

# PROPOSED WATER RESOURCES POLICY OF THE PHILIPPINES

**National Hydraulic Research Center,  
University of the Philippines  
Engineering Research and  
Development Foundation Inc.**

**Philippine Council for Aquatic and  
Marine Research and Development  
Department of Science and  
Technology**

Published by  
The National Academy of  
Science and Technology  
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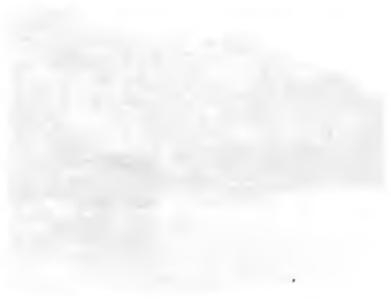


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This policy paper was prepared by the National Hydraulic Research Center of the University of the Philippines Engineering Research and Development Foundation Inc., as commissioned by the Philippine Council for Aquatic and Marine Research and Development (PCAMRD) of the Department of Science and Technology (DOST).

This was reviewed by an Inter-Agency Committee organized by the National Academy of Science and Technology Philippines.



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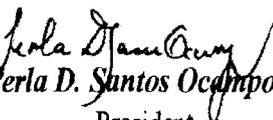
## PREFACE

Water, which is essential to life not only of man but of this entire planet for several centuries has been the subject of interest of many eminent statesmen, writers and scientists including Benjamin Franklin, Mark Twain and Charles Darwin. It is predicted that future wars will be fought over water similar to what is presently happening over oil.

The National Academy of Science and Technology (NAST) Philippines recognizes the importance of a relevant, up-to-date water resources policy. Thus, since 1995, NAST has sponsored or co-sponsored conferences and meetings on water resources management. In March 2003, NAST convened experts and policy makers in reviewing the *Proposed Water Resources Policy of the Philippines* which was prepared by the University of the Philippines National Hydraulic Research Center (UPNHRC) as commissioned by the Philippine Council for Aquatic and Marine Research and Development (PCAMRD) of the Department of Science and Technology.

During the NAST General Assembly meetings on 26 February 2004 and 27 May 2004, NAST members discussed the *Proposed Water Resources Policy of the Philippines*. On the latter date, NAST approved a resolution endorsing the adoption of the *Proposed Water Resources Policy of the Philippines*.

The Academy thanks and congratulates PCAMRD through Executive Director and Academician Rafael D. Guerrero III and the UPNHRC team lead by Professor and Former Director Angel A. Alejandrino for this significant and critical work on the water resources policy of our country.

  
Acad. Perla D. Santos Ocampo, MD  
President

National Academy of Science and Technology Philippines

## **NAST RESOLUTION**

Cognizant of the impending global crisis brought about by population growth, industrialization and pollution of the world's limited supply of freshwater;

Realizing that the conservation and rational management of water resources is vital for sustaining human development and economic growth; and

Recognizing that Integrated Water Resources Management (IWRM) is a holistic approach to maximizing economic and social benefits from water resources without compromising the sustainability of vital environmental systems.

**Now, therefore, be it resolved, as it is resolved that the National Academy of Science and Technology of the Philippines hereby recommends the adoption of the *Proposed Water Resources Policy of the Philippines*.**

Approved May 27, 2004

## ACKNOWLEDGMENTS

The National Academy of Science and Technology Philippines acknowledges with thanks and appreciation the following institutions and individuals for their significant contribution to the preparation of the *Proposed Water Resources Policy of the Philippines*:

- The Philippine Council for Aquatic and Marine Research and Development (PCAMRD) of the Department of Science and Technology
- University of the Philippines National Hydraulic Research Center (UP NHRC)
- Dr. Rafael D. Guerrero III, Academician and PCAMRD Executive Director
- Dr. Angel A. Alejandrino, Professor and former Director of UP NHRC
- Engr. Eduardo V. Manalili, PCAMRD

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Jethro Lee T. Mendoza, sunset at sea, La Union

Evelyn Mae Tecson-Mendoza, upper two photos of Surigao and underground river, Palawan

Department of Tourism, Pagsanjan Falls

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

- ADB – Asian Development Bank  
BOO - Build-Own-Operate  
BOT - Build-Operate-Transfer  
DENR – Department of Environment and Natural Resources  
GWP - Global Water Partnership  
IWRM - Integrated Water Resources Management  
LGU – Local government unit  
LWUA – Local Water Utilities Administration  
MTPDP – Medium Term Philippine Development Plan  
MWSS – Metropolitan Waterworks and Sewerage System  
NAST-National Academy of Science and Technology  
NEDA – National Economic Development Authority  
NWRB – National Water Resources Board  
NWRC – National Water Resources Council  
PCAMRD – Philippine Council for Aquatic and Marine  
Research and Development  
TWG – Technical Working Group  
UN FAO – United Nations Food and Agriculture Organization  
UPERDF-NHRC – University of the Philippines Engineering  
Development Foundation Inc. - National Hydraulic Research  
Center  
WB – World Bank  
WWC – World Water Council

# Background

The importance of a relevant and up-to-date water resources policy of a country cannot be overemphasized as the policy provides the framework for the development and management of its water resources and sets the goals and objectives for water use, protection and conservation. Furthermore, the water resources policy must be integrated into the overall national economic policy and related national sectoral policies.

The present water resources policy was adopted in 1975. This is embodied in Resolution No. 20 Series 1975 of the National Economic Development Authority (NEDA) Board entitled *Establishing Basic Policies Regarding the Control, Conservation, Development and Utilization of the Water Resources of the Country* unanimously adopted on January 20, 1975. Since then, there have been many changes in the country and its resources resulting in the increasing pressures on water, land, and related resources. Although some specific policies have been adopted from time to time, such as: the Water Crisis Act of 1995, NEDA Board Resolutions, NWRB Board Resolutions, Executive Orders, Medium Term Development Plans etc., the basic policies are still those which were adopted 27 years ago. While many of these basic policies are still valid, some need to be reviewed and or revised and new ones added.

Recognizing these, the National Academy of Science and Technology (NAST) Philippines led a series of conferences starting with a forum on the water crisis in 1995 followed by the “International Conference and Exhibition on Water Resources Management” on October 13-16, 1996, co-sponsored with the Department of Science and Technology’s Philippine Council for Aquatic and Marine Research and Development (PCAMRD) and the Philippine Water Works Association (PWWA). The PWWA is a private association of local water districts in the Philippines which are regulated by the Local Water Utilities Administration (LWUA) and the Metropolitan Waterworks and Sewerage System (MWSS).

To address the increasing problems regarding water resources and to review the 1975 water resources policy, PCAMRD commissioned the University of the Philippines Engineering Research and Development Foundation and the National Hydraulic Research Center (NHRC) through Prof. Angel A. Alejandrino to prepare a Water Resources Policy Paper. This study consisted of the following: (a) an extensive review of published and unpublished documents, both from local and from the international community on existing and/or proposed water policies as well as the review of current policy framework and strategies of various agencies of the government concerned with water resources and development; (b) the validation of the preliminary findings of the survey; and (c) analysis and synthesis of the findings.

In January to June 2002, the NHRC crafted a new Water Resources Policy taking into consideration the existing water resources programs of the various agencies of the Philippine government, the other countries in the Asian region, and the international community. During the third quarter of 2002, the draft water resources policy was presented before water resources stakeholders, researchers and policy-makers in at least two forums. These were: (1) the Policy Forum on Water Resources Management sponsored by the Philippine Institute for Developmental Studies (PIDS) and SANREM-USAID held at “NEDA sa Makati” Building on August 12, 2002; and (2) the Workshop on Improving Water Governance sponsored by the Philippine Water Partnership (PWP) held at the Galleria Suites, Mandaluyong City on September 23, 2002. As part of the validation process, the proposed Water Resources Policy was presented to the NEDA Technical Working Group (TWG) on Water Resources for discussion and debate.

The NHRC Final Report on the Proposed Water Resources Policy of the Philippines was turned over formally to PCAMRD during the Water and Fish Summit held in the celebration of the 15th Anniversary of PCAMRD on January 30, 2003.

On March 21, 2003, NAST invited experts and resource persons from the DOST Planning Councils and R&D Institutes, the National Water Resources Board, the National Hydraulic Research Center and other non-government organizations

to a brainstorming meeting to solicit further comments for the improvement of the proposed Water Resources Policy. This monograph of the proposed Water Resources Policy has incorporated the comments and suggestions from various water resources users and stakeholders submitted by the Inter-Agency Committee to NAST.

NAST likewise submitted the proposed policy to the Academy membership for discussion, comments and suggestions. This led to the approval by the NAST general assembly on May 27, 2004 to endorse the *Proposed Water Resources Policy of the Philippines* to concerned agencies.

# INTRODUCTION

1. The water resources policy of a country provides the framework for the development and management of its water resources. The policy sets the goals and objectives for water use, protection and conservation. In order to have an integrated framework for development, the water resources policy must mesh with the overall national economic policy and related national sectoral policies.
2. Water resources development and management affects almost every activity within the wider national economy and society, including migration, land use and settlements, economic growth and industrial activity. In a similar manner, developments outside the water sector should be evaluated for possible impacts on the water resource. The globally recognized approach to reconcile the issues of water, land and the environment, with the concerns of all stakeholders is integrated water resources management (IWRM).
3. In the Philippines, as in many countries, water policies have evolved over a long period of time. When water supplies are abundant and the needs of the people are few, the policies are just as simple. As the population grows, increased competition for water use as well as the increased pollution of water sources becomes significant so that more policy statements are issued. Some tend to be more sophisticated.
4. Policy statements are often found in the various laws passed by the legislature, the executive orders of the President, and in the resolutions and regulations of the implementing agencies. Some are not even articulated but have been accepted because of common practice, tradition, and common sense.
5. The increased pace of development of the country in the early 1970s has made it necessary for government to rationalize the water sector. Among the major acts taken were the articulation of the basic water policies, the codification of all water laws, and the creation of an independent agency to formulate the guidelines

to implement the laws and policies on water resources development and management.

6. The National Economic Development Authority (NEDA) Board unanimously adopted on 20 January 1975, Resolution No. 20 Series 1975, Establishing Basic Policies Regarding the Control, Conservation, Development and Utilization of the Water Resources of the Country. (Annex A)

7. Though, some specific policies have been adopted from time to time, such as: Water Crisis Acts of 1995, NEDA Board Resolutions, NWRB Board Resolutions, Executive Orders, Medium Term Development Plans, etc., the basic policies were adopted some 27 years ago. There have been many changes in the country and its environment. These have resulted in the increasing pressures on water, land and related resources. While many of the basic policies are still valid, some need to be reviewed and/or revised. New ones may have to be added.

8. As an initial step to the review and/or revision of the Water Resources Policy of the Philippines, the Philippine Council for Aquatic and Marine Research & Development (PCAMRD) commissioned the U.P. Engineering Research & Development Foundation, Inc. and the National Hydraulic Research Center (UPERDF-NHRC) to prepare the corresponding Policy Research Paper.

9. This report presents the results of the review as well as the proposed revisions of the basic water resources policy of the Philippines. It includes discussions on the basic principles of water resources development and management, the basic elements of the existing policy, the need for review and revision of the existing policy, the methodology of the study, the basic elements of the proposed basic water policy, and some conclusions and recommendations. These basic elements are: (a) Authority of the State; (b) Private sector participation; (c) Water resources development and management; (d) Stakeholders consultation and participation; (e) Water allocation; (f) Cost recovery; (g) Data, capacity building, research and development; (h) Delivery of water services; and, (i) Implementation.

# **BASIC PRINCIPLES OF WATER RESOURCES DEVELOPMENT AND MANAGEMENT**

10. While the ways of using water may change with time, there are some basic principles in water management that are relatively permanent as some have been decreed and others have been universally accepted. Among these are (a) the ownership of water; (b) the water cycle; (c) integrated water resources management; (d) water as a finite and vulnerable resource; (e) participatory approach to water resources development and management; (f) the role of women; (g) water as an economic good. The last four principles are the “Dublin Principles” that have been universally adopted at the International Conference on Water and the Environment on 26-31 January 1992 in Dublin, Ireland.

11. **Ownership of Water.** The 1986 Constitution provides in Article XII, Section 2 that *“All...waters...and other natural resources are owned by the State...and shall not be alienated. The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State...In cases of water rights for irrigation, water supply, fisheries or industrial uses other than the development of water power, beneficial use may be the measure and limit of the grant...”* Similar provisions were also provided in the 1974 and 1935 Constitutions. Such water policy is also provided in Chapter I and II of the 1976 Philippine Water Code (PD 1067)

12. **Water Cycle.** The hydrologic cycle illustrates how surface water, groundwater and water in the atmosphere are interrelated. As long as the sun shines and provides the needed energy, the hydrologic cycle continues as it is closely linked with the land surface, vegetation, soil, underlying rocks, water bodies and the atmosphere.

13. **Integrated Water Resources Management (IWRM).** IWRM is the globally recognized process that will ensure the sustainable development and management of a country’s water resources. As defined by the Global Water Partnership, which this study has arbitrarily adopted, “IWRM is a process which

aims to ensure the coordinated development and management of water, land and related resources to optimize economic and social welfare without compromising the sustainability of vital environmental systems.”

14. **Water as a Finite and Vulnerable Resource.** *“Fresh water is a finite and vulnerable resource essential to sustain life, development and the environment. Since water sustains life, effective development and management of water resources demands a holistic approach, linking social and economic development with protection of natural ecosystems. Effective development and management links land and water resources across the whole catchment area or groundwater aquifer.*

15. **Participatory Approach.** *“Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels. The participatory approach involves raising awareness of the importance of water among policy-makers and the general public. It means that decisions are taken at the lowest appropriate level, with full public consultation and involvement of users in the planning and implementation of water projects.*

16. **Role of Women.** *“Women play a central role in the provision, management and safeguarding of water. This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women’s specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them.*

17. **Water as an Economic Good.** *“Water has an economic value in all its competing uses and should be recognized as an economic good. Within this principle, it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price. Past failure to recognize the economic value of water has led to wasteful and environmentally damaging uses of the resource. Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources.”*

## **BASIC ELEMENTS OF EXISTING WATER POLICY**

18. The basic elements of the existing water policy may be grouped under the following headings: (a) Authority of the State; (b) Water resources development and management; (c) Water allocation; (d) Cost recovery; (e) Data, capacity building, research and development; and, (f) Implementation of policy. These water policy elements are indicated *in italics* in the following paragraphs together with some comments on their applicability.

19. **Authority of the State.** *The authority and responsibility for the control, conservation, protection, development, and regulation of the utilization of the water resources of the country belong to the State. These water resources include, among others, groundwater, surface water, and water in the atmosphere.*

20. In 1975 when the basic policies were established, the government was highly centralized so that the authority and responsibility of the State were exercised through a national government agency. With the enactment of the Local Government Code of 1991, the policies on decentralization and devolution have been established. The authority of the State on water resources development and management must be correspondingly decentralized and devolved.

21. **Water resources development and management.** *All water resources development projects shall be undertaken on a multi-purpose concept using the river basin, or closely related river basins approach. Single purpose projects shall only be implemented when they are compatible with the multi-purpose concept and can be incorporated into the contemplated basin wide development program.*

22. The concepts of multiple objectives, multiple purposes, and multiple means in the systems context of water resources development and management have since been replaced by the globally accepted concept of integrated water resources management (IWRM). While IWRM for small river basins are both desirable and feasible, the use of a river basin as a spatial unit for considering the strategy for

management of the resources of a country remains an unresolved issue mainly because of the scale involved and the traditional sectoral bases for development.

23. **Water allocation.** *Priorities in the use of water and in the development of water resources shall reflect current usages of water and shall also be responsive to the changing demands for water which occur under developing conditions, taking into consideration the health and welfare of the people.*

24. Under the Water Code, priority in the use of water is based on the prior appropriation doctrine or *first in time, first in use*. When the population of the country was relatively small, most of the water developments were focused on irrigation. The result is that most of the existing senior water rights are for irrigation projects that are also the largest users of water. With the increase in population, there is increasing pressure to develop new water sources that are most often far from population centers and therefore more expensive.

25. There may be a need to revise the existing policy to make it more explicit that water supply for domestic use has the highest priority over all other uses, as is the case in most countries worldwide. The Water Code provides for the highest priority of domestic water supply only during a water shortage from a particular source. Any proposed change in the existing policy on water allocation, however, must take into consideration the priorities of existing water rights granted under the Water Code.

26. **Cost recovery.** *Identifiable beneficiaries of water resources development projects shall bear an equitable share of repayment costs commensurate with the beneficial use derived from the project.*

27. The current practice for cost recovery varies for the different services of water delivered. For hydropower and for urban water supply, services are provided on the basis of recovery of full costs (operation, maintenance, depreciation, investment in enhanced services). In the case of rural water supply and irrigation, only the costs of operation and maintenance are recovered. For flood control and mitigation, the government bears all costs.

28. It is not expected that these practices will change in the near future. The proposed revision in the current policy should reflect these realities.

29. **Data, capacity building, research and development.** *Continuing programs for basic data collection, manpower development, and research shall be maintained since these are indispensable components of water resources development.*

30. Reform in IWRM would require the development of capacity in all its dimensions. This includes not only manpower development but also the strengthening of institutions. In addition to the training of specialists in traditional disciplines like, hydraulic engineering, hydrology, economics, law, ecology, etc., there is also a need for broadly trained professionals or generalists who are able to address the water sector issues across all sectors of the national economy.

31. The first priority in the strengthening of water sector institutions should be directed at the data collection agencies. The annual budget for data collection has been decreasing in real terms. Data stations have not been maintained properly because of the limited budget.

32. Research and development of applicable, appropriate, effective and efficient technologies shall be maintained and given priority.

33. **Implementation.** *The National Water Resources Board (NWRB), formerly called the National Water Resources Council (NWRC) shall formulate the guidelines, procedures, programs, rules, and regulations to implement the policies on water resources.*

34. The NWRB is the apex body that coordinates the activities of all water sector agencies. It is a collegial body composed of the Cabinet Secretaries of Environment and Natural Resources, Socio-Economic Planning, Health, Justice, Finance and the Heads of the National Hydraulic Research Center of U.P. and the NWRB Executive Director acting as head of the Secretariat. The DENR Secretary is the Board Chairman and the Socio-Economic and Planning Secretary as the

Vice-Chairman. The Board meets twice a month to discuss and decide on the various issues on water development and management. The NWRB has a working staff, headed by an Executive Director, that prepares the agenda for the board meetings.

35. After more than 28 years of operation, the organizational structure of NWRB that was considered adequate when there was relative abundance of water needs to be reformed and strengthened because of increasing conflicts and competition in the use of water. Among the areas to be considered in the reform are those on the membership composition of NWRB, its over-centralized operations, and the fragmented regulations in the management of water resources.

## **NEED FOR REVIEW AND REVISION OF EXISTING WATER POLICY**

36. Since its adoption some 27 years ago, there is a need to review and revise the basic water policy in view of the many changes in the country and its environment. Among the areas to be considered are those on (a) decentralization and devolution; (b) private sector participation; (c) integrated water resources management; (d) stakeholders consultation and participation; (e) delivery of services; and, (f) the current practices that are not expected to change in the near future.

37. The Local Government Code of 1991 provides the policies for decentralization and devolution. Chapter 1, Section 2 (a), provides that “It is hereby declared the policy of the State that the territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them more effective partners of national goals. Toward this end, the State shall provide for a more responsive and accountable local government structure instituted through a system of decentralization whereby local government units shall be given more powers, authority, responsibilities, and resources. The process of decentralization shall proceed from the National Government to the local government units.”

38. Considering the huge investment requirements of water resources development projects, the government will increasingly rely on the private sector in the financing, construction, operation, maintenance and rehabilitation of major infrastructures in water where costs will be partly or totally recovered through user charges. It is necessary for the government to provide incentives for private sector investments and to promote market-based incentives to rationalize water utilization. Moreover, the government should provide a regulatory framework that enhances competition and at the same time ensures public welfare, safety and environmental quality.

39. Integrated water resources management (IWRM) is the globally recognized process that will ensure the sustainable management of a country's water resources. The traditional approaches to sectoral development have led to fragmented development and management of water, land, and environmental resources.

40. In order for IWRM to be successful, it is necessary for all stakeholders involved in water use – national government agencies, non-governmental organizations, government-owned and controlled corporations, academic and research institutions, local government units, and the private sector - to join forces, to share information, to understand data, and to solve problems. Stakeholder consultation and participation at all levels in the decision-making process of development and management of water resources shall be encouraged.

41. Policies in the delivery of services – water supply, irrigation, flood control and mitigation, and hydropower – must be established. These policies will set the goals and objectives of the sectoral agencies in developing their respective sectoral programs and projects.

42. The current practices for cost recovery for the delivery of the various services of water must be recognized. It is not expected that these practices will change in the near future. For hydropower and for urban water supply, services are provided on the basis of recovery of full costs (operation, maintenance, depreciation, investment in enhanced services). In the case of rural water supply and irrigation, only the costs of operation and maintenance are recovered. For flood control and mitigation, the government bears all costs.

43. In line with the existing policy on decentralization, the implementation of the water policy must be correspondingly devolved to the lowest appropriate level of the government bureaucracy. A national agency would still be needed, however, to formulate the general guidelines, procedures, programs, rules, and regulations in implementing the water policy.

## METHODOLOGY

44. While many of the principles in water resources development and management are universally accepted, there is no such thing as a “model” water policy. Each country must craft its own policy according to its basic problems, cultural, historical, legal, political and institutional peculiarities, professional and administrative capacity, and other fundamental factors.

45. What can be done in formulating a water policy for the Philippines is to review existing and/or proposed policies in other countries in the region at a similar stage of development and consider those policy elements that may be adapted with some modifications, if needed. Policies of funding institutions may also be considered, as these institutions would be of great help in the development and management of the country’s water resources.

46. The major steps in the study consists of (a) a literature survey of published and unpublished documents, both from local sources as well from the international community, which may be relevant to the water policy of the Philippines; (b) the validation of the preliminary findings of the survey; and (c) the analysis and synthesis of the findings.

47. Sixty two (62) publications and documents related to water resources policies were gathered and listed in the section on **References**. These documents came from the various agencies of the Philippine Government concerned with water resources development and management, other countries in the region, regional agencies and the international community.

48. Among the water policy papers available from countries in South Asia and Southeast Asia are those from Bangladesh, Cambodia, India, Indonesia, Lao PDR, Pakistan, Sri Lanka, and Thailand. Among the publications from the regional and international communities are those from the Asian Development Bank, Global Water Partnership, International Conference on Water and the Environment, UN Food and Agriculture Organization, World Bank, World Water Commission, and World Water Council.

49. The Medium-Term Philippine Development Plan (MTPDP) 2001-2004, prepared and published by the Republic of the Philippines National Economic Development Authority, provided a very rich source of information on the current water policy framework and strategies in the country. The statements in the MTPDP, however, had to be synthesized into the headings of the water policy elements.

50. In as much as not all policies may have been articulated but have been accepted because of common practice, tradition, and common sense, selective visits to some of agencies involved in water resources development were made. The preliminary findings on the attributes of a national water policy based on the literature survey were validated in these visits to ascertain their applicability. Discussions were focused on the concerns and issues unique to the Philippine setting, in general, and to their respective agencies, in particular.

51. As a part of the validation process, the draft final report was presented to the NEDA Technical Working Group (TWG) on Water Resources for discussion and debate. The major task of the TWG is to review the accomplishments in the water sector and to review and/or revise the Medium Term Philippine Development Plan. About 25 agencies of the government and the private sector are represented in the TWG.

52. The format of the water policy as articulated in the different documents varies from the compact and general statements like the Philippines Water Policy to the very elaborate and detailed statements like the Bangladesh Water Policy. The current Philippines Water Policy includes only six general policy elements. This format provides some degree of flexibility in the implementation of the policy without the need for frequent changes in the basic policy.

53. The Bangladesh Policy includes some 18 basic headings, each of which is elaborated by as much as 21 detailed policy statements and strategies. The major advantage of this format is that the agencies that are responsible for the implementation of the policy are provided with definite guidelines with very little room for doubt and/or interpretation as to the intentions of the policy. With very

detailed policy statements and strategies, however, frequent changes may have to be made to respond to the changes in the other priorities of the national economy.

54. The ADB document has a catchy title, “Water for All: The Water Policy of the Asian Development Bank,” with seven basic elements. The document, however, provides elaborate discussions on the background and principles of each of the elements and suggests some 131 policy actions for implementation.

55. The findings based on the review of local and international documents indicate that the water policy elements may be grouped under several headings. These headings are: (a) Authority of the State; (b) Private sector participation; (c) Water resources development and management; (d) Stakeholders consultation and participation; (e) Water allocation; (f) Cost recovery; (g) Data, capacity building, research and development; (h) Delivery of services, and, (i) Implementation.

## **AUTHORITY OF THE STATE**

56. The authority and responsibility of the State for water resources development and management emanates from the State ownership of all waters as provided in Article XII, Section 2 of the 1986 Constitution. With the establishment of the policies of decentralization and devolution through the enactment of the Local Government Code of 1991, the authority and responsibility of the State on water resources development and management must be correspondingly decentralized and devolved.

57. The major objectives of decentralization and devolution are to make governance more effective and efficient, and to foster accountability at all levels of the bureaucracy.

58. Republic Act No. 7160 (Local Government Code of 1991), Book I, Chapter 1, Section 2(a) provides that "It is hereby declared the policy of the State that the territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them more effective partners of national goals. Toward this end, the State shall provide for a more responsive and accountable local government structure instituted through a system of decentralization whereby local government units shall be given more powers, authority, responsibilities, and resources. The process of decentralization shall proceed from the National Government to the local government units."

59. The NEDA has already adopted the policies of decentralization and devolution in crafting the Medium Term Philippine Development Plan (MTPDP) 2001-2004. As one of its strategies, "policies shall be implemented through decentralized operations within a national framework cognizant of the policy of devolution and community-based approaches in water management."

60. The Asian Development (ADB), in its Water Policy, recognizes that “improved governance will be accomplished by promoting decentralization, building capacity, and strengthening monitoring, evaluation, research and learning at all levels, particularly in public sector institutions.”

61. The World Bank, in its policy paper on Water Resources Management, states that, “because of their limited financial and administrative resources, governments need to be selective in the responsibilities they assume for water resources. The principle is that nothing should be done at a higher level of government that can be done at a lower level.”

62. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**A. The authority and responsibility in the control, conservation, protection, development, and regulation of the utilization of the water resources of the country belong to the State. These authority and responsibility shall be decentralized and devolved to the lowest appropriate level of the government bureaucracy. These water resources include, among others, groundwater, surface water, and water in the atmosphere.**

## **PRIVATE SECTOR PARTICIPATION**

63. The government has continuously relied on the participation of the private sector in the development and management of its water resources for a number of reasons, among which are the following: (a) the huge investments involved; (b) the fostering of market-oriented behavior to improve performance and efficiency; and, (c) the promotion of market-based incentives to rationalize water utilization. The parameters for Build-Operate-Transfer (BOT), Build-Own-Operate (BOO), and its many variants for private sector participation, have long been established.

64. Among the measures that the government should take to ensure the success of private sector participation are the establishment of a regulatory framework that (a) enhances competition; (b) provides measures for managing risks of investments; and, (c) ensures service delivery, public welfare, safety and environmental quality.

65. The MTPDP is replete with statements on strategies to “encourage private sector participation in all aspects of water resources management, utilization and development. Towards this end, promotion of market-based incentives to rationalize water utilization will be pursued. Furthermore, incentives for private sector investments on all water resources development initiatives will be provided.”

66. “The government shall increasingly rely on the private sector in the financing, construction, operation, maintenance and rehabilitation of major infrastructure in water where costs will be partly or totally recovered through user charges. The government will provide a regulatory framework that enhances competition and at the same time ensures public welfare, safety and environmental quality.”

67. “The government will focus on policy making and regulation, leaving operations and management mainly to the private sector. In line with this, the

government will concentrate on defining priorities, identifying and preparing core infrastructure projects, creating and enhancing the framework for private sector participation, economic and technical regulation and reengineering the government bureaucracy to perform in the market-led environment."

68. The World Bank in its policy paper states that "privatization of public water service agencies, or their transformation into financially autonomous entities, and the use of management contracts for service delivery will be encouraged. Arrangements for ensuring performance accountability and for putting into place an appropriate regulatory framework to set and enforce environmental protection standards and to prevent inefficient monopoly pricing will be incorporated into Bank-supported activities."

69. The ADB in its policy paper stated that "private sector initiatives and market-oriented behavior are expected to improve performance and efficiency, particularly in service delivery. ADB will seek to provide innovative financial packages to enable commercial lenders and promoters to manage risks involved with investing in water-related projects."

70. With the foregoing considerations, the following are proposed as elements of the Water Resources Policy of the Philippines:

**B. Private sector participation in the financing, construction, operation, maintenance and rehabilitation of infrastructures for water resources management, utilization and development shall be encouraged by providing incentives for private sector investments and promoting market-based incentives to rationalize water utilization.**

**C. In areas where private sector participation have been established, the authority and responsibility of the State in water resources development and management shall focus**

**on policy making and regulation, that includes, defining priorities, identifying and preparing core infrastructure projects, reengineering the government bureaucracy to perform in the market-led environment, providing a regulatory framework that enhances competition, providing measures for managing risks of investments, and ensuring efficient service delivery, public welfare, safety and environmental quality.**

## **WATER RESOURCES DEVELOPMENT AND MANAGEMENT**

71. In spite of its relative abundance, water is becoming the most critical resource in the Philippines. Population growth, economic development, urbanization, and industrialization are causing serious pressures on the water resources of the country. One consequence is an increased competition in the use of water resources for domestic water supply, irrigation, hydropower, etc. Another is an increased pollution of water resources that continues to damage the environment and threaten thousands of lives.

72. Considering the complexity of the water sector where there are a multitude of stakeholders, both within and outside the sector whose goals and objectives are varied, the issues and concerns in water resources and development are just as many and varied. The globally accepted approach to a holistic consideration of all the water problems is integrated water resources management (IWRM).

73. The MTPDP 2001-04 (NEDA, 2001) explicitly states the use of the guiding principles of IWRM that “sustainable development and management of water resources through appropriate policy and legal reforms, particularly in resource exploitation, allocation, prioritization, optimization, protection and conservation shall be pursued. Accordingly, the promotion of an integrated approach that will link social and economic development with environmental concerns shall be emphasized.”

74. The World Bank (1993) in its policy paper encourages “the development of a systematic analytical framework for managing water resources. The framework will be designed so that options for public water management can be evaluated and compared in the context of a national water strategy that incorporates the interdependencies between water and land use. It will enable coherent, consistent policies and regulations to be adopted across sectors.”

75. One of the elements of the ADB 2001 Water Policy is to “foster the integrated management of water resources. To meet the increasing challenges of water scarcity, pollution, and degradation of watersheds and ecosystems, water and related resources need to be managed in an integrated manner. IWRM addresses quantity and quality concerns for surface and groundwater.”

76. While concerns on the environment are included in IWRM, Republic Act 8465 (Agriculture & Fisheries Modernization), explicitly state that “all watersheds that are sources of water for existing and potential irrigable areas and recharge areas for aquifers identified by the Department of Agriculture and the Department of Environment and Natural Resources shall be preserved as such at all times.”

77. The Bangladesh Water Policy has a separate provision on environmental concerns in that “all agencies and departments entrusted with water resources management (regulation, planning, construction, operation and maintenance) will have to enhance environmental amenities and ensure that environmental resources are protected and restored in executing their tasks. Environmental needs and objectives will be treated equally with the water resources management needs.”

78. The MTPDP 2001-04 considers that “gender concerns will be integrated specifically in project development and management activities. Women’s participation therein will be encouraged accordingly.”

79. The ADB will promote the integration of gender concerns in policies, plans, programs, and projects to ensure that water sector activities are gender-responsive at policy and institutional levels.

80. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**D. Sustainable development and management of water resources shall be based on the principles of integrated water resources management (IWRM) that considers water, land, and related resources and activities and optimizes economic benefits and social welfare without compromising the sustainability of vital environmental systems. Gender concerns shall be integrated specifically in project development and management activities and women's participation therein shall be encouraged accordingly.**

## **STAKEHOLDERS CONSULTATION AND PARTICIPATION**

81. The active participation of all stakeholders – the government, the private sector, and the community - at all levels characterizes the new paradigm of IWRM as compared to the traditional approaches of project-oriented and sector-oriented planning, development and management. The concerns and potential conflicts of all users and uses, including the environment, are considered. The allocation of water is rationalized based on social, economic and environmental considerations. Alternative options in development and management as well as trade-offs are analyzed. Planning, development and management of projects are coordinated within the water sector as well with other sectors of the national economy.

82. As early as 1978, the Philippine government has recognized the importance of stakeholder consultation. It has instructed that, “LWUA and the Water Districts shall prepare a comprehensive program and system of public consultation, both formally in hearings and informally through an education program, when considering increases in water rates, particularly at the time when Water Districts initiate operation.”

83. The Philippine Legislature has also enacted laws on stakeholder consultation. The Local Government Code of 1991 states that “it is likewise the policy of the State to require all national agencies and offices to conduct periodic consultations with appropriate local government units, non-governmental and people’s organizations, and other concerned sectors of the community before any project or program is implemented in their respective jurisdictions.”

84. The Agriculture and Fisheries Modernization Act of 1997 stipulates that “the State shall promote people empowerment by enabling all citizens through direct participation or through their duly elected, chosen or designated

representatives the opportunity to participate in policy formulation and decision-making by establishing the appropriate mechanisms and by giving them access to information.”

85. Water policy papers of various countries in the region as well as external assistance agencies all encourage stakeholder consultation and participation. The Bangladesh National Water Policy stipulates that, “stakeholder involvement should be an integral part of water resources management, at all stages of the project cycle. Towards that objective there should be a complete reorientation of the institutions for increasing the role of stakeholders and the civil society in decision-making and implementation of water projects.”

86. The Cambodia National Water Policy stipulates that, “all stakeholders – those with an interest in the outcome – will be encouraged to participate in water resources planning and management. Particular attention will be made to facilitating participation in water resources planning and management by women, the landless, and disadvantaged groups.”

87. “Socially inclusive development principles will be supported by the Asian Development Bank to promote stakeholder consultation and participation at all levels, increase access to basic water services by poor consumers, and enhance water investments in developing member countries through public-private-community-NGO partnerships.”

88. The World Bank will “encourage the participation of beneficiaries and affected parties in planning, designing, implementing, and managing the projects it supports. In environmental assessments, the Bank requires consultation with affected people and local non-governmental organizations, and will additionally promote the participation of concerned people – including the poor, indigenous people, and disadvantaged groups – in water related operations it supports.”

89. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**E. Stakeholder consultation and participation at all levels in the decision-making process of development and management of water resources shall be undertaken.**

## WATER ALLOCATION

90. Priority in the use of water is provided in the Water Code of the Philippines and is based on the prior appropriation doctrine or *first in time, first in use*. In the early stages of the country's development, most of the water developments were focused on irrigation. The result is that most of the existing senior water rights are for irrigation projects that are also the largest users of water. With the increase in population, however, there is increasing pressure to develop new water sources that are most often far from population centers and therefore more expensive.

91. In most countries worldwide, water supply for domestic use has the highest priority over all other uses. The Water Code, however, provides for the highest priority of domestic water supply only during a water shortage from a particular source. "Between two or more appropriators of water from the same source of supply, priority in time of appropriation shall give the better right, except in times of emergency the use of water for domestic and municipal purposes shall have a better right over all other uses; Provided, That where water shortage is recurrent and the appropriator for municipal use has a lower priority in time of appropriation, then it shall be his duty to find an alternative source of supply in accordance with conditions prescribed by the Council."

92. A transitory provision in the Water Code stipulates that "when priority in time of appropriation from a certain source of supply cannot be determined, the order of preference in the use of water shall be as follows: (a) domestic and municipal use, (b) irrigation, (c) power generation, (d) fisheries, (e) livestock raising, (f) industrial use, and (g) other uses."

93. The Bangladesh National Water Policy also has a similar provision during critical periods such that "in general, the priority for allocating water during critical periods in the water shortage zones will be in the following order: domestic and municipal uses, non-consumptive uses (e.g. navigation, fisheries and wildlife),

sustenance of the river regime, consumptive and non-consumptive uses such as irrigation, industry, environment, salinity management, and recreation.”

94. A major challenge in the country is to reallocate water rights among competing uses. Any proposed change in the existing policy on water allocation, however, must take into consideration the priorities of existing water rights granted under the Water Code.

95. The Asian Development Bank will “encourage the developing member countries to adopt participatory and negotiated approaches for water allocation. It will support the evolution of water allocation through markets of transferable water rights once the necessary policy, legal, and institutional framework for IWRM in a river basin context have been put in place. Regulatory agencies will be helped to develop water rights in a manner that protects the rights of the poor to equitable water services.”

96. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**F. Priorities in the use of water shall be in the following order of preference: (a) domestic and municipal use, (b) ecosystem maintenance, (c) irrigation, (d) power generation, (e) fisheries, (f) livestock raising, (g) industrial use, and (h) other uses, provided however, that the priorities in the use of water based on the existing water rights granted under the Water Code shall be respected. In times of water shortage from a given source, the use of water for domestic and municipal purposes shall have a prior right over all other uses.**

## **COST RECOVERY**

97. While water as an economic good is a universally accepted principle, the manner of cost recovery for the delivery of water services varies not only within each country but also worldwide. In the Philippines, the current practice for cost recovery varies for the different services of water delivered. For hydropower and for urban water supply, services are provided on the basis of recovery of full costs (operation, maintenance, depreciation, investment in enhanced services). In the case of rural water supply and irrigation, only the costs of operation and maintenance are recovered. For flood control and mitigation, the government bears all costs. The manner of cost recovery in the country as well as in neighboring countries is indicated the following paragraphs.

98. In the charter of the Metropolitan Waterworks and Sewerage System (MWSS), “the rates and fees fixed by the Board of Trustees for the MWSS and by the local governments for the local systems shall be of such magnitude that the MWSS’s rate of return shall not exceed twelve per centum (12%), on a rate base composed of the sum of its assets in operation as revalued from time to time plus two months’ operating capital.”

99. For water districts under the Local Water Utilities Administration, “the water district, as far as practicable, shall fix such rates and charges for water as will result in revenues which will: (a) provide for reimbursement from all new water customers for the cost of installation of new services and meters; (b) provide for revenue from all water deliveries and services performed by the district; (c) pay the operating expenses of the district; provide for the maintenance and repairs of the works; (e) provide a reasonable surplus for replacement, extension, and improvements; and (f) pay the interest and principal and provide a sinking fund for the payment of debts of the district as they become due and establish a fund for reasonable reserves.”

100. For irrigation in the country, “it is approved and adopted as a National Policy that, in order not to discourage participation of farmer-beneficiaries in the development and operation of irrigation facilities, the government shall bear the costs of all indebtedness for the development of irrigation facilities particularly those areas devoted to the production of rice, corn and food grains and vegetables. The National Irrigation Administration, therefore, shall impose charges to generate revenues sufficient to cover only operating and maintenance costs of such facilities and to recover within a period not longer than 50 years, the monies initially invested in such facilities; provided that such charges shall not impair the user’s incentive to avail of the benefits from irrigation and provided further, that such charges are within the beneficiaries’ capacity to pay. The clarification is made that the monies to be recovered shall be only for irrigation and drainage facilities, and shall not include those invested for power generating facilities, reforestation, roads and flood control or protection works, and that this policy for cost recovery shall likewise be applied to communal irrigation systems constructed by the NIA or its predecessor agencies.”

101. The India National Water Policy stipulates that, “water rates should be such as to convey the scarcity value of the resource to the users and to foster the motivation for economy in water-use.”

102. In the Cambodia National Water Policy, “water services other than for flood control will be provided on the basis of recovery of full costs (operation, maintenance, depreciation, investment in enhanced services). The costs of flood control will be paid from the public purse. Fees and charges will be used only for the management of and investment in the water service for which they were levied.”

103. The Bangladesh National Water Policy stipulates that, “water will be considered an economic resource and priced to convey its scarcity value to all users and provide motivation for its conservation. For the foreseeable future, however, recovery for flood control and drainage projects is not envisaged in this policy. Water charges realized from beneficiaries for O&M in a project would be retained locally for the provision of services within that project.”

104 . With the foregoing considerations and realizing that the current practices are not expected to change in the near future, the following is proposed as an element of the Water Resources Policy of the Philippines:

**G Water services shall be provided on the basis of recovery of full costs (operation, maintenance, depreciation, investment in enhanced services), except for irrigation facilities where the government shall bear the costs of all indebtedness for the development of irrigation facilities, and except for flood control and mitigation where the government shall bear all costs. Water services shall be priced equitably as to convey the scarcity value of the resource to the users and to foster the motivation for economy in water-use. Fees and charges will be used for the management of and investment in the water service for which they were levied, and taxes therefrom shall be used for environmental protection and R&D on water resources management.**

## **DATA, CAPACITY BUILDING, RESEARCH AND DEVELOPMENT**

105. Reform in the development and management of water resources would require the development of capacity in all its dimensions. This includes not only manpower development but also the strengthening of institutions. In addition to the training of specialists in traditional disciplines like, hydraulic engineering, hydrology, economics, law, ecology, etc., there is also a need for broadly trained professionals or generalists who are able to address the water sector issues across all sectors of the national economy.

106. The first priority in the strengthening of water sector institutions should be directed at the data collection agencies. The annual budget for data collection has been decreasing in real terms. Data stations have not been maintained properly because of the limited budget.

107. The importance of continuing programs for water data collection, capacity building, research and development are highlighted in a number of local publications. The Medium Term Philippine Development Plan indicates that, "in the assessment of water resources, a coordinated basic water data collection system for efficient and effective flow of information shall be rationalized and institutionalized. Priority shall be given to research and development of applicable and appropriate technologies for groundwater assessment and water conservation, sanitation and pollution control both in concession areas and resource/watershed sites."

108. The Agriculture and Fisheries Modernization Act stipulates that "irrigation research and development shall be pursued and priority shall be given to the development of effective, appropriate and efficient irrigation and water management technologies.

109. “It is hereby declared the policy of the State to give priority to education and training on science and technology in order to accelerate social progress and promote total human liberation and development.

110. “It is hereby declared the policy of the State to promote science and technology as essential for national development and progress. The State shall likewise give priority to research and development, invention, innovation, and their utilization and to science and technology education, training and services.”

111. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**H. Continuing programs for the water resources sector on basic data collection, capacity building, research and development of applicable, appropriate, effective and efficient technologies shall be maintained and shall be given priority since these are indispensable components of water resources development and management.**

## **DELIVERY OF WATER SERVICES**

112. It is necessary to adopt policy elements in the delivery of services in water supply, sanitation and sewerage, irrigation, flood control and mitigation, and hydropower. These policy elements will set the goals and objectives of the sectoral agencies in developing their respective sectoral programs and projects.

113. Only documents available in the country have been reviewed as these indicate the current policy and strategies in water resources development and management.

### **Water Supply, Sanitation and Sewerage**

114. In the MWSS Charter of 1971, it is stated that “the proper operation and maintenance of waterworks system to insure an uninterrupted and adequate supply and distribution of potable water for domestic and other purposes and the proper operation and maintenance of sewerage systems are essential public services because they are vital to public health and safety. It is therefore a policy of the state that the establishment, operation and maintenance of such systems must be supervised and controlled by the state.”

115. The LWUA Charter states the “the creation, operation and maintenance of reliable and economically viable and sound water supply and wastewater disposal systems for population centers of the Philippines is hereby declared to be an objective of national priority of high priority. For purposes of achieving said objectives, the formulation of independent, locally controlled public water districts is found and declared to be the most feasible and favored institutional structure.”

116. In the Letter of Instructions 683 issued in 1978, it is stated that “the attainment of complete coverage of water supply services for the whole country is a declared policy of the State and shall be effected primarily through (a) the rationalization of the organizational structure for the water supply sector; (b) the

formation of water districts, associations, cooperatives or corporations for the construction, operation and maintenance of water supply systems in preference to systems directly operated and managed by local governments; and (c) the encouragement of self-help and self-reliant water supply systems.”

117. A similar policy statement is included in the Charter of the then Rural Waterworks Development Corporation in 1980 “to pursue in an orderly and vigorous manner the attainment of complete coverage of water supply services for the whole country.”

118. The MTPDP 1999-04 envisions “providing a favorable environment for LGUs in the provision of water supply, sanitation and sewerage.”

119. The strategy in the MTPDP 2001-04 is to “continue to encourage private sector participation of water supply facilities in other urban areas whenever appropriate. Shift emphasis from BOT schemes to privatization of existing assets through concessions and similar arrangement covering raw water supply, treatment and distribution to better address not only the investment but also the O&M aspects.”

120. In the draft of the Water Regulatory Commission Act, “it is hereby declared a policy of the State to pursue and foster, in an orderly, rational, efficient, and vigorous manner, the attainment of complete coverage over the entire country of piped-water supply and sewerage services at reasonable rates and, in this connection, encourage the participation and investment of the private sector, both domestic and foreign, in the provision of piped-water supply and sewerage services. For this purpose, there is a need to establish a single agency of government to be invested with ample powers for the rational and effective economic regulation of all piped-water supply and sewerage systems.”

121. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**I. The attainment of complete coverage of an integrated water supply, sanitation, and sewerage services for the whole country at reasonable rates shall be pursued and fostered in an orderly, rational, efficient, and vigorous manner by providing a favorable environment for waterworks systems, water districts, LGUs and the private sector to enable them to provide such services.**

### **Irrigation**

122. Among the major concerns in irrigation are (a) food security, (b) increase in food productivity through irrigation, and (c) improving the socioeconomic conditions of the farmers. The strategies for addressing these concerns are indicated in the following paragraphs.

123. In the Agriculture and Fisheries Modernization Act, it is stated that “the goals of the national economy are a more equitable distribution of opportunities, income and wealth; a sustained increase in the amount of goods and services produced by the nation for the benefit of the people; and an expanding productivity as the key to raising the quality of life for all, especially the underprivileged.

124. “The State shall promote food security, including sufficiency in our staple food, namely rice and white corn. The production of rice and white corn shall be optimized to meet our local consumption and shall be given adequate support by the State.

125. “It is the policy of the State to use its natural resources rationally and equitably. The State shall prevent the further destruction of watersheds, rehabilitate existing irrigation systems and promote the development of irrigation systems that are effective, affordable, appropriate and efficient. In the choice of location-specific irrigation projects, the economic principle of comparative advantage shall always be adhered to.”

126. The strategy in the MTPDP 1999-04 is to “anchor irrigation development on food security through self-reliance and uplift the socioeconomic conditions of farmers in support of the social agenda program.

127. The MTPDP 2001-04 states that, “primarily, policies and strategies for the irrigation sector will focus on the rehabilitation of existing systems; promotion of the development of irrigation systems that are effective, affordable, appropriate and efficient; and the prevention of further destruction of watersheds.”

128. The foremost objectives of the National Irrigation Administration are “the efficient delivery of excellent service to the farmers and attainment of viability to be more responsive to the challenges in the irrigation sub-sector. Irrigation is expected to contribute to the attainment of food security and accelerate rural development.”

129. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**J. Irrigation development shall be anchored on food security and environmental protection and uplifting the socioeconomic conditions of farmers through the rehabilitation of existing systems and the development of irrigation systems that are effective, affordable, appropriate and efficient. In the choice of location-specific irrigation projects, the principles of environmental protection, particularly the water resource protection and sustainability vis-à-vis the economic comparative advantage shall always be adhered to.**

### **Prevention and Mitigation of Floods and Droughts**

130. There is not much detail in the existing policy and strategies for the mitigation of floods and droughts in the country. In other countries in the region, however, their corresponding policies and strategies include the preparation

of master plans for flood and drought mitigation, the identification of flood risk zones, the degree of flood protection for various areas, the use of structural and non-structural measures, and the motivation for the people to develop different flood proofing measures.

131. The MTPDP 2001-04 indicates that, “the objective under the flood control sub-sector is to promote economic development and poverty reduction through the implementation of several flood control projects. ...In the mitigation of flood damages, two methods are employed, namely, structural and non-structural. ... Mitigate flooding to tolerable levels.”

132. “The policy of the government with regards to flood control and river management is that only the major river basins are under the responsibility of the national government through DPWH.” With the decentralization in the government bureaucracy, it appears that the LGUs are responsible for flood control and mitigation in their respective areas.

133. In the Bangladesh Water Policy, “the Government will designate flood risk zones and take appropriate measures to provide desirable levels of protection for life, property, vital infrastructure, agriculture and wetlands.... Regions of economic importance such as metropolitan areas, sea and airports, and export processing zone will be fully protected against floods as a matter of first priority. Other critical areas will be gradually provided reasonable degree of protection against flood. In the remaining rural areas, the people will be motivated to develop different flood proofing measures such as raising platforms for homesteads, market places, educational institutions, community centers, etc., and adjusting the cropping pattern to suit the flood regime... In the future, all national and regional highways, railway tracks, and public buildings and facilities will be constructed above the highest ever recorded level of in the country.”

134. The India Water Policy states that, “there should be a master plan for flood control and management for each flood prone basin.... While physical flood protection works like embankments and dykes will continue to be necessary, the emphasis should be on non-structural measures for the minimization of losses,

such as flood forecasting and warning and flood plain zoning, so as to reduce the recurring expenditure on flood relief.”

135. In the Cambodia Water Policy, “the Government will ensure that all people and institutions at risk will receive early warnings of droughts, floods and storms.... Phnom Penh and other localities in which there are very high concentrations of people and/or economic assets will be fully protected against flooding... Other urban and industrial centers with lesser concentrations of people and economic assets will be provided with levels of protection that are economically justifiable... All people and institutions will be encouraged and enabled, by means such as education and demonstration of technology, to adopt flood mitigation measures appropriate to their circumstances.... All public facilities will be constructed above the estimated 100-year flood level in the particular locality, and will provide unimpeded drainage.

136. The Thailand Water Policy provides for an “acceleration of the preparation of plans for flood and drought protections, including warning, damage control and rehabilitation efficiently and equitably with proper utilization of land and other natural resources.”

137. The Indonesia Water Policy, the intention is “to complement existing flood control programs with zoning of flood plains and disaster preparedness in connection with Spatial Land-use Plans.”

138. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

**K. Prevention and mitigation measures for floods and droughts shall consider the overall effects on the national economy and on reducing poverty through the implementation of integrated and holistic structural and non-structural measures.**

## **Hydropower**

139. The general strategy in the development of energy sources in the country, as indicated in the MTPDP, is to diversify sources and types of local and imported energy while ensuring balance between cost and supply security.

140. It may be noted that while the installed capacity of all hydropower plants is about 17% of the total installed capacity of all power generating plants, the share of hydro is only about 4% of equivalent energy generation. This is consistent with the operating policy of using the hydro plants for peaking purposes.

141. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

- L. The development of hydropower plants shall consider (a) the developments of other sources of energy to arrive at an optimum mix of power generating plants that ensures a balance of cost and power supply security, and (b) the development and rehabilitation of infrastructures for irrigation, water supply, and flood mitigation, which are the usual components of storage dams for hydropower.**

## IMPLEMENTATION

142. In line with the existing policy on decentralization, the implementation of the water policy must be correspondingly devolved to the lowest appropriate level of the government bureaucracy. A national agency would still be needed, however, to formulate the general guidelines, procedures, programs, rules, and regulations in implementing the water policy.

143. One of the proposals in the forthcoming National Water Conference is the institution of reforms in the National Water Resources Board (NWRB). Among the issues that are being considered are the reconstitution of the NWRB membership, the decentralization of its functions, and its role in resource regulation. The basic function of NWRB, however, as the apex body in the water sector for the coordination and integration of water development and management activities will not change.

144. With the foregoing considerations, the following is proposed as an element of the Water Resources Policy of the Philippines:

- M. The National Water Resources Board (NWRB) shall formulate the general guidelines, procedures, programs, rules, and regulations for implementing the revised Water Resources Policy of the Philippines and shall decentralize the implementation of the policy to the appropriate level of the government bureaucracy.**

## CONCLUSIONS AND RECOMMENDATIONS

145. The formulation of a national water resources policy is the basic activity that provides the framework for the development and management of the country's water resources. All the goals and objectives of all agencies involved in water resources development and management are set in accordance with the national policy. The water policy, however, must mesh with the overall national economic and related national sectoral policies in order to have an integrated framework for development.

146. Since its adoption some 27 years ago, there is a need to revise the basic water policy in view of the many changes in the country and its environment. Among the areas to be considered are those on (a) decentralization and devolution; (b) private sector participation; (c) integrated water resources management; (d) stakeholders consultation and participation; (e) delivery of services; and, (f) the current practices that are not expected to change in the near future.

147. While many of the principles in water resources development and management are universally accepted, there is no such thing as a "model" water policy. Each country must craft its own policy according to its basic problems, cultural, historical, legal, political and institutional peculiarities, professional and administrative capacity, and other fundamental factors.

148. What can be done in formulating a water policy for the Philippines is to review existing and/or proposed policies in other countries in the region at a similar stage of development and consider those policy elements that may be adapted with some modifications, if needed. Policies of funding institutions may also be considered, as these institutions would be of great help in the development and management of the country's water resources.

149. This was one of strategies adopted in preparing this policy research paper. The water policy papers reviewed are those from Bangladesh, Cambodia, India, Indonesia, Lao PDR, Pakistan, Sri Lanka, and Thailand as well as the policies of the Asian Development Bank and the World Bank.

150. The other strategy was to review the current policy framework and strategies of the various agencies of the government concerned with water resources and development together with the corresponding laws related to water. On the basis of these two strategies, the policy elements of the water policy were crafted.

151. **It is recommended that the *Proposed Water Resources Policy of the Philippines* (as summarized and shown below) be adopted through a NEDA Board Resolution, similar to the existing policy (Annex A).** This format provides some degree of flexibility in the implementation of the policy without the need for frequent changes.

152. Prior to submitting the proposal to the NEDA Board, however, it is recommended that the Policy Research Paper be subjected to further discussion and debate among as wide a representation of all stakeholders as possible. After all, stakeholder consultation and participation are the foundations for the sustainable development and management of the country's water resources.

**Republic of the Philippines**  
**NATIONAL ECONOMIC DEVELOPMENT AUTHORITY**  
**NEDA Board Resolution No. \_\_\_\_, Series 2002**

**ESTABLISHING THE WATER RESOURCES POLICY OF THE  
PHILIPPINES**

WHEREAS, water is vital to national development and security;

WHEREAS, the Philippines has finite water resources that need to be rationally conserved and managed for present and future generations;

WHEREAS, the Water Code of the Philippines (PD 1067), the basic water law of the country, enacted in 1976, needs to be revised in view of the changes in the country and its environment;

WHEREAS, the traditional approaches to sectoral development that have led to fragmented development and management of water resources need to be reviewed and revised for ensuring sustainable development of the country's water resources;

WHEREAS, the Philippine Clean Water Act of 2004 (RA 9275) has provided for an integrated national water quality management framework; and

WHEREAS, integrated water resources management (IWRM) is the globally recognized process that reconciles the issues of water, land and environment with the concerns of all stakeholders.

NOW, THEREFORE, be it resolved, to adopt the *Water Resources Policy of the Philippines* with the following principal elements:

### **Authority of the State**

1. The authority and responsibility in the control, conservation, protection, development, and regulation of the utilization of the water resources of the country belong to the State. These authority and responsibility shall be decentralized and devolved to the lowest appropriate level of the government bureaucracy. These water resources include, among others, groundwater, surface water, and water in the atmosphere.

### **Private Sector Participation**

2. Private sector participation in the financing, construction, operation, maintenance and rehabilitation of infrastructures for water resources management, utilization and development shall be encouraged by providing incentives for private sector investments and promoting market-based incentives to rationalize water utilization.
3. In areas where private sector participation have been established, the authority and responsibility of the State in water resources development and management shall focus on policy making and regulation, that includes, defining priorities, identifying and preparing core infrastructure projects, reengineering the government bureaucracy to perform in the market-led environment, providing a regulatory framework that enhances competition, providing measures for managing risks of investments, and ensuring service delivery, public welfare, safety and environmental quality.

### **Water Resources Development and Management**

4. Sustainable development and management of water resources shall be based on the principles of integrated water resources management (IWRM) that considers water, land, and related resources and optimizes economic benefits and social welfare without compromising the

sustainability of vital environmental systems. Gender concerns shall be integrated specifically in project development and management activities and women's participation therein shall be encouraged accordingly.

### **Stakeholders Consultation and Participation**

5. Stakeholder consultation and participation at all levels in the decision-making process of development and management of water resources shall be undertaken.

### **Water Allocation**

6. Priorities in the use of water shall be in the following order of preference: (a) domestic and municipal use, (b) ecosystem maintenance, (c) irrigation, (d) power generation, (e) fisheries, (f) livestock raising, (g) industrial use, and (h) other uses, provided however, that the priorities in the use of water based on the existing water rights granted under the Water Code shall be respected. In times of water shortage from a given source, the use of water for domestic and municipal purposes shall have a better right over all other uses.

### **Cost Recovery**

7. Water services shall be provided on the basis of recovery of full costs (operation, maintenance, depreciation, investment in enhanced services), except for irrigation facilities where the government shall bear the costs of all indebtedness for the development of irrigation facilities, and except for flood control and mitigation where the government shall bear all costs. Water services shall be priced as to convey the scarcity value of the resource to the users and to foster the motivation for economy in water-use. Fees and charges will be used only for the management of and investment in the water service for which they were levied.

## **Data, Capacity Building, Research and Development**

8. Continuing programs for the water resources sector on basic data collection, capacity building, research and development of applicable appropriate, effective and efficient technologies shall be maintained and shall be given priority since these are indispensable components of water resources development and management.

## **Delivery of Services**

9. The attainment of complete coverage of water supply, sanitation, and sewerage services for the whole country at reasonable rates shall be pursued and fostered in an orderly, rational, efficient, and vigorous manner by providing a favorable environment for waterworks systems water districts, LGUs and the private sector to enable them to provide such services.
10. Irrigation development shall be anchored on food security and uplifting the socioeconomic conditions of farmers through the rehabilitation of existing systems and the development of irrigation systems that are effective, affordable, appropriate and efficient. In the choice of location-specific irrigation projects, the economic principle of comparative advantage shall always be adhered to.
11. Mitigating measures for floods and droughts shall consider the effects on the national economy and on reducing poverty through the implementation of structural and non-structural measures.
12. The development of hydropower plants shall consider (a) the developments of other sources of energy to arrive at an optimum mix of power generating plants that ensures a balance of cost and power

supply security, and (b) the developments for irrigation, water supply, and flood mitigation, that are the usual components of storage dams for hydropower.

### **Implementation**

13. The National Water Resources Board (NWRB) shall formulate the general guidelines, procedures, programs, rules, and regulations for implementing the Water Resources Policy of the Philippines and shall decentralize the implementation of the policy to the appropriate level of the government bureaucracy.

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**Republic of the Philippines  
NATIONAL ECONOMIC DEVELOPMENT AUTHORITY  
NEDA Board Resolution No. 20, Series 1975**

**ESTABLISHING BASIC POLICIES REGARDING THE CONTROL,  
CONSERVATION, DEVELOPMENT AND UTILIZATION OF THE  
WATER RESOURCES OF THE COUNTRY**

WHEREAS, the Constitution has ordained that all waters belong to the State;

WHEREAS, as part of the National Patrimony, water resources must be so administered as to insure the availability in perpetuity of water to our people;

WHEREAS, it is in the national interest that the State, through its regulatory power, optimizes the utilization of its water resources to enhance the progress of the country and the general well-being of its people; and

WHEREAS, to attain the objectives it is necessary to establish certain basic policies regarding the control, conservation, development and utilization of the country's water resources;

NOW, THEREFORE, be it resolved, as it is hereby resolved, to adopt, as they are hereby adopted, the following policies regarding the control, conservation, development and utilization of the water resources of the country:

1. The authority and responsibility for the control, conservation, protection, development, and regulation of the utilization of the water resources of the country belong to the State. These water resources include,

among others, groundwater, surface water, and water resources in the atmosphere.

2. Priorities in the use of water and in the development of water resources shall reflect current usage of water and shall also be responsive to the changing demands for water which occur under developing conditions, taking into consideration the health and welfare of the people.

3. All water resources development projects shall be undertaken on a multi-purpose concept using the river basin, or closely related river basins approach. Single-purpose projects shall only be implemented when they are compatible with the multi-purpose concept and can be incorporated into the contemplated basin wide development program.

4. Identifiable beneficiaries of water resources development projects shall bear an equitable share of the repayment costs commensurate with the beneficial use derived from the project.

5. Continuing program for basic data collection, manpower development and research shall be maintained since these are indispensable components of water resources development.

The National Water Resources Council shall formulate the guidelines, procedures, programs, rules, and regulations to implement the policies on water resources.

*(Unanimously Approved by the NEDA Board on January 20, 1975)*

## ***ABOUT NAST***

The National Academy of Science and Technology (NAST) Philippines is the country's highest advisory body to the government and the science community on matters related to science and technology. It also has the mandate to recognize outstanding achievements in science and technology made by Filipino scientist in all fields of science.

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