

# THE STATE OF WATER

## At A Glance

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SENATE ECONOMIC PLANNING OFFICE

AAG 23-03

### GLOBAL SITUATION



#### Around 4 billion people

or at least 50% of the world's population live under highly water-stressed conditions for at least one month a year, withdrawing 40% of its water supply.



**Water-stress** occurs when the demand for water exceeds the available amount during a certain period or when poor quality restricts its use.



Globally, **2 billion people** (26% of the population) lack safe drinking water, and **3.6 billion** (46%) lack proper sanitation.



Governance issues exacerbate water problems. Urbanization, population growth, and shifting water patterns worsen supply-demand gaps.



A worldwide consensus is forming for sustainable water management through ecosystems protection, circular economies,\* data-driven technologies, and climate-resilient infrastructure.

\*This approach focuses on innovations for water reuse, wastewater recycling, and reduced water consumption.

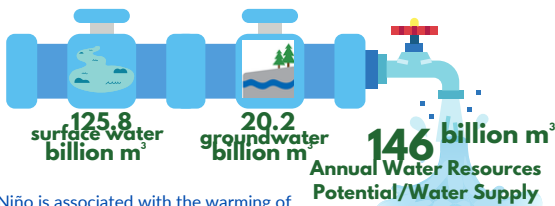
Sources: European Environment Agency, 1999; Water Resources Institute, 2019; UN Water, 2021; FAO, as cited in World Bank, 2020; UN General Assembly 2023

### PHILIPPINE CONTEXT

**In the Philippines where numerous and complex water-related challenges and hazards abound, universal access to safe water and sanitation has yet to be achieved.**



The Philippines possesses ample water resources: 421 rivers, 221 lakes, and significant groundwater. Its yearly rainfall averages 2,400 mm, providing 146 billion m<sup>3</sup> of freshwater annually. Yet, variations in rainfall, geographic disparities, growing water demand, and periodic El Niño patterns cause frequent shortages.



\*El Niño is associated with the warming of the ocean surface in the central and eastern tropical Pacific Ocean. It occurs on average every two to seven years, and episodes typically last nine to 12 months.



**About 52% of water resources** was allocated for various purposes based on water permits issued by the National Water Resources Board (NWRB) in 2022.\*\*

\*\*This does not include unregulated/illegal groundwater withdrawal.



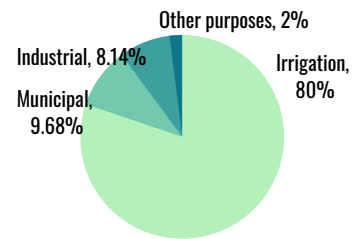
Around 59% of allocated water is used for **hydropower** which uses a non-consumptive process where water is returned promptly to its source after use, maintaining its availability.



In terms of consumptive use, **irrigation** is the largest consumer of water at **80%**, followed by municipal/ domestic use, industrial, and other purposes.



#### Allocated Water by Consumptive Use as of December 2022



Sources: NWRB, PSA, NEDA



Despite ample water resources, the Philippines has faced water stress since 2017. In 2020, national water availability was just **1,300 m<sup>3</sup> per capita**, below the 1,700 m<sup>3</sup> per capita threshold for water stress.

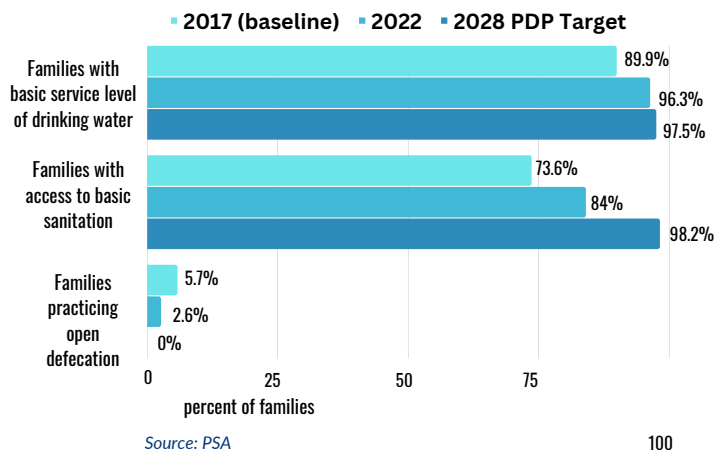
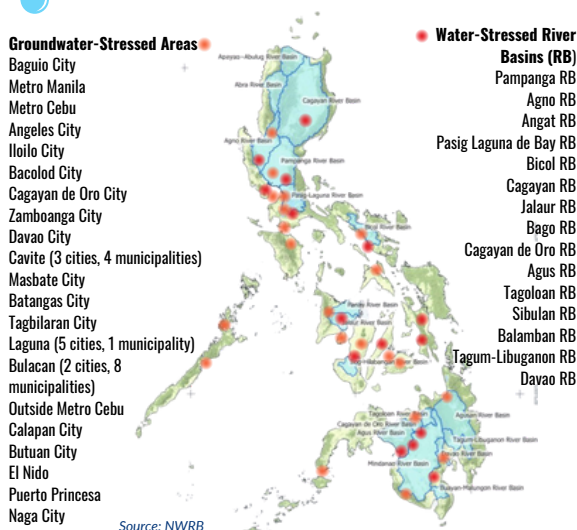


In 2015, the Philippines, along with 192 United Nations member states, committed to the Sustainable Development Goals, including achieving **universal access to safe water and sanitation by 2030**.



#### Status of the Philippines' Water, Sanitation, and Hygiene (WASH)

#### Water-Stressed Areas and River Basins



The NWRB has pinpointed 21 groundwater-stressed zones and 15 water-stressed river basins due to factors like current water availability, high demand from urbanization and tourism, climate change effects on water, and water quality worries. About 27% of the Philippine population live in these areas.



Based on the 2022 Annual Poverty Indicators Survey (APIS), **96.3% (25.9 million families)** had accessible drinking water from improved sources within a 30-minute roundtrip. Yet, **2.4% (646,608 families)** use unsafe sources like surface water and unprotected wells/springs.



Regarding sanitation, **84% (22.6 million families)** had basic service or used improved facilities not shared with another household, while **2.6% (688,981 families)** still practiced open defecation.



# ISSUES AND CHALLENGES

## Degradation of watersheds

- Over **130 critical watersheds** in the country need immediate protection and rehabilitation to minimize soil erosion and improve water yield.



- 11 of the 18 major river basins have less than 20% forest cover.

Sources: DENR, PhilCCA Report 2017

## Infrastructure and investment constraints

- Investments in infrastructure have not been comprehensively planned and coordinated.
- An estimated amount of **Php1.07 trillion** is required to achieve universal access to water supply and sanitation (WSS) by 2030.



Source: NEDA (PWSSMP)

## Inefficiency in water use

- About **25%** of the water delivered by the national irrigation systems is wasted.

Source: NEDA (PDP 2023-2028)



Source: LWUA

# POLICY OPTIONS

**Balancing current and future water needs demands diverse solutions across sectors. Several Senate bills tackle water-related concerns on fragmented institutions, watershed protection, fair access, water quality, and sustainability.**

**Department of Water Resources**  
Senate Bill Nos. (SBN) 87, 102, 1021, 1244, 1395, 2013, and 2412

The bills seek to streamline all water-related functions in the government and create a Department responsible for the comprehensive and integrated development and management of water resources and their optimal allocation among competing uses.

**Water Regulatory Commission**  
SBNs 102, 1021, 1428, and 2013

It is proposed that a regulatory body with overall authority and powers that cover all service providers, whether private or public be created. The Commission shall be tasked to promulgate and enforce just and reasonable technical standards, classifications, and measurements of service in WSS.

**Water Resources and Management Authority**  
SBNs 185 and 268

The bills aim to establish an Authority which shall be responsible for the comprehensive and integrated development and management of water resources of the country.

**Sustainable Forest Management Act**  
SBNs 257, 988 and 2320

The proposed measure seeks to optimize the utilization of forest resources, including water, to support sustainable development by providing equitable access and benefit sharing to stakeholders.

**Final Forest Limits Act**  
SBNs 664, 886, and 1955

The bills delineate the specific limits of forestlands and all areas within it including watersheds, freshwater and swamps, among others, for the protection, conservation, and development of forest resources.

**Protection of Watersheds for Irrigation Act**  
SBN 966

The bill seeks to ensure the protection, conservation and rehabilitation of watersheds supporting the National Irrigation System.

**Construction of a Potable Water Supply System in Every Barangay**  
SBN 310

The bill mandates a 3-year program by DSWD, DOH, and DPWH for the construction of potable water systems in all barangays. These agencies will prioritize problem areas, consulting LGUs and addressing water-borne diseases.

**Safe Drinking Water Act**  
SBN 1048

The bill requires the physical, bacteriological, chemical, and over-all examination of quality of water from existing sources every two months, amending the Sanitation Code of the Philippines. It directs water service providers to prepare water safety plans to be approved by the DOH.

**Water Sustainability Act**  
SBN 16

This proposed measure aims to update and consolidate all existing frameworks for water management to ensure unhampered access to safe and clean sources of water and guarantee their availability for the future generations.

**Rainwater Harvesting and Management**  
SBNs 990, 545, 454, 128, 342, and 1687

SBNs 990, 545, and 454 mandate rainwater harvesting facilities in Metro Manila developments; SBN 128 extends this nationwide. SBN 342 requires catchment in Metro Manila and major city barangays. SBN 1687 stipulates rainwater harvesting in homes, industries, schools, and agriculture.

## Climate change

- Climate change affects the frequency and intensity of El Niño episodes.
- Large rainfall variability and longer drier periods will affect the amount of water in watersheds and dams
- The frequency of flooding is expected to increase in Luzon, while less frequent but high-intensity floods are expected in Mindanao.



Sources: PAGASA, World Bank

## Low service coverage of local water districts (LWDs)

**38%** or **622 out of 1,617** non-NCR cities and municipalities lack LWD coverage. Private investment hesitates in lower-class LGUs, affecting water supply expansion; thus extending LWD coverage is vital.

**39%** or **343 out of the 875** formed LWDs are non-operational due to lack of sufficient water supply, incomplete water pipeline infrastructure, and the absence of a constituted Board of Directors.

Source: LWUA

## Water pollution

- 43% or **180 out of 421** rivers are polluted mainly due to untreated domestic sewage and industrial and agricultural wastes.
- In 2021, **56% (13 of 23)** of water bodies classified for public water supply exceeded guideline values for fecal coliform.
- An average of 50,058 cases of water-borne diseases were reported annually from 2010-2019.



Sources: DENR Report to WEPA, DENR, PSA

## Institutional fragmentation and governance gaps

- Over 30 agencies lack coordination in water roles (regulation, management, policy-making). No central body oversees the full water resource cycle.
- Scattered and limited WSS data hampers planning and monitoring, weakening the sector.
- LGUs require better technical capacity for WSS duties (irrigation, water supply, drainage, flood control) per the Local Government Code.

In April 2023, EO No. 22 established the Water Resources Management Office under DENR to unify and regulate sustainable water resource management.

Source: NEDA (PWSSMP)



## Increasing water demand due to population growth and urbanization

- Urban population in the Philippines increased by 7.20 million in 2020.
- Total population is projected to reach 115 million by 2025.
- Under a "business-as-usual" scenario, the country is likely to experience a high degree of water shortage by 2040.



Sources: PSA, PWSSMP, World Resources Institute