Republic of the Philippines
Department of Environment and Natural Resources
Visayas Avenue, Diliman, Quezon City 1116
Tel Nos. 9296626 to 29 ; 9296633 to 35
Website http:// Emailweb@denrgov.ph

MEMORANDUM

FOR : **THE REGIONAL EXECUTIVE DIRECTOR**
Regions 1-8, NCR and CAR

THE DIRECTOR
Environmental Management Bureau

THE REGIONAL DIRECTORS
Environmental Management Bureau

FROM : **THE CHIEF OF STAFF**
Office of the Undersecretary for Field Operations Luzon, Visayas and Environment

SUBJECT : **ON-GOING DRAFTING OF THE PHILIPPINE DEVELOPMENT PLAN (PDP) 2023-2028**

DATE : NOV 07 2022

This refers to the Memorandum dated 25 October 2022 from DENR Undersecretary Analiza Rebuelta-Teh regarding the abovementioned subject.

Relative thereto, please refer to the links below for the copy of the PDP 2023-2018 and other related documents:

Recording of the October 21, 2022 meeting with NEDA	https://bit.ly/3D7obFy
Preliminary comments and recommendations	https://bit.ly/3srEU14
PDP 2023-2028 Chapter Frameworks	https://bit.ly/3zf4IRV

For information.

ATTY. RICKY A. ARZADON, *CESO IV*

c.c.
Office of the Undersecretary for
Finance, Information Systems and Climate Change

MEMO NO. 2022 - 778

Republic of the Philippines
Department of Environment and Natural Resources
Visayas Avenue, Diliman, Quezon City
Tel Nos. 929-6626 to 29; 929-6633 to 35
929-7041 to 43; 929-6252; 929-1669
Website: http://www.denr.gov.ph / E-mail: web@denr.gov.ph

PRIORITY

MEMORANDUM

FOR/TO : **The Undersecretaries**
Policy, Planning and International Affairs
Field Operations and Environment

The Directors
Biodiversity Management Bureau
Environmental Management Bureau
Ecosystems Research and Development Bureau
Forest Management Bureau
Land Management Bureau
Mines and Geosciences Bureau

The Executive Directors
National Water Resources Board
River Basin Control Office
Manila Bay Coordinating Office
Pasig River Coordination and Management Office

The General Manager
Laguna Lake Development Authority

The Administrator
National Mapping and Resource Information Authority

The Service Directors
Climate Change Service
Planning and Policy Service

FROM : **The Undersecretary**
Finance, Information Systems and Climate Change

SUBJECT : **ONGOING DRAFTING OF THE PHILIPPINE DEVELOPMENT PLAN 2023-2028 [Subchapter on Water under Chapter 13[1]]**

DATE : 25 October 2022

Further to Memorandum No 2022-746 dated 24 October 2022, appended is the Subchapter on Water 1st Draft with a copy of the presentation during the Inter Planning Committee Meeting on 12 October 2022. Please provide your comments and recommendations for said subchapter on Water under Chapter 13: Expand and Upgrade Infrastructure and submit to the Office of the undersigned at ccs@denr.gov.ph cc: cdrbasug@denr.gov.ph and rscortega@denr.gov.ph on or before 27 October 2022 in line with NEDA's writeshop on 26-28 October 2022.

For appropriate and immediate action.

ATTY. ANALIZA REBUELTA-TEH

[1] Chapter 13: Expand and Upgrade Infrastructure

Republic of the Philippines
Department of Environment and Natural Resources
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MEMORANDUM

FOR/TO : **The Undersecretaries**
Policy, Planning and International Affairs
Field Operations and Environment

The Directors
Biodiversity Management Bureau
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The Executive Directors
National Water Resources Board
River Basin Control Office
Manila Bay Coordinating Office

The Administrator
National Mapping Resource and Information Authority

The Service Directors
Climate Change Service
Planning and Policy Service

FROM : **The Undersecretary**
Finance, Information Systems and Climate Change

SUBJECT : **ONGOING DRAFTING OF THE PHILIPPINE DEVELOPMENT PLAN 2023-2028**

DATE : 24 October 2022

This refers to the ongoing drafting of the Philippine Development Plan (PDP) 2023-2028. As your Office is being consulted directly by NEDA, we are providing you herewith a copy of the draft frameworks of the PDP 2023-2028 chapters.

On 21 October 2022, a meeting with NEDA was held to discuss DENR's preliminary comments on the development of selected write-ups. We would like to provide you with a copy of the recorded meeting and the DENR's written comments and recommendations on the following selected chapters for information and reference:

1. Chapter 2: Global and Regional Trends
2. Chapter 4.3: Establishing Livable Communities
3. Chapter 17: Accelerate Climate Action and Strengthen Disaster Resilience

You may refer to the links below for the said documents:

Recording of the October 21, 2022 meeting with NEDA	https://bit.ly/3D7obFv
Preliminary comments and recommendations	https://bit.ly/3srEU14
PDP 2023-2028 Chapter Frameworks	https://bit.ly/3zf4IRV

[Memo No. 2022-746]

Please thoroughly review the initial outputs and provide comments/suggestions on any of the draft frameworks particularly on chapters with ENR concerns such as 4.3, 13 (Expand and Upgrade Infrastructure Subchapter: Water), and 17 and submit to the Office of the undersigned at ccs@denr.gov.ph cc: edrbasug@denr.gov.ph and rscortega@denr.gov.ph on or before 26 October 2022 in anticipation of NEDA's writeshop on 26-28 October 2022.

For appropriate action.

ATTY. ANALIZA REBUELTA-TEH

REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY

Formulation of the Philippine Development Plan 2023-2028

Inter- Planning Committee Meeting

Chapter 13: Expand and Upgrade Infrastructure
Subchapter: Water

Guillermo Q. Tabios III

12 October 2022 | Chardonnay by Astoria, Pasig City

Assessment

- ***Water Supply:*** About 90% percent of country's population source water from groundwater but this is susceptible to contamination.
- ***Irrigation Water Delivery:*** The bulk of irrigation water is utilized by 1.6M ha (out of 3M ha potential areas) of rice farms through national irrigation systems. Irrigation water used for the 1.6M ha is about 67B cum versus only about 44B cum used in other Asian countries.
- ***Floods and Flood Risk:*** The Philippines being in a humid tropic setting, is devasted by typhoons, monsoons, ITCZ and severe thunderstorms.
- ***Water Quality Maintenance and Pollution Control:*** With rapid urbanization and industrialization, compounded by inadequate drainage, domestic waste account for almost 48% of water pollution, 37% from agricultural waste and 15% from industrial waste.
- ***Other Issues/Concerns:*** Water Governance, Water Sanitation and Waste Disposal, State of Water Bodies and Watersheds, Land-Water-Coastal Resources Interactions

Strategy Framework

1. Effective water governance with IWRM (i.e., integrated planning and management of land, water and coastal resources including water-related hazards)
2. Protect land, water and coastal resources for water security and ecological integrity
3. Efficient water allocation and utilization especially with competing water uses
4. Effective flood management (with sediment control) and drought mitigation
5. Protect life and property from water and coastal hazards including dam-related hazards
6. Proper maintenance and enhancement of surface and ground water quality
7. Ensure good water quality and sanitation including proper sewerage

Legislative/Legal Instrument	Management Strategy	Institutional Role
• **Department of Water Resources** (a water APEX body) together • **Water** (Supply & Sanitation) **Regulatory Commission** • **National Dam Safety Commission**	• **Data monitoring and continuous scientific studies** (analysis and scenario simulations) • Develop **decision support tools** based on digital ecosystem framework • Invest and build **needed water infrastructure** (i.e., reservoirs, hybrid NBS/gray infra)	• Establish **river basin intergovernmental panel** with multi-stakeholder water board for integrated land/water/coastal management

Plan Targets

Outcome Indicators	Baseline (2021)	Annual Plan Targets 2023	2024	2025	2026	2027	2028	Means of verification	Agency Responsible
Chapter/Subchapter Outcome									
Watershed restoration (area reforested from area denuded)									DENR (FMB, PAMB), NPC
River/aquifer pollution reduction (say from Class D to Class C rivers)									DENR, LLDA, LGU's
Water supply and quality (HH with Level III and level of HH sanitation)									MWSS, WD's, Rural WS, WSP
Water sewerage and disposal (HH with safe sewerage disposal)									MWSS, WD's, Rural WS
Irrigated service covered (ha from potential area)									DA-BSWM, NIA
Flood protection (HH or region safe from say 25yr or 50yr flood)									DPWH,OCD, LGUs
Coastal hazard reduction (# HH or region safe from say 2 & 4 m storm surge)									DENR, LGUs

Priority Strategies

Challenges/Opportunities	Proposed Strategies
Subchapter Outcome	
▪ With over 30 water-related agencies with overlapping/"turfing" functions, managing the country's water resources is fragmented and uncoordinated especially in the context and need for integrated land, water, coastal and hazard management.	▪ Create the **Department of Water Resources** (an Apex Body or a national water management authority) to orchestrate, coordinate and integrate the development and management water resources with land and coastal resources including control of water-related hazards
• Water-related data collected is inadequate in time/space frequency to properly assess state of water resources • Analyses of available data is also lacking to provide information and insights for sustainable planning and management	• Invest and establish **long-term water-related data monitoring system** (for surface/ground water, water quality, sediments, etc.) "rationally and objectively" all over the country • Establish a **dedicated office or bureau to conduct continuous scientific studies** (i.e., data analyses, modeling, scenario simulations) • A major task of this office is to develop and maintain decision support system based on digital ecosystem framework (with interoperable set of data, algorithms, methods and analysis tools to provide real time information and actionable knowledge and insights that can be easily understood by decision makers and stakeholders/citizens.

Priority Strategies

Challenges/Opportunities	Proposed Strategies
Subchapter Outcome	
• Water resources development and management must be integrated with land use, coastal and hazard management (in the context of IWRM). • However, there is lack of coordination among government agencies, private organizations or individuals responsible or involved in IWRM in terms of planning and management. For instance: o National government versus local level (LGU) o Government versus private companies or organizations o Competing sectors such as water supply versus hydropower and domestic water versus irrigation water, water supply versus flood storage).	• Establish a **national intergovernmental panel** with multi-stakeholder water board for integrated land/water/coastal management • Establish River Basin Organizations with local intergovernmental panel and multi-stakeholder involvement

Contentious/Cross-cutting issues

Contentious Issues

- In creation of DWR (Apex Body), what divisions/office of other water-related agencies become part of DWR
- Hydrologic (river basin or aquifer) boundaries as planning/management units in water resources does not coincide with political boundaries
- Extent of coordination/implementation of integrated land use plans (CLUPs) and water resources development and management plans from national government to local level (LGU)
- Excessive groundwater extraction and subsequent potential land subsidence
- Unutilized irrigation system of NIA due to lack/improper flood drainage system by DPWH
- Competing water uses (domestic vs irrigation, water supply vs hydropower, water supply vs flood allocation storage)

Contentious/Cross-cutting issues

Cross-Cutting Issues

- Water resources development in relation to land use and coastal zone planning and management
- Reliable water supply for food and alternative energy
- Water use and wastewater disposal in the context of livable cities/communities
- Water-related disasters and social protection/socio-economic progress
- Health and water sanitation/sewage disposal/water pollution
- River maintenance and ecological integrity for flora/fauna refuge and biodiversity
- Resilient water infrastructure (especially dams) and modified natural systems under climate change
- Recycling/reusing wastewater from household and agricultural return flows
- Proper solid waste management to minimize effect on flooding and water pollution
- Stormwater drains and communal/city sewerage drains to rivers/bays/ocean outfalls
- Urban (national/local) flood/sewerage drainage network with national/local road network

Last Slide!

13

Expand and Upgrade Infrastructure Subchapter: Water

Abstract: This subchapter on water presents the assessment and challenges, strategic framework, plan targets, and discussions on contentious issues as well as cross-cutting issues. The strategic framework is according to the three pillars, namely, legislative agenda, management instruments and institutional role. This strategic framework essentially hinges on the guiding principles of IWRM (integrated water resources management) with land, coastal and hazards management. In the legislative agenda in particular, the highlight is the creation of the Department of Water Resources (DWR) which is designed as Apex Body or a national water management authority is to orchestrate, coordinate and integrate the development and management of the country's water resources for domestic water supply, sanitation, irrigation, hydropower, navigation, flood control and recreation including the enhancement and maintenance of water quality, conservation of watersheds, control of water pollution and environmental restoration without compromising the natural ecosystem functions and services.

Assessment and Challenges

Assessment

Water Supply: About 90% percent of country's population source water from groundwater but groundwater use is easily mismanaged and also susceptible to contamination. Surface water is a good alternative source but require storage reservoirs due to large seasonal variability of rainfall especially in northern Philippines and this is exacerbated with trends in climate change.

Irrigation Water Delivery: The bulk of irrigation water is utilized by 1.6M ha (out of 3M ha potential areas) of rice farms through national irrigation systems. Irrigation water used for the 1.6M ha is about 67B cum annually versus only about 44B cum used in other Asian countries thus a lot of water wastage. Also, should the government invest in irrigation systems for high-valued crops such as vegetables and orchards?

Floods and Flood Risk: The Philippines being in a humid tropic setting, is devastated by typhoons, monsoons, ITCZ and severe thunderstorms. Extreme weather patterns highly vary in time and widely vary in different parts of the country and yet flood and drought mitigation are not location specific in the country. Also, with its archipelagic setting, with steep mountain slopes connected to short-distant coasts produce high flood flows to easily erode and transport sediments thus changing land and river forms.

Water Quality Maintenance and Pollution Control: With rapid urbanization compounded by inadequate drainage and sewerage, domestic waste account for almost half (48%) of water pollution and rest are from agricultural waste (37%) and from industrial waste (15%). Sanitary sewerage systems in the country are generally the responsibility of individual households rather than on community or city-wide level. Household septic tanks especially in rural areas are difficult to regulate and thus pose potential risk to surface water and groundwater contamination.

Water Governance: In the Philippines, it is said that water governance is a major problem due to the overlapping and fragmentary jurisdiction and authority in the water resources management framework in the Philippines. In other words, nobody's is in charge in managing the country's water resources in a holistic, coordinated and integrated manner among different water sectors (i.e., uses and purposes) resulting in non-optimal allocation, utilization and control of water resources.

Other Issues/Concerns: Land use plans divorced from water plans; impact of mismanaged solid waste to flooding; watershed degradation especially deforestation resulting in excessive soil erosion and reduced water infiltration.

Challenges

The leading and major challenge in the water sector is water governance since there are over 30 water-related agencies with overlapping functions in managing the country's water resources. Essentially, this results in fragmented and uncoordinated manner of integrated land, water, coastal and hazard management in the context of IWRM (integrated water resources management). A related issue is the lack of coordination among government agencies, private organizations or individuals involved water resources management and utilization (e.g., national government versus LGUs, or government versus private companies or organizations).

Climate change is another major challenge due to increase in hydrologic variability (i.e., large fluctuations of seasonal rainfall or extreme weather events). Consequently, water supply availability especially in northern Philippines can so much less during the dry months although so much more during wet months. Other observed consequences of climate change are that occurrence and increased frequency of extreme weather events so that intense rainfall including hot, summer thunderstorm produce big floods and more often and likewise more severe high winds occur causing storm surges. In watersheds, sediment yields increase with intense rainfall.

Data collection of water-related data in the country has become inadequate as far as time/space sampling frequency is concern, thus the inability to properly assess the state of water resources in the country. For instance, in the 1950's and 60's, there were over 300 streamflow gaging stations in the country but there may be less than 150 stations are left. Groundwater data is also scarce and generally collected either on project basis or well development pumping tests for one-time water permit applications. On the other hand, analyses of available data are also lacking which can provide useful information and insights for sustainable water resources planning and management.

A challenge in water allocation is competing water use which can be among water sectors such as water supply versus hydropower, domestic water versus irrigation water and water supply versus flood allocation storage in reservoirs. For example, a multipurpose reservoir with water supply purpose will try to conserve water for the dry season by accumulating water during the wet season, and yet it flood control function objectives would need to empty a certain reservoir capacity for flood allocation storage.

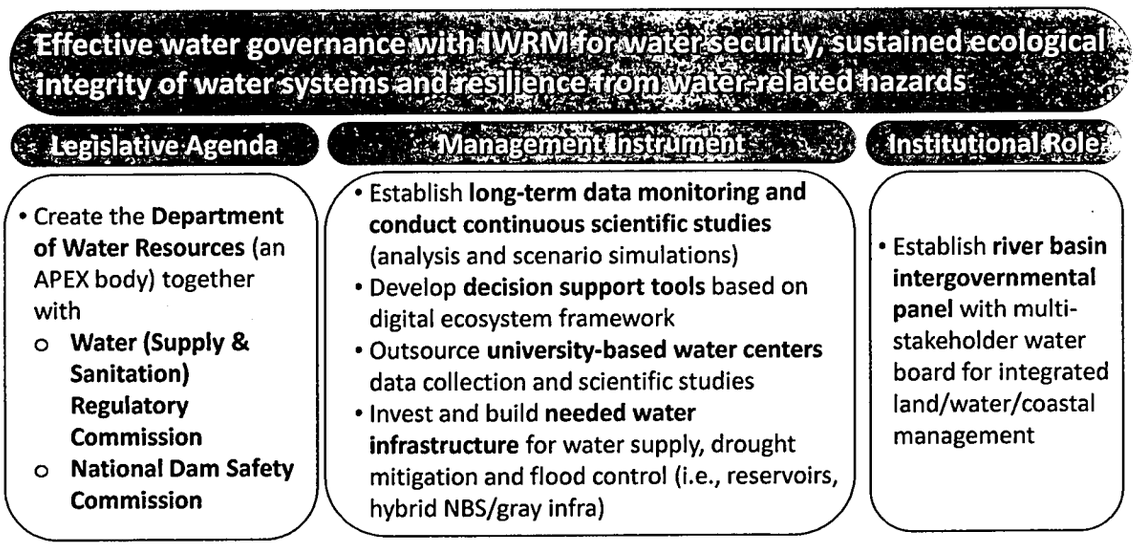
Strategic Framework

Box 13.1 below summarizes the strategic framework in the water sector with the overall goal of effective water governance with IWRM for integrated planning and management of land, water and coastal resources including water-related hazards). There are three major pillars in this strategic framework that includes legislative agenda, management instruments and institutional role to address the various objective of water resources development and management which can be enumerated as follows:

- Protect land, water and coastal resources for water security and ecological integrity
- Efficient water allocation and utilization especially with competing water uses
- Effective flood management (with sediment control) and drought mitigation
- Protect life and property from water and coastal hazards including dam-related hazards
- Proper maintenance and enhancement of surface and ground water quality
- Ensure good water quality and sanitation including proper sewerage.

The ensuing sections further expound on these three pillars of the strategic framework and the priority strategies associated to them.

Box 13.1 Strategic Framework



With the strategic framework above, the Plan Targets and associated Outcome Indicators are given in Table 13.1 shown at the end of this subchapter.

Legislative Agenda: Creation of the Department of Water Resources

The main motivation to create the Department of Water Resources (DWR) which is designed as Apex Body or a national water management authority is to orchestrate, coordinate and integrate the development and management water resources. The guiding principle of this agency is IWRM (integrated water resources management) which covers integrated management and harmonization of land and coastal resources with water resources including control of water-related hazards. In essence, this proposed Department will be responsible:

> To manage and protect the country's water resources for domestic water supply, sanitation, irrigation, hydropower, navigation, flood control and recreation including the enhancement and maintenance of water quality, conservation of watersheds, control of water pollution and environmental restoration without compromising the natural ecosystem functions and services.

It is recognized that there are existing agencies or organizations that have the expertise, experience and mandate to perform one or more of various functions of water resources management but commonly specific to a particular water sub-sector or purpose or uses. For instance, NIA is the lead agency for irrigation while DPWH is the lead agency for flood control. In this case, the DWR will partner with these agencies to properly plan, design and operate the water system associated to these agencies. Since the partner agency may be only concerned with its own sub-sector or water use, the job of the SWR is to integrate and oversee among the various water sub-sectors to optimally plan, design and operate the natural or physical water resources recognizing the possible conflicting, competing or complementary uses of water.

The DWR will be in essence an enable to direct the various water partners or outsource or relegate to the partner agencies the planning, design or operation (including project implementation or construction of associated infrastructure) of the water resources system for the particular water purpose/s. Thus, it is important that DWR must earn, gain and be recognized (through public relations and through legal instruments) as the water management authority, and must establish a strong track record and reputation to become an effective overall water manager.

Management Instruments

There are several management instruments IWRM that include water resources assessment, data collection networks, allocation and conflict resolution, allocation through market instruments, risk management tools, regulatory instruments, communication and information for informed stakeholder participation, and the of technology for research and development.

The priority strategies in terms of management instruments are as follows.

1. Invest and establish long-term data monitoring system for surface water, ground water, water quality and sediments data which rationally designed sampling network all over the country with the proper (statistically/physically-based) temporal and spatial sampling frequency.

2. Establish a dedicated office or bureau to conduct continuous scientific studies (i.e., data analyses, modeling, scenario simulations)

3. Develop and maintain decision support system based on digital ecosystem framework (with interoperable set of data, algorithms, methods and analysis tools to provide real time information and actionable knowledge and insights that can be easily understood by decision makers and stakeholders/citizens.

4. Invest and build water storage reservoirs for water supply and drought mitigation. Dams can be built as multipurpose dams with flood control function also. Reservoirs should be planned with infinite life so that sediment deposition can be avoided through sediment flushing (built-in facility and operations)

5. With high sediment yield and transport, build irrigation systems with pipe or closed conduits conveyance systems rather than open channel or gravity canals

6. Invest in coastal protection infrastructure and preferably hybrid systems, that is, a combination of NBS (nature-based solutions) and engineered or gray structures.

7. Provide countrywide guidelines for multi-purpose rain water harvesting scheme.

8. Invest in smart metering and pricing of household water use and demand management.

Institutional Role

Another pillar of IWRM is the institutional principle which argues that water resource management is best done when all the stakeholders participate role. Assuming that all organizations and agencies at all levels and across sectors are participating and talking to each other, this institutional role is to anchoring the coordination at the highest apex level, to create coordination bodies at the river basin level, to devolve responsibility to the lowest appropriate level and to develop human and institutional capacities.

In view of the above, the priority strategies in the context of institutional following are as follows:

1. Establish a national intergovernmental panel with multi-stakeholder water board for integrated land/water/coastal management

2. Establish River Basin Organizations with local intergovernmental panel and multi-stakeholder working group.

Contentious Issues

The following are some contentious issues that need to be addressed.

- In the creation of DWR (Apex Body), what divisions/sections of other water-related agencies become part of DWR
- Hydrologic (river basin or aquifer) boundaries as planning/management units in water resources do not coincide with political boundaries
- Extent of (mis)coordination/(mal)harmonization to integrate land use plans (CLUPs) and water resources development plans from national government to local level (LGU)
- Excessive groundwater extraction that can result to salt water intrusion and land subsidence problems
- Unused irrigation service areas of NIA due to lack/improper flood drainage system by DPWH during the wet season
- Competing water uses (domestic vs irrigation, water supply vs hydropower, water supply vs flood allocation storage)

Cross-Cutting Issues

The following are cross-cutting that would need to be address with respect to other chapters/sections in this PDP.

- Water resources development with land use and coastal zone planning and management
- Water supply needs with food security (aside from rice farming) and hydropower as alternative energy
- Water use and wastewater disposal with livable cities/communities
- Water-related hazards with disaster resilience, public safety and social protection
- Water sanitation/sewage disposal/water pollution with wealth
- River works and maintenance of ecological integrity with flora/fauna refuge and biodiversity
- Resilient water infrastructure (especially dams) and modified natural systems under climate change
- Recycling/reusing wastewater from household and agricultural return flows
- Inland and river flooding and pollution in relation to solid waste management
- Stormwater including communal/city sewerage that drains to rivers/bays/ocean outfalls
- Urban (national/local) flood/sewerage drainage network with respect to national/local road network

Plan Targets

Table 13.1. Plan Targets