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International Training Network (Philippines)
for Water and Waste Management
Balara, Quezon City

Philippine Water Supply Situation

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THE PHILIPPINE WATER SITUATION

The Supply Side

Current sources of our water supply presently generate 1,025 million cubic meters (Mcm) per day. This fresh water supply comes from two sources: (1) surface water (also called run-off water) such as principal river basins, streams and lakes and (2) ground water. At present, there are 112 major groundwater basins identified nationwide that serve as actual sources of water supply. Of the watersheds, 18 are major sources serving domestic and industrial requirements while 85 are sources of agricultural water supply. An inventory made by the World Resources Institute shows that the Philippines has a potential water supply of 323 billion cubic meters (Bcm) per year.

Sources of water	Current	Potential
Surface water	883 Mcm/day	
Ground water	142 Mcm/day	
TOTAL	1,025 Mcm/day Or 374 Bcm per year	322.2 Bcm/year

Table 1: The supply scenario

From a regional standpoint, the outlook is less optimistic. Even with a mean (available 50% of the time) water supply values, at least one region will be a borderline case by the year 2000. If dependable water supply values are used, Region III may become a distressed area and five other regions (Regions V, VI, VII, XI and XII) may become borderline areas in so far as water supply adequacy is concerned by the year 2000.

The Demand Side

The total demand for water in 1990 was estimated at 287 Mcm per day. At 7.6% p.a. increase, the current demand is placed at 439 Mcm per day.

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Safe Water Coverage

By Region
1986, 1990, 1994

Regions	1986	1990	1994
1	64.91	91.86	91.70
2	63.34	65.96	72.75*
3	83.21	71.66	96.17
4	77.66	80.31	83.30*
5	52.31	82.21	74.17
6	69.49	77.36	83.85
7	74.57	75.59	74.30
8	76.67	81.25	78.70
9	42.31	62.87	76.48
10	75.11	87.64	88.09
11	54.75	80.37	80.90
12	78.74	62.74	73.75
NCR	NA	97.45	94.53
CAR	NA	80.02	84.97
ARMM	NA	NA	74.00
PHIL	69.31	80.10	84.02

**1993 Data*

Source: DOH Report

Sanitary Toilet Coverage

By Region
1986, 1990, 1994

Regions	1986	1990	1994
1	81.00	78.48	84.30
2	81.56	78.66	62.92*
3	71.44	67.83	79.16
4	80.88	66.32	66.67*
5	55.77	60.53	58.12
6	58.67	73.71	81.93
7	80.55	96.20	64.61
8	61.26	64.76	68.27
9	30.48	52.16	66.09
10	57.11	67.71	67.35
11	62.49	68.76	63.53
12	55.27	49.10	56.67
NCR	NA	86.93	80.93
CAR	NA	62.61	58.23
ARMM	NA	NA	63.84
PHIL	66.96	69.51	71.07

**1993 Data*

Source: DOH Report

Potential Demand

Total demand for fresh water by the year 2000 would be about 507 Mcm per day.

Year 1990	Year 2000 Projections
287 Mcm per day or 104 Bcm per year	507 Mcm per day or 185.1 Bcm per year

Table 2: The demand scenario

Demand according to Sector

The demand for fresh water in the Philippines comes from three main sectors: domestic, industry and agriculture.

Sector	1990	2000
Agriculture	249 Mcm (87%)	402 Mcm (76%)
Industrial	23 Mcm (8%)	83 Mcm (16%)
Domestic	15 Mcm (5%)	22 Mcm (8%)
Total	287 Mcm	507 Mcm

Table 3: Sectoral demand

Demand from the agricultural sector constitutes a large share (87%) of the country's water consumption while industrial and domestic consumption retain a small percentage, 8% and 5% respectively. However, while industrialization is being promoted in the country, percentage share of industries to water consumption tend to increase from 8% to 16%. The agricultural sector's share will be less to about 76%. The percentage decrease in the agricultural sector would be absorbed by industry with a small percentage shifted to domestic consumption.

Demand according to Geographical Area

A comparison of available water supply and demand shows that from a country-side point of view, the country's water resources are adequate for meeting the demand projections even up to year 2000. Even without

considering groundwater safe yield, dependable (available 80% of the time) surface runoff alone is more than sufficient for meeting water demand. The dependable water supply/water demand ratio in the year 2000 is 1.6. If the groundwater safe yield is included, this ratio becomes 1.9.

While there is a distinct threat to the availability of an adequate quantity of water for projected needs, of equal importance, if not more so, is the rapidly growing threat on the quality of the country's water supply.

Water Quality

Many of the important rivers and coastal areas are already polluted to a level that warrants immediate attention. Almost half of all water monitoring stations show deterioration beyond even the worst official classification of surface waters. The pollution of these rivers is of urgent concern because these rivers not only supply water for major industries but are also the main sources of drinking water.

Of the 74 designated monitoring stations, 65% showed water quality that has deteriorated beyond the official beneficial use of classification at those stations. Based on limited available information, between 30 to 40 rivers are impacted to a degree that is of critical concern. Even though these rivers represent only 10% of the total number of rivers in the country, these represent the more important rivers which are the major sources of water for domestic and industry use.

The worst water quality is observed in rivers in the Metro Manila area, some of which during the dry season have the same characteristics as raw sewage. The major problem is low dissolved oxygen levels because of untreated discharge of domestic sewage and industrial organic wastes.

Meanwhile, high concentrations of mercury and other by-products of the mining process are found in key rivers located near mining areas in Luzon and Mindanao.

The Department of Environment and Natural Resources has come up with a definition of Philippine water classifications according to beneficial uses. Under DENR's classification, our river basin (200) and coastal areas are generally at

the alarming state. In summary, findings of the 74 water quality monitoring stations set by DENR revealed that:

Description	Status in %
Worse than any potential use	48%
Worse than designated use	16%
At designated use	14%
Better than designated use	22%

Table 5: Quality of water according to beneficial use

Dependability of water sources

Reports show that our forest watersheds are in a state of distress where:

Only 20% of the total land area is dependable due to excessive and unregulated timber cutting;

Available water reservoir is only 80% dependable over the next six years.

This means that the volume of potable water will be less than the estimated 142 Mcm supply of dependable water from dams.

Issues and Concerns

Water quantity

Forecast critical water shortfalls in a number of regions has been noted. Preliminary assessment on available water resources (at 80%) probability shows 3 of 12 water resources regions might experience long-run surface water problems by year 2000 and beyond; the ratio of the available water supply to the projected demand (2000) for Region 3 is less than 1 indicating a serious water stress if the demand is not carefully managed.

Water quality

There is excessive pollution of an increasing number of water bodies such

Fragmentation of responsibility among agencies. There is a need to strengthen the coordination among these agencies in the planning and implementation of projects and programs. Such coordination is vital in the realization of the potential benefits of the projects as well as prevent conflicts in the development and utilization of the same water resource.

Management

Inadequate balancing of supply and demand. A major concern at present is not only water scarcity but more so on rational and better management practices to adopt plans and programs that are realizable with the available water supply. Hence, there is a need for more thorough water resources assessment in the various water resources regions needed in the formulation of a long-term development and management plans.

Financing

Limited public sector resources for investment. There is a need to mobilize private investment through the available modes of privatization schemes in water resources.

Steps Undertaken by the Government

Philippine Water Supply Sector Reform Study to develop policy and implementation options for structural and business related reform of the water sector and to formulate a viable timetable for the implementation of those reforms. Among other recommendations of the study:

- Provision of services should be demand-driven;
- Promote private sector participation in the delivery of water supply, particularly by water districts;
- Minimize government regulation imposed on the water sector;
- Amend regulations to further define the roles and responsibilities of the agencies in the sector and allow LGUs to implement all levels of water supply

NEDA Board Resolution No. 4, s. 1994

- Strengthened the regulatory role of NWRB;
- Reoriented LWUA to its original corporate mission as a specialized lending institution;
- Granted greater independence to water districts from LWUA;
- Pursued the privatization of all existing water districts; and
- Established a greater role for LGUs in the decentralized management of water supply development.

NEDA Board Resolution No. 5, s. 1994

- provided sewerage and sanitation facilities in urbanized areas based on consumer demand and their willingness to pay. The resolution also delegated to the LGUs the primary responsibility of implementing the sanitation and sewerage programs.

Philippine Water Summit 1994

- reconfirmed the Government's intentions to implement NEDA Board Resolutions NO. 4 and No. 5, s. 1994.

Water Crisis Act 1995

- provided the President of the Philippines emergency powers to address urgent issues confronting the WATSAN Sector and special powers to arrange for private sector participation measures in the sector.

Sector Agencies

National Water Resources Board which is responsible for the overall planning, coordination and formulation of framework of policies concerning water supply and water resources. The NWRB is also responsible for issues related to water rights;

Department of the Interior and Local Government which has a responsibility to develop the capability and competency of local government units (LGUs) to provide, manage, operate and maintain water supply projects and to assist LGUs in organizing barangay waterworks and sanitation associations (BWSAs);

Department of Public Works and Highways which has the responsibility for the development of integrated national plans and programs for water supply in accordance with the National Government's development thrusts and policies;

Department of Health which is responsible for environmental and water quality regulation, and supervision of general sanitation activities. Locally, it presides over the installation of toilets and waste water disposal systems, and monitors the quality and safety of water;

Department of Environment and Natural Resources which is responsible for the formulation of policies and guidelines for the enforcement of environmental protection and pollution control regulations. It is primarily responsible for the preservation of watershed areas and the rational and efficient management of water resources;

Local Water Utilities Administration which was established as a specialized lending institution, tasked with the provision of financial and technical assistance to water districts and rural waterworks and sanitation associations. It is required to assist in the development of pipeline systems serving individual household connections (Level 3) and communal faucet systems (Level 2) in provincial cities and municipalities with duly organized WDs and RWSAs;

Metropolitan Waterworks and Sewerage System which is charged with the provision of Level 3 water systems, together with sewerage services in Metro Manila and surrounding areas;

Water Districts which are public water supply utilities established by IV-D outside Metro Manila, independent from local government, responsible for water supply and sewerage development and operation and management in urban areas; and

Local Government Units which operate water supply and sanitation services in urban areas not served by MWSS or WDs

Major Externally Supported Projects

Island Provinces Rural Water Supply Sector Project (812-PH) supported by the Asian Development Bank (ADB) which developed about 6,930 Level 1 facilities in 18 island provinces. About US\$24.0 million in ADB loan funds and P66.82 million in local funds were allocated for the Project.

Second Island Provinces Project (1052-PHI-SF) provides US\$24.0 million in ADB loan to a counterpart budget of P202.45 million. A technical assistance component of US\$50,000 has been allocated for well-drilling, training, water quality and pump installation.

Rural Environmental Sanitation Project supported by the Japan International Cooperation Agency was jointly implemented by the DOH and DPWH. It provided a grant of up to P965 million for the construction of Level 1 and 2 water supply systems.

Rural Water Supply III Project (PHP-75) financed by the Overseas Economic Cooperation Fund (OECF) from 1987-1992. A loan of up to \$1.454 Billion and counterpart funds of 444.5 Million were allocated. A follow-up RWSIV Project was launched to maintain the momentum through 1994 with funds about 5.08 billion with GOP counterpart funds of 400 Million.

Central Visayas Water and Sanitation Project provided by the Australian International Development Assistance Bureau with a grant of A\$14.65 million.

First Water Supply, Sewerage and Sanitation Sector Project with capital funds of US\$58 Million from the World Bank for rural water supply in Luzon provinces and sanitation nationwide. A **Second Provincial Water Supply Project** with US\$40.0 Million funding is currently under preparation.

The UNICEF's **Country Program for Children IV** concentrates assistance to hard-to-reach areas which are usually neglected by government agencies in the delivery of basic services where coverage is low.

Institution-Building for Decentralized Implementation of Community-Managed Water and Sanitation Project or UNDP-PHI Project 93/010 focuses on six priority provinces under the Government's Social Reform Agenda. A total 180 Barangay Water and Sanitation Associations will be established in these provinces.

Sector Funding

The water sector is characterized by underinvestment and less than optimal project implementation. Infrastructure spending for water in the 1987 to 1992 plan period reached only 56.8% of the target.

Over the medium-term, about P81.8 billion in infrastructure spending is envisaged under the Public Investment Program for 1995 to 1998.

DOF Strategies to Improve Sector Funding

Greater reliance on market forces in supply provision

Unleash local government and private sector initiatives in financing water investments

Government support and assistance that will complement not supplant private sector financing in the sector

Cost recovery in the provision of water and sanitation services through appropriate tariff structures

Policy/Strategy Framework On Water Supply and Sanitation

by Secretary Cielito F. Habito
National Economic and Development Authority
Water Summit 1994

GUIDING PRINCIPLES

- a. Water is a finite resource which needs to be actively managed;
- b. Water is a basic human need which should be protected to prevent transmission of water and sanitation related diseases; and
- c. Water is a finite resource which should be treated as an economic commodity.

POLICY

Decentralized, coordinated and efficient management of water resources shall be pursued.

Strategies

- a. A coordinating entity that will formulate policies on water resources development, regulation, utilization and conservation shall be created/strengthened at the shortest time possible. Planning, management and regulation shall be decentralized at the water regions/basinwide levels.
- b. Coordinated data gathering shall be developed among concerned agencies for purposes of developing a comprehensive information system on water resources and sanitation sector.
- c. Increase public awareness on various aspects of water utilization and protection of the environment and hygiene through massive information and education campaigns.
- d. Institutional capacity, including technical capacity, building of LGUs and utility entities at the local level in development planning, and operation and maintenance shall be pursued in a sustainable manner.
- e. Research and development on applicable, indigenously available and appropriate technologies for water resources and sanitation development shall be given utmost priority.
- f. Economic considerations would play a greater role in determining the allocation of water amongst users.

POLICY

- Investments in water resources and sanitation development would be based on demand and local initiative.

Strategies

- Greater participation of LGUs, NGOs and private groups in sector development shall be facilitated. Private sector financing of viable capital expenditure shall be actively promoted through BOT and other related schemes.
- Full cost recovery and sharing shall govern the provision of water and sanitation services based on the end-users demand. However, national government assistance may be extended based on a criteria to be formulated taking into consideration available facilities in the area, local capability/capacity and socio-economic impacts.

POLICY

Environmental protection should be the prime consideration in water resources development.

Strategies

- Management of the resource shall integrate quality and quantity concerns and appropriate environmental charges will be introduced to protect public health and ensure environmental sustainability.
- Provision of improved sewerage and sanitation services shall be integrated in all urban development programs and projects.
- Strict enforcement of environmental laws and regulations shall be strengthened, vigorously pursued and stiffer criminal and administrative penalties shall be adopted for violations.

POLICY STATEMENTS OF FIDEL V. RAMOS

On Water Supply and Sanitation, Health and Environment, People Empowerment and Devolution

Devolution program

We will continue our devolution program to further empower our local government units while demanding from them transparent and accurate accounting of the application of devolved internal revenue allotments which now amount to 40 percent of national government revenue. (January 4, 1995)

I would like to inform you that yesterday, I vetoed the enrolled bill, House Bill No. 331, "An Act Reverting to the National Government the Discharge of Health Functions and Responsibilities Devolved to Certain Local Government Units." The veto was recommended unanimously by an inter-Cabinet Committee consisting of Acting DOH Secretary Jaime Galvez Tan, DBM Secretary Enriquez, DILG Secretary Alunan III, and the various league and local officials. This was based on the following grounds: recentralization, which is what the enrolled bill would want to happen, is contrary to the spirit of the genuine local autonomy and decentralization effort of government; and reversion, which is what the enrolled bill would want to happen is costly, impractical and counterproductive. It has already taken the national government two years to complete the devolution process under the Local Government Code, and to return to where we came from two years ago will certainly take the same period of time - to return the Department of Health back to the centralized posture, including the return of the previously devolved health personnel. (June 14, 1995)

We are taking care of that in the proposed General Appropriations Act. And already, a healthy component of that GAA has been introduced to take care of the immediate needs of the health workers, devolved or otherwise. The sum of P3.3 billion representing 50% of the 1992 cost of devolved national functions, including city-funded hospitals has been deducted and distributed to local government units to match the financial burden which they have absorbed from the national government. The remaining P53.6 million of the P56.925 billion has been allocated and released to local government units following the formula prescribed under the Local Government Code. The solution to this is not really recentralization but redoing the so-called codal formula established in the Local Government Code. And the proposed new formula will be submitted soon as the 10th Congress convenes. And I will be happy to certify that. (June 14, 1995)

Health

Foremost among the basic needs of children is quality health care. This administration is deeply committed to making this service accessible and equitable for everyone through its implementing arm, the Department of Health. We believe that every Filipino deserves the best health care this government can give. It is for this reason that we are trying our best to attain our goal of health for all in the year 2000. It is our primary concern to improve the economy not merely for achieving growth, but to give us a stronger hand in ensuring the social and physical well-being of our citizenry. (May 9, 1995)

People Empowerment

A good education and equal opportunity to compete in this world. And that now is what this Ramos administration is concentrating on - the social and economic empowerment of the people to complement already what have (been) given to the people in terms of political rights under a framework of democracy. (February 23, 1995)

From the very start of my term, I have always been committed to democratization and people empowerment and have made them as cornerstone policies of our government. These policies are anchored upon our profound belief that of all our resources, it is the Filipino people who comprise the most dynamic, most powerful force for our development, once they are given the appropriate opportunities, tools and motivation for growth. (April 10, 1995)

But this is what we Filipinos believe and insist on. We believe that the people must have a voice in the formulation and implementation of public policy that government must listen to them. We believe that in a democracy, the process is just as important as the outcome. This is why we have institutionalized consultations with people's organizations or POs, and non-government organizations or NGOs. On every level - by constitutional mandate, by legislative measures and in practice - government continuously huddles with cooperatives, NGOs, POs, drawing up plans that I hope will benefit our people. Multi-sectoral people's summits are regularly convened by the President to determine the public pulse as inputs to policy. Our Local Government Code gives mechanism for such consultation on the local level. On the national level, we have conducted regular meetings to build acceptance and consensus on key issues such as human rights, law and order, crime prevention, a just and lasting peace with armed dissidents, economic competitiveness, political restructuring and a comprehensive Social Reform Agenda.

Large as these accomplishments may be in terms of national economic performance, I cannot be satisfied with them or as long as the benefits of growth are not shared fairly by those who need these benefits most in our society and I am referring to our farmers and fisherfolks. I will not be satisfied unless there is a narrowing of the gap between the well-to-do minority large number of people who remain poor. That is why our government is taking direct hand in ensuring that our ordinary Filipinos are not shut out in the spreading of benefits because of economic development. And therefore, in addition to our economic growth programs, we have simultaneously embarked on a Social Reform Agenda. And this agenda is an agenda for social justice. It is an agenda for people empowerment. Its pang-mga batas na naaprubahan nitong 50th Congress, they are almost 50-50 in terms of economic recovery and social reform. But all of these are for people empowerment. (June 15, 1995)

Privatization of water servicing agencies

We have similar commitment for more expeditious water supply development. And we have authorized them to go into privatization of whatever can be privatized among their components, units and subsidiaries. (January 4, 1995)

Protection of natural resources

Tungkol po ito sa ating protection of the environment and the wise use of our natural resources - we want to make sure that our watersheds are identified and are protected and our marine resources also are given that degree of protection necessary to make our marine and fish life, our aquatic resources sustainable. (February 13, 1995)

In regard to the wise use of natural resources, we make sure that we do not overburden our few remaining forest and mountain reserves. And so we are now building schoolhouses not from wood anymore, but from metal components. And these are not only easier to do but are quicker to install. And little by little, they are being put in our 9,000 barangays that still do not have any school buildings. And sometimes, when necessary, in very remote areas we use military helicopters to airlift the components of that prefab metal schoolhouse that the program can be accelerated and our young people can be given the basic education that they deserve. (February 13, 1995)

Water conservation

We are instituting water conservation patrols similar to the Enercom Patrol or Power Patrol that we have now which will start at the level of schoolchildren and will count very heavily on the participation of the private sector. (January 25, 1995)

Water crisis resolution

I would welcome the law that would fast track our water supply problem, as well as enhance our water conservation through the country. (January 4, 1995)

I have directed all agencies of the government and the Secretary of the DBM and Mr. Ruben Hernandez, the Administrator of the MWSS, to exert greater effort in the collection of back accounts for water consumed. And there are some unsettled water bills among government agencies, local government units, government-owned and controlled corporations, public schools, universities and other government agencies. Secondly, I have directed Mr. Hernandez to reduce the value and volume of so-called non-revenue water. This is water that is not paid from about 50 percent now to 30 percent by year end. That is a big order. I also certified for immediate enactment of various bills in Congress to alleviate the water problem. Among these are the increase in the capitalization of MWSS and the LWU's outside Metro Manila. And I have also asked the Chairman of the MWSS, Secretary Vigilante of Public Works and Highways, to review the provisions of the Water Code of the Philippines, which was subject of a lot of intensive studies since our water summit one month ago. And I am asking him to submit his proposals based on such a review not later than the middle of March. (January 18, 1995)

I am delighted that Congress passed the Water Crisis Bill, which grants the President emergency powers to act on the worsening water shortage. Its main features include the protection and rehabilitation of denuded watersheds, finding new water sources, and utilizing the B-O-T scheme and its variants to expeditiously interconnect sources, pipelines, and users. For those of you who think that the broad powers given to the Presidency with regard to addressing the water crisis would be abused, I commit to you and to our people that these powers - just like the temporary emergency powers granted to me to overcome the electric power crisis - will be used judiciously and only for the best interest of our people. And this will therefore make available to the common people, good, potable, healthful and sanitary drinking water.

Expressions of International Consensus

"All peoples, whatever their stage of development and their social and economic condition, have the right to have access to drinking water in quantities and of a quality equal to their basic needs."

(United Nations Water Conference, Mar del Plata, 1977)

"Some for all rather than more for some."

(Global Consultation on Safe Water and Sanitation for the 1990s,
New Delhi, 1990)

"...this Plan of Action calls for concerted national action and international cooperation to strive for achievement, in all countries, of the following major goals for the survival, protection and development of children by the year 2000: Universal access to safe drinking water and to sanitary means of excreta disposal..."

(Plan of Action, World Summit for Children, 1990)

"...It is vital to recognize the first basic right of all human beings to have access to clean water and sanitation at an affordable price..."

(Dublin Statement, International Conference on Water and Environment,
Dublin, 1992)

"Safe Water Supply and Environmental Sanitation are vital for protecting the environment, improving health and alleviating poverty. Safe water is also crucial to many traditional and cultural activities."

(Agenda 21, UNCED, Rio de Janeiro, 1992)

"State Parties recognize the right of the child to the enjoyment of the highest attainable standard of health... shall pursue full implementation of this right and, in particular, shall take appropriate measures:

... to combat disease and malnutrition, including within the framework of primary health care, through inter alia, the application of readily available technology and through the provision of adequate nutritious food and clean drinking water, taking into consideration the dangers and risks of environmental pollution;

...to ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge... hygiene and environmental sanitation..."

(Article 24, Convention on the Rights of the Child)

Summary of Lessons Learned

Achieving Universal Coverage

Governments need to focus more specifically on the goal of universal access to water and sanitation and to establish the process for developing, implementing and monitoring action towards these goals.

Governments need to focus more on the promotion, facilitation and coordination services rather than merely on their provision.

Appropriate technologies continue to have a vital role to play.

Greater equity in access to services will accelerate progress towards universal coverage.

NGOs can play a catalytic role as champions of the poor and agents of change.

Promoting sustainability

Community involvement is an essential element of sustainability.

The active involvement and empowerment of women promotes sustainability of services.

Water and environmental sanitation efforts must be linked to social services and other development activities.

Sector programmes must address environmental degradation and pollution.

Sector monitoring and evaluation deserve emphasis.

Maximizing social and health benefits

Greater emphasis on sanitation, hygiene education and social mobilization in support of priorities and goals of the sector are essential.

The interplay of technical, economic, political, environmental and social dimensions of water supply and sanitation programmes must be recognized to design effective programmes.

Effectiveness of resource mobilization and use

Determined actions can reduce costs and improve cost effectiveness.

Prudent cost-sharing and cost-recovery, with due consideration to the ability of the poor to pay, is an instrument for resource mobilization, for promoting sustainability and for improving access by the poor.

Private entrepreneurship should be promoted where potential and opportunity exist.