004 in hydroelectric power plants, a period when new hydroelectric power plants were constructed following the Electric Power Industry Reform Act (2001), which enabled private sector funding.
- The sharp increase in disaster prevention and flood protection in 2011 is attributed to a large loan from a multilateral donor agency.
- The bulk of expenditure over this period has been channeled into hydroelectric power, agricultural water resources and river development.
- Expenditure in agricultural water resources has effectively doubled in real terms over this period.

Water-related official development assistance over the period 2002 to 2011:

- From 2006 onwards an emphasis has been placed by one bilateral agency on disaster prevention and preparedness and flood protection and control.
- ODA for agricultural water resources peaked in 2008 and in 2007 for hydroelectric power plants, which account for second and third place in terms of overall ODA flows for this period.

Actual expenditure refers to the amount spent by the government during a given year. Where actual expenditure is not available, the government budget is used and refers to the amount that the government reportedly budgeted for the given year. The OECD Creditor Reporting System categories were chosen for the collection of these water-related investments and the data was obtained by the WCB project through in-country research in cooperation with the government (during 2012), while ODA data stems from the OECD Creditor Reporting System (collected November 2012).

Water supply and sanitation in large systems: Water desalination plants; intakes, storage, treatment, pumping stations, conveyance and distribution systems; sewerage; domestic and industrial wastewater treatment plants.

Basic drinking water supply and basic sanitation: Water supply and sanitation through low-cost technologies such as hand-pumps, spring catchment, gravity-fed systems, rainwater collection, storage tanks, small distribution systems; latrines, small-bore sewers, on-site disposal (septic tanks).

Water resources policy and administrative management: Water sector policy, planning and programmes; water legislation and management; institution capacity building and advice; water supply assessments and studies; groundwater, water quality and watershed studies; hydrogeology. Excluding agricultural water resources.

Disaster prevention and preparedness/Flood protection and control: Disaster risk reduction activities such as developing knowledge, natural risks cartography, legal norms for construction; early warning systems; emergency contingency stocks and contingency planning including preparations for forced displacement. Floods from rivers or the sea; including sea water intrusion control and sea level rise related activities.

Agricultural water resources: Irrigation, reservoirs, hydraulic structures, groundwater exploitation for agricultural use.

Hydroelectric power plants:* Including power-generating river barrages.

Water resources protection: Inland surface waters (rivers, lakes, etc.); conservation and rehabilitation of groundwater; prevention of water contamination from agrochemicals, industrial effluents.

River development: Integrated river basin projects; river flow control; dams and reservoirs. Excluding dams primarily for irrigation and hydropower and activities related to river transport.

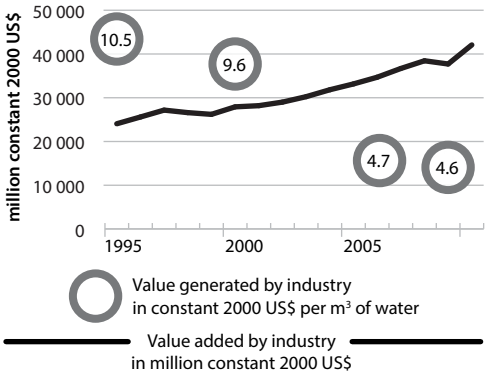
* Hydroelectric power plants are primarily financed through private sector funds (dotted line).

** Government expenditure includes some Official Development Assistance (ODA). It has not been possible to separate funds from government sources and ODA, as the General Appropriations Act, the law setting the operating budget of the Philippines, combines funds from the national governments and ODA.

Water Intensity in Industry

Impact for development
Water is a driver for industry both from the perspective of securing stable supply sources as well as from the standpoint of enhancing operating efficiency. It is also increasingly recognized by businesses as fundamental to the health of its customers, workers and communities.

Value generated by industry per m³ of water
(FAO AQUASTAT, World Bank)

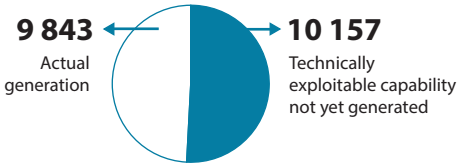


In 2010, based on the National Water Resources Board (NWRB) reports, industrial users represented the second largest user. Fifteen percent of wastewater generated is attributable to industries. From 2000 to 2006, the value generated by industry per m³ of water decreased by almost 12 percent per year, and by 2 percent per year between 1995 and 2000.

Energy for Water, Water for Energy

Impact for development
With an installed capacity of 3 291 MW, the Philippines generated 9 843 GWh in 2008, which represents around 49 percent of the nation's hydropower technically exploitable capability. As water quality deteriorates, more energy is required to treat the supply to acceptable standards. Inversely, energy production requires water in large quantities and produces effluents to be treated. In cognizance of the need to efficiently use both water and energy as a resource, some local governments in the Philippines have adopted innovative technologies that have allowed them to generate savings in energy costs through reuse of reclaimed water, and the generation of soil conditioners for agricultural purposes resulting from wastewater by-products.

Hydropower capacity and generation, 2008, in GWh/year (World Energy Council)



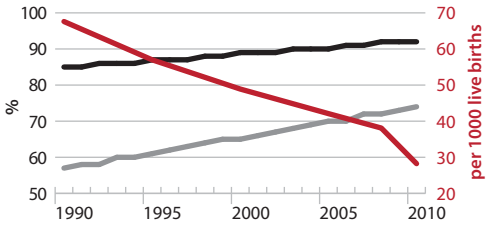
Drinking Water Supply and Sanitation

Impact for development
According to a 2008 Water and Sanitation Program report, the economic costs of poor sanitation in the Philippines are in the order of US$ 1.4 billion, equivalent to about 1.5 percent of GDP in 2005 and translated to per capita losses of US$ 16.8 per year.

Ratification of the International Covenant on Economic, Social and Cultural Rights (ICESCR): 7 June 1974

(The right to water is implicit within the right to an adequate standard of living and inextricably related to the right to the highest attainable standard of health outlined in the ICESCR.)

Access to drinking water and sanitation & under-5 child mortality
(UN Inter-agency Group for Child Mortality Estimation (IGME) and WHO/UNICEF Joint Monitoring Programme)



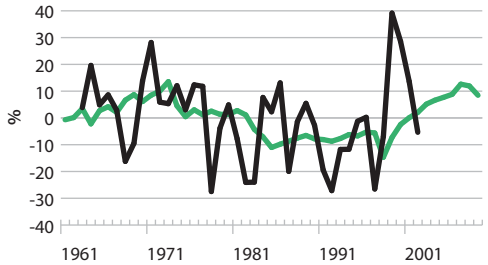
Improved drinking water source
Improved sanitation facilities
(both indicators above in % of total population)
Under 5 child mortality rate
(probability of dying by age 5 per 1000 live births)

Since 1990, the rate of use of an improved drinking water supply source in urban areas has been stable at around 93 percent, while significant improvements have occurred in rural areas, which now have a similar rate of use. While the rate of use of improved sanitation facilities has also improved significantly since 1990, 31 percent of rural residents and 21 percent of urban residents still do not use improved sanitation facilities.

Irrigated Agriculture

Impact for development
Agriculture is a key sector of the Philippines economy, contributing some 12 percent to gross domestic product and employing around 33 percent of the labour force. In 2012, women accounted for 24 percent of the economically active population in agriculture. Since the 1960s, there have been substantial investments in irrigation technology, predominantly to increase the production of rice, which covers 90 percent of the harvested irrigated crop area. Despite this investment, only 60 percent of the irrigation potential has been developed for irrigation, and the government is currently investing further in irrigated agriculture to enhance food security.

Rainfall variability and agricultural GDP
(FAO AQUASTAT, World Bank)

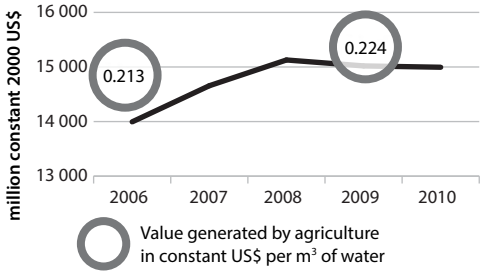


National rainfall index variability
(percentage of deviation from average national rainfall index)

Variability in agricultural GDP
(percentage of deviation from trend of agricultural goods produced per km² of agricultural land)

The value generated by agriculture per m³ of water increased 4.9 percent from 2006 to 2009.

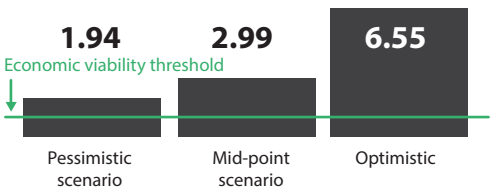
Value generated by agriculture per m³ of water
(FAO AQUASTAT and World Bank)



The investments made in irrigation may in part have shielded the national agricultural output from significant rainfall variability in the Philippines.

The economic viability of new irrigation schemes is highly dependent on the ability to achieve agronomic practice productivity gains in addition to gains directly related to a move from dryland cropping to irrigated cropping.

Economic viability of establishing new irrigation schemes for rice



The figure above shows analysis of expanding irrigation for a dominant crop such as rice for the Philippines. It indicates that the expansion of irrigation is likely to be economically viable, even where relatively high capital and operating costs are assumed. However, the analysis is based on benefits and costs of converting existing cleared agricultural land. Where vegetation clearing and other major land management is required prior to irrigation expansion, development costs will be higher and the ratio of benefit to costs will decline. It should be noted that this analysis does not include any costs associated with negative externalities, such as increased pollution loads into waterway associated with expanded irrigation.

Environment and Ecosystem Health

Impact for development
The annual economic losses caused by water pollution are estimated at PhP 78 billion annually (current 2013 US$ 1 883 million). Losses due to environmental damage in terms of compensation and claims are on the rise in the Philippines. There is considerable under-investment by the government in sanitation and sewerage, indicating a low spending priority, though ranked as a high priority in the Philippines Agenda 21 of 1996.

Water quality index 2010
(UNEP-GEMS/Water)

A score of 100 indicates that water quality targets are met for all five parameters (DO, pH, conductivity, total nitrogen, and total phosphorus).

Estimated municipal wastewater treatment
in 2010 (total produced 3 365 million m^3, of which total collected and treated 441 million m^3)

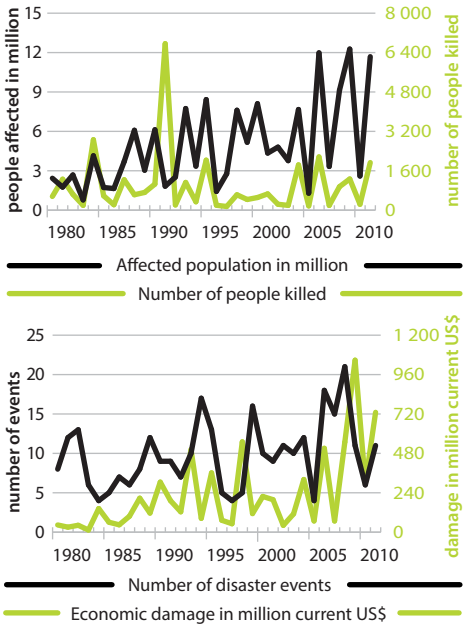
90 %	Primary treatment
7 %	Secondary treatment
3 %	Tertiary treatment

The discharge of municipal and industrial wastewater and agricultural runoff has caused extensive pollution of the receiving water-bodies. Deforestation, limited reforestation activities and the consequent degradation of water-related ecosystem services in particular catchments have resulted in reduced streamflows, decreased volumes of stored water in aquifers and artificial reservoirs, and lower water quality.

Water - related Disasters*

Impact for development
The Philippines is highly exposed to water-related disasters. On average, 10 water-related disaster events occur annually in the Philippines, which on average cause economic damage equivalent to 0.1 percent of the country's current GDP every year. Climate data for the past 50 years has shown increasing temperature, changes in rainfall patterns as well as an increase in extreme weather events such as typhoons, flooding and droughts.

Water-related disasters impacts (NDRRMC)

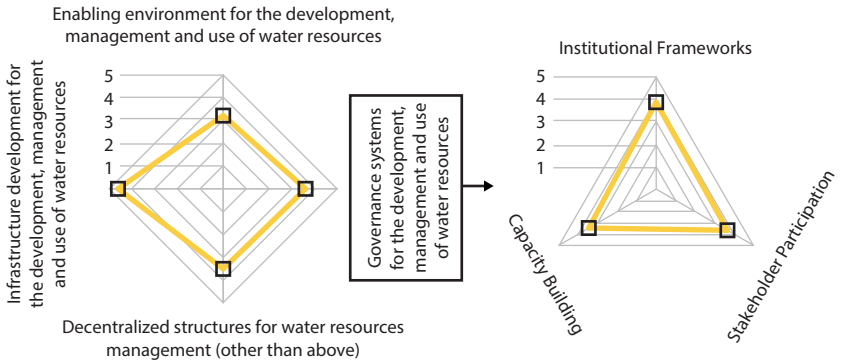


*'Water-related disasters' within the scope of this WCB study do not include droughts.

Tracking Water Governance

Impact for development
The major institutional problem that has beset water management in the Philippines is the multiplicity of agencies and consequent fragmentation of water resources planning and management. There are more than 40 government agencies involved in the water sector. There are no cross-sectoral water resources plans to integrate various water and land use activities, water quantity and quality management or the use of surface water and groundwater. Due to the range of functions relative to the development and management of water resources, some overlaps of responsibility and conflicts reportedly exist among agencies. Fragmented public investment programmes for development and management of water resources, that fail to take into account the interdependencies among users and the impact on other (non-water) economic and non-economic activities, have resulted in the inadequate management of the country's water resources.

UN-Water survey on integrated approaches in the development, management and use of water resources governance, 2012 (UN-Water)



1 Under development
2 Developed but implementation not yet started
3 Implementation started
4 Implementation advanced
5 Fully implemented

Is the right to sanitation/drinking-water explicitly recognized in policy or law?

sanitation		drinking water	
urban	rural	urban	rural
Already fully recognized in law or policy	Already fully recognized in law or policy	Already fully recognized in law or policy	Already fully recognized in law or policy

Can people claim their human right to sanitation or drinking-water in a domestic court?

sanitation		drinking water	
urban	rural	urban	rural
No	No	Yes but little used	Yes but little used

UN-Water GLAAS (WHO, 2012)

The government is currently embarked on creating a National Water Resources Management Office (NWRMO) to act as the central coordinating agency for the water resources sector, responsible mainly for policy-making, managing and regulating the country's waters, based on scientific data. The NWRMO is also to oversee the implementation of integrated water resources management (IWRM) policy and plans.

Rapid Assessment

Overall

Pressures on water

The Philippines is endowed with abundant water resources, but they are under severe pressure from growing populations, rapid urbanization and industrialization that increase the extraction and exploitation and competition with water needed for irrigated agriculture. A large portion of the population is without adequate and sustained access to basic drinking water supply and especially basic sanitation. Inadequate water and wastewater management infrastructure and policies often result in inefficiencies in water use and pollution of waters. Degradation of the environment, and the catchments in particular, also impacts negatively on the availability of water resources. Climate either increases the pressure on the resource during El Niño or causes damage to properties and livelihood in the event of La Niña and extreme storms. A major hindrance to the full adoption and implementation of IWRM in the country has been the institutional fragmentation in the sector.

Investments

Currently, given that developments in the water sector are capital-intensive and that competing demands for limited public sector funds is a prevalent challenge, the country experiences insufficient investment levels to meet the growing demand for water. It is expected that the demand for water resources and the associated investment requirements will continue to grow over the years in parallel with increasing population and socioeconomic improvement. The Philippine Development Plan 2011-2016 calls for additional infrastructure investments in water to be able to sufficiently provide the growing demand for water. Encouraging private sector participation has been given priority to bridge the gap between the extensive capital investment requirements needed to build and operate the required water resources-related infrastructure projects in the country.

Assessments

		Data Quality
Irrigated agriculture	●●●○○	★★★★☆
The current level of investment in irrigation is trending upwards in recent years. 40 percent of the irrigation potential is not equipped for irrigation.		Data is available.
Drinking water supply and sanitation	●●●○○	★★★☆☆
Some 8 percent of the population do not use an improved drinking water source and 26 percent do not use improved sanitation facilities. There is considerable under-investment by the government in sanitation and sewerage, indicating a low spending priority. Estimates show that over a 10-year period, the country will need to invest PhP 250 billion (current 2013 US$ 6 billion) in physical infrastructure.		Limited data on drinking water quality available.
Water intensity in industry	●○○○○	★☆☆☆☆
The value generated by industry per m^3 of water has sharply decreased and industry is the third largest source of water pollution nationwide.		Insufficient information is available about industries' water use.
Water-related disasters	●○○○○	★★★★☆
Gap between rising trends in the number and damage of water-related disasters, and the current level of government investment.		Data is available.
Water for energy, energy for water	●●●○○	★☆☆☆☆
Additional capacity from hydropower sources could be tapped in Mindanao, after a careful consideration of all impacts, to meet demand needs power, which require substantial investments.		There is no data available as to the energy needs of supplying and treating water, nor for the water needed to generate electricity. Therefore no assessment could be undertaken.
Environment and ecosystem health	●○○○○	★★★☆☆
Reduced streamflows, decreased volumes of stored water in aquifers and artificial reservoirs, and lower water quality issues. Substantive gap to fill between wastewater produced and treated. Current level of investment is of concern in this context. Estimates show that over a 10-year period, the country will need to invest PhP 250 billion (current 2013 US$ 5 000 million) in physical infrastructure.		While there is a move to change to a river quality-based monitoring, it is still just a vision that will require considerable effort from many different agencies, both from the private and public sectors.
Tracking governance	●●○○○	★★★☆☆
Fragmentation of water resource planning and management, with over 40 government agencies involved in the sector. Current expenditure on water resources policy, administration and data, alongside fragmented governance systems, pose risks. The government however is in the midst of creating a central coordinating agency.		Lack of up-to-date, harmonized and comprehensive data. Such data is critical in implementing a coordinated water resources management among competing users, among others.

Legend:

The rapid assessment of the situation above, based on available data, was established in conjunction with in-country experts and officials. It provides an overview of trends according to the following:

- ●○○○○ trends are of significant concern
- ●●○○○ trends are of concern
- ●●●○○ trends are stable or, progressing on certain issues but not on others
- ●●●●○ trends show some measure of improvement in all relevant indicators assessed
- ●●●●● trends show significant improvement and there is no concern
- ○○○○○ insufficient data

Accurate assessments of progress require relevant, accurate and timely data. The above data quality assessment ranges from:

★☆☆☆☆ very poor → ★★★★★ very good

Data Concerns

Data is a vital input to water management and investment in water related infrastructure and projects. Data for the Philippines is relatively good when compared to many developing nations. However, the lack of published economic data (e.g. infrastructure costs, operating costs, crop values etc.) in the Philippines makes water-related investment decisions inherently more complex and investments more risky for investors.

An assessment of priority data needs from the basis of national decision-makers and international investors (donors and loan capital) is prudent for countries to establish a forward-looking work programme of data management. Modest investments in coordinated data collection, collation, analysis and dissemination are vital to demonstrate the benefits of water-related investments to governments, donors and ultimately private capital investors.

It is to be noted that it is virtually impossible to find national-level gender-disaggregated data for almost all themes contained in the UN-Water Country Briefs.

This project was implemented by the AQUASTAT Programme of the Food and Agriculture Organization of the United Nations (FAO) on behalf of UN-Water with financial support from United States Department of State (USDS). Brief produced: 13 June 2013

Additional information on the project, data and methodologies can be accessed at:

http://www.unwater.org/WaterCountryBriefs.html

PHILIPPINES

FAO - AQUASTAT, 2011

Disclaimers

- The most recent and updated information can be found in the original databases cited throughout.
- The rapid assessment methodology presented here is an advocacy tool designed to generate debate and attention to the issues, and is developed in conjunction with national government focal points.
- Data presented herein stems either from existing databases or was collected from national reports, experts and institutions, and in some cases raw data underwent various manipulations to categorize the information for this presentation.
- Due to data limitations, the investment-related estimates may not include water-related investments that are counted under other categories of investments, and some investment categories (ie: disaster prevention and preparedness) may include some investments that are not directly water-related. Moreover, water being a crosscutting issue, investments in other parts of the government (not calculated here) may also benefit water management.
- The words investments / invested / funded for ODA refer to gross disbursements of ODA according to the OECD definitions. The words investments / invested / funded for government refer to government expenditure (2002 - 2011) and budget (2012). In the Philippines, it has not been possible to separate funds from government sources and ODA, therefore government investments include some ODA.
- The benefit-cost analysis on expansion of irrigation is based on very limited data and any decisions should be based on detailed cost-benefit analysis that incorporates all relevant local data.