REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY

8th Philippine Golf Course Management Conference

Orchard Golf & Country Club, Dasmariñas City, Cavite

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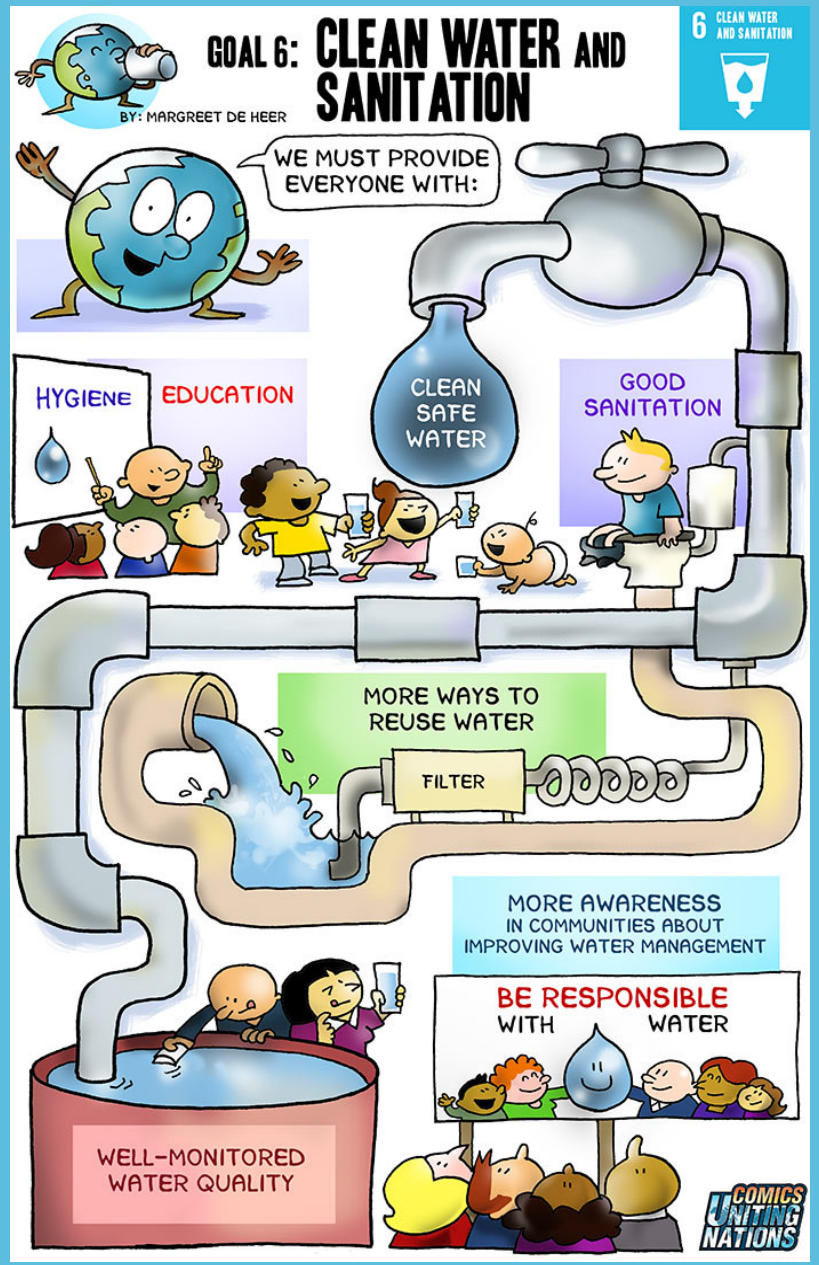
Presentation Outline

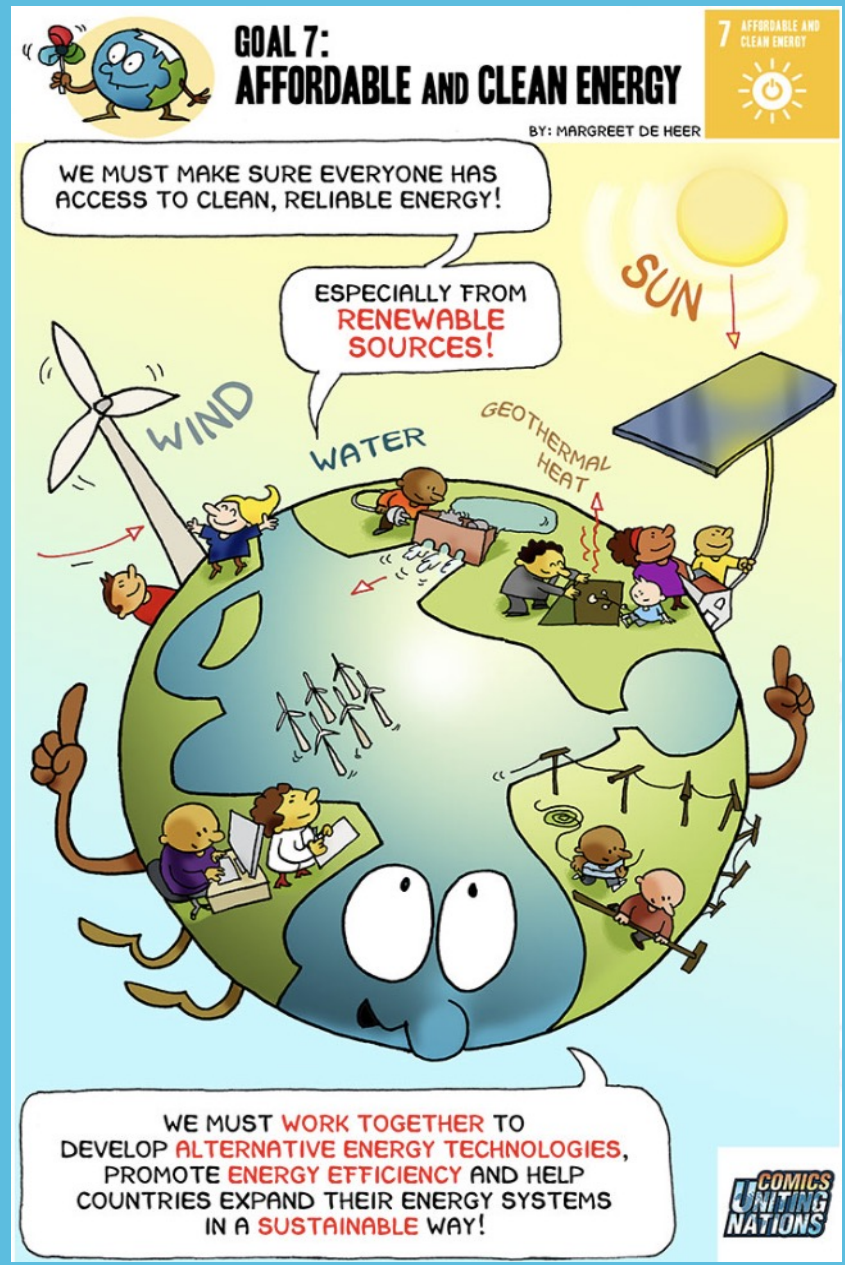
- The Sustainable Development Goals (SDG)
- Overview of the Water and Energy Sectors of the Philippines
- Challenges in the Water and Energy Sectors of the Philippines
- The Philippine Government's Response and Plans of Action
- Sustainable Practices for the Golf Industry


SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

SDG 6:
***Clean Water and Sanitation* and**

SDG 7:
Affordable and Clean Energy





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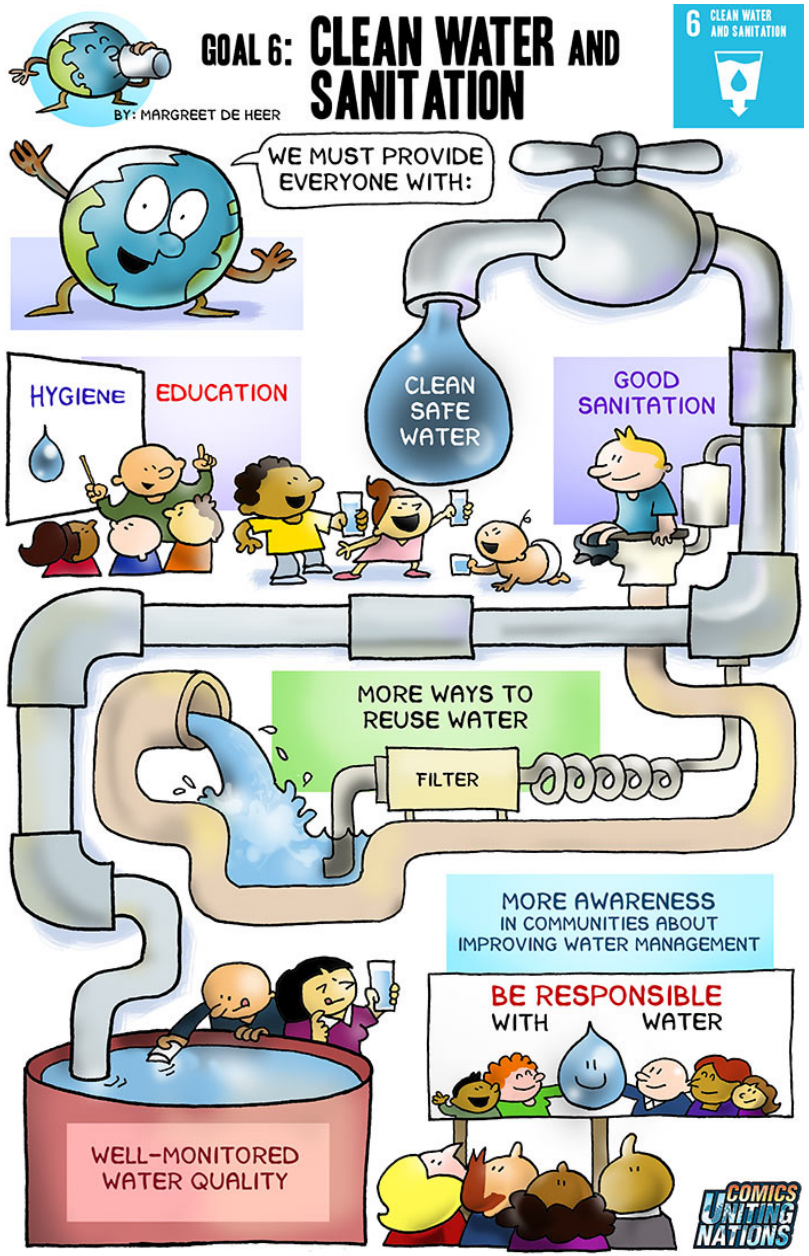


SDG 6: Ensure availability and sustainable management of water and sanitation for all

Philippines' SDG 6 Targets by 2030

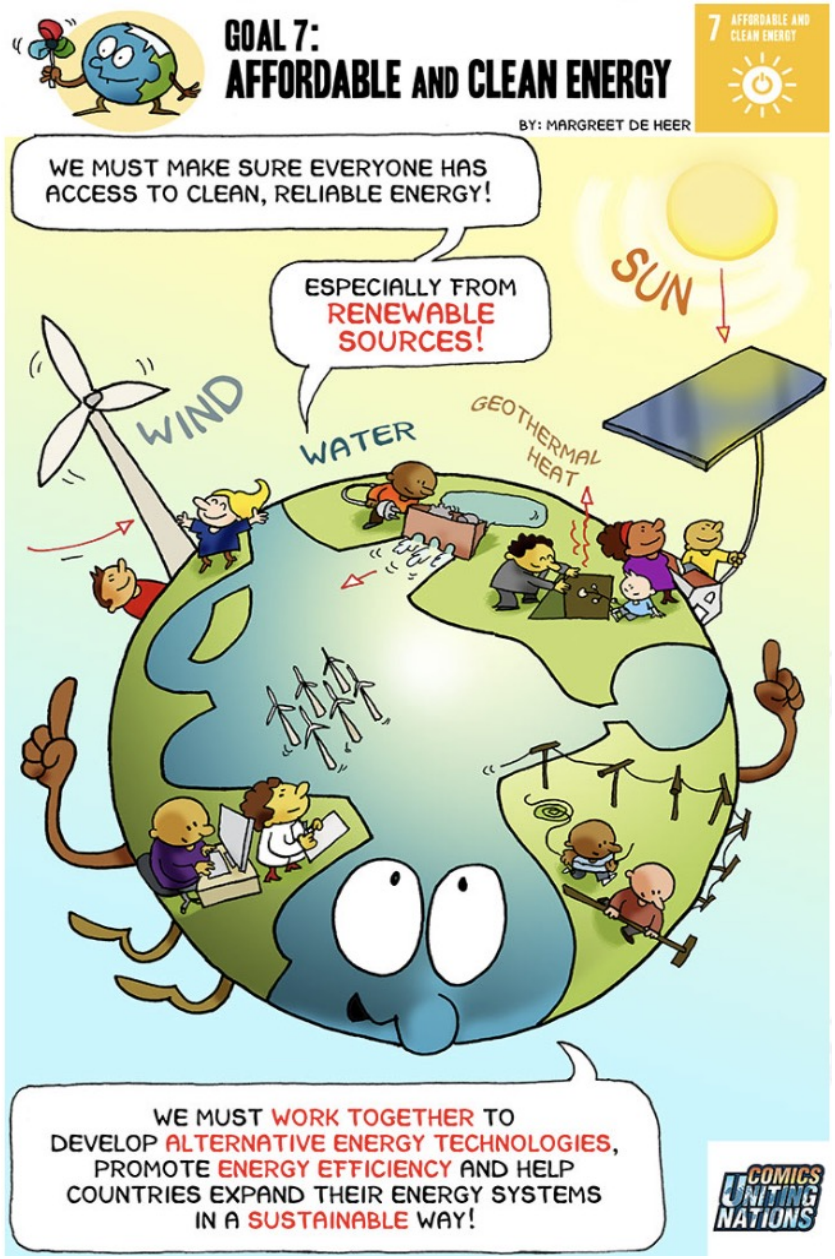
6.3 Improve water quality, wastewater treatment and safe reuse

6.4 Increase water-use efficiency and ensure sustainable withdrawals and freshwater supplies

6.5 Implement IWRM at all levels, including through transboundary cooperation as appropriate

6.6 Expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including **water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies**

6.8 Support local engagement in water and sanitation management



SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

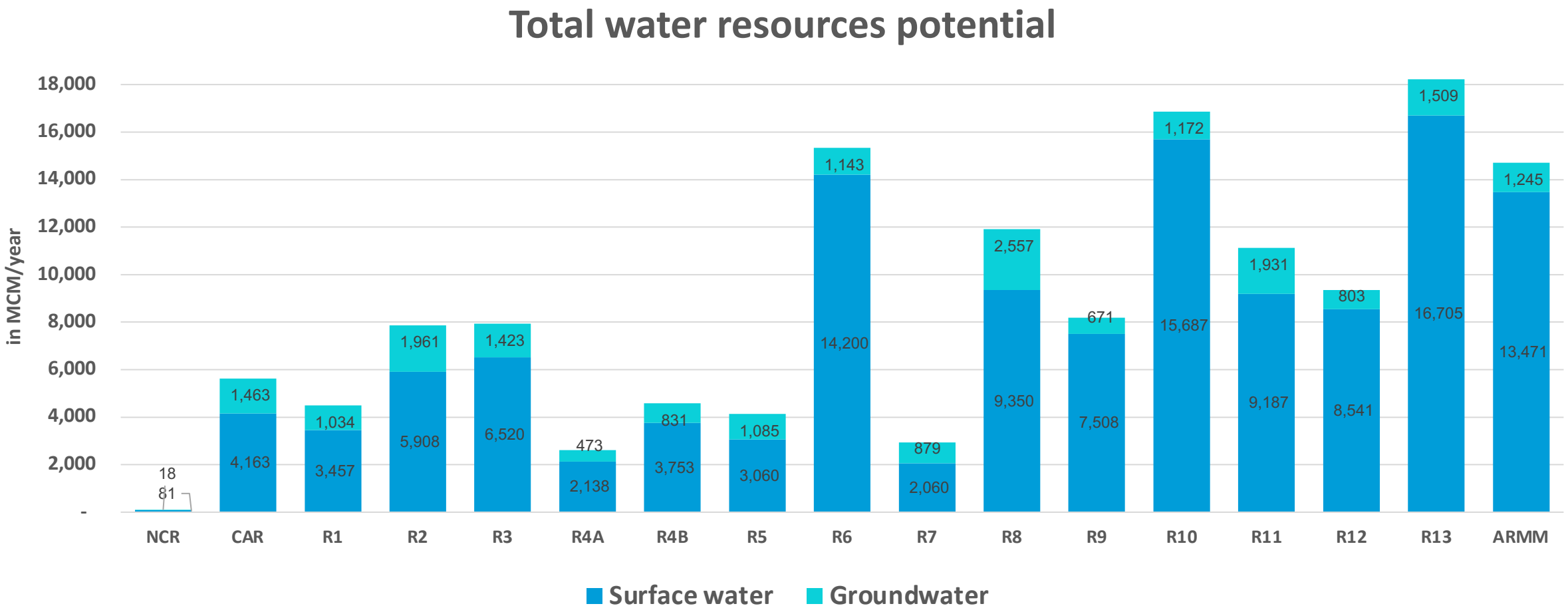
Philippines' SDG 7 Targets by 2030

7.1 Ensure universal **access to affordable, reliable and modern energy services**

7.2 Increase substantially the **share of renewable energy** in the global energy mix

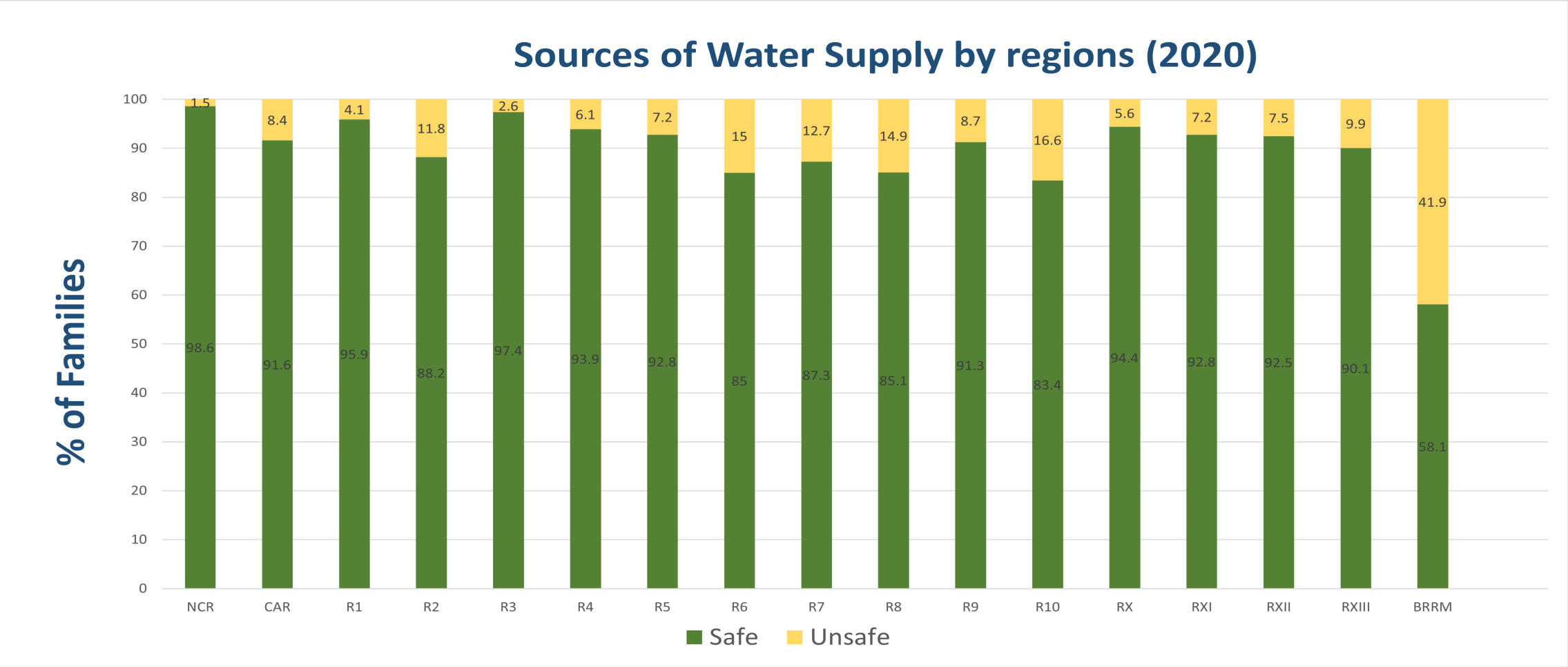
7.3 Double the global rate of **improvement in energy efficiency**

Resources vary across regions.
Water stress is expected to worsen in the long term.



Source: PWSSMP, 1998 JICA study

About 91.6% of families have access to water sources classified as safe.



Source: APIS 2020

Results Matrix: Water Security and Ecology

Indicator/s	Baseline		Annual Targets					
	Year	Value	2023	2024	2025	2026	2027	2028
Safe water supply coverage (% of families)	2020	91.60	93.28	94.12	94.96	95.80	96.64	97.48
Access to basic sanitation (% of families)	2020	93.90	95.12	95.73	96.34	96.95	97.56	98.17

Source: DOE 2021 Performance Agency Report

Installed Generating Capacity

In 2021, the installed generating capacity was recorded at 26,774 MW with 23,788 MW dependable capacity.

Plant Type	2020		2021	
	MW	%Share	MW	%Share
Coal	10,944	41.6	10,944	40.9
Oil Based	4,237	16.1	4,417	16.5
Natural Gas	3,453	13.1	3,453	12.9
Renewable Energy	7,653	29.1	7,961	29.7
TOTAL	**26,286**	**100.0**	**26,774**	**100.0**

Source: DOE 2021 Performance Agency Report

Results Matrix: Power Requirements

Indicator	Baseline		Annual Targets					
	Year	Value	2023	2024	2025	2026	2027	2028
Power requirements met (in % available capacity over peak demand)	2022	142.00	140.00	140.00	146.00	172.00	209.00	261.00
Proportion of households with access to electricity increased (% of total HHs)	2021	95.41	95.50	TBD	TBD	TBD	TBD	TBD
Electricity Consumption (in real terms) per capita increased (kWh/person)	2021	804.21	897.00	945.00	996.00	1,051.00	1,110.00	1,172.00

Source: DOE 2021 Performance Agency Report

Challenges in the Water Resources Sector in the Philippines

- Lack or limited operationalization of integrated water resources management (IWRM) in many of the country's river basins and watersheds

- Quantifying the extent of many problems in the water resources sector (i.e., water resource availability or lack thereof, water stress levels, inefficiency in use, over/underutilization of resources, groundwater pollution, land subsidence, etc.)

- Uneven distribution of freshwater sources, hence, limited access to freshwater throughout the county.

These can be attributed to the fundamental issue of **a weak and fragmented institutional set-up for the water resources sector**. There are at least 32 agencies involved in the sector, with some agencies having overlapping or conflict-of-interest mandates for water supply.

Challenges in the Energy Sector in the Philippines

- High electricity prices due to the reliance on imported fuel;
- Insufficient investment in renewable energy development;
- Inadequate energy infrastructure in rural areas; and
- Limited access to financing for energy projects

Philippine Development Plan 2023-2028

PDP 2023-2028 Strategy Framework

MATATAG, MAGINHAWA AT PANATAG NA BUHAY

ECONOMIC TRANSFORMATION FOR A PROSPEROUS, INCLUSIVE, AND RESILIENT SOCIETY

DEVELOP AND PROTECT CAPABILITIES OF INDIVIDUALS AND FAMILIES

PROMOTE HUMAN CAPITAL AND SOCIAL DEVELOPMENT

- IMPROVE EDUCATION AND LIFELONG LEARNING
- BOOST HEALTH AND NUTRITION
- ESTABLISH LIVABLE COMMUNITIES

INCREASE INCOME EARNING ABILITY

- EXPAND TRAINING AND SKILLS DEVELOPMENT
- INTENSIFY EMPLOYMENT FACILITATION

PROTECT PURCHASING POWER

- ENSURE FOOD SECURITY
- RATIONALIZE SOCIAL PROTECTION

TRANSFORM PRODUCTION SECTORS TO GENERATE MORE QUALITY JOBS AND COMPETITIVE PRODUCTS

MODERNIZE AGRICULTURE AND AGRI-BUSINESS

REVITALIZE INDUSTRY

REINVIGORATE SERVICES

- PROMOTE TRADE AND INVESTMENTS
- ADVANCE R&D, TECHNOLOGY, AND INNOVATION
- ENHANCE INTER-INDUSTRY LINKAGES

PRACTICE GOOD GOVERNANCE AND IMPROVE BUREAUCRATIC EFFICIENCY

ENSURE MACROECONOMIC STABILITY AND EXPAND INCLUSIVE AND INNOVATIVE FINANCE

ENSURE PEACE AND SECURITY AND ENHANCE ADMINISTRATION OF JUSTICE

EXPAND AND UPGRADE INFRASTRUCTURE

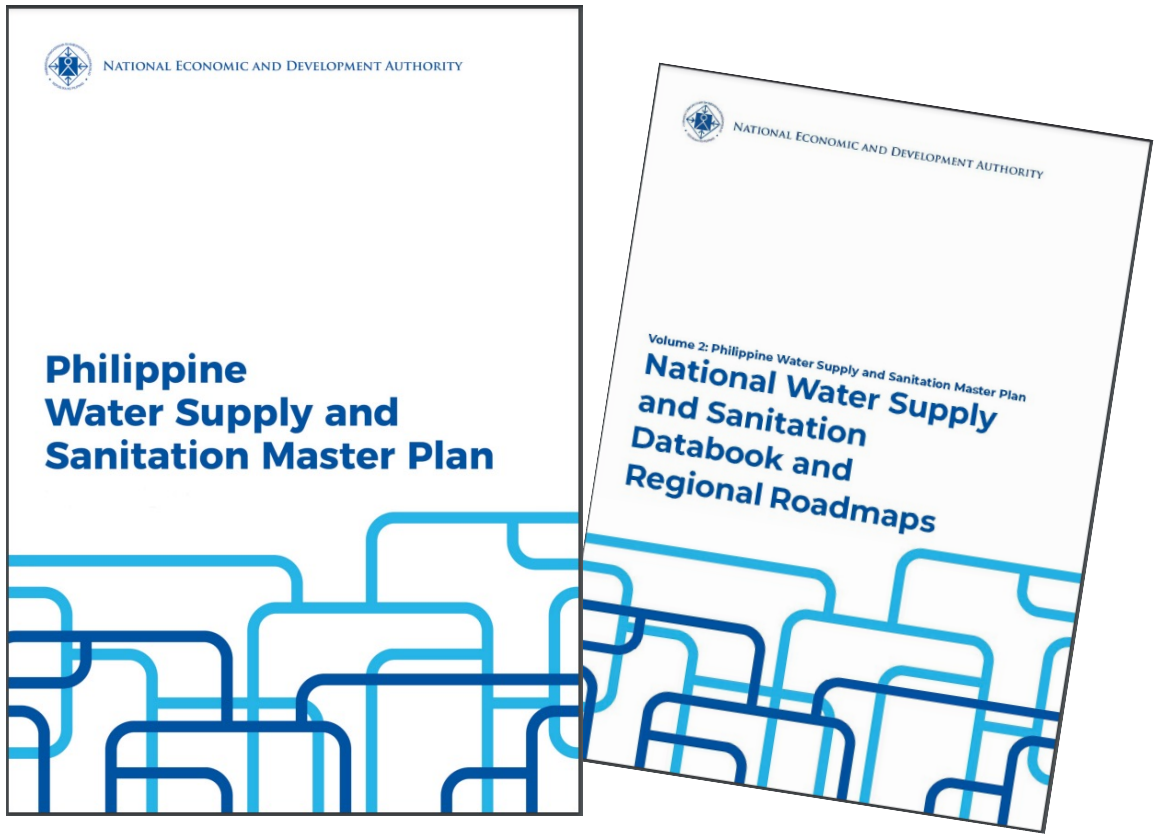
ACCELERATE CLIMATE ACTION AND STRENGTHEN DISASTER RESILIENCE

Chapter 12 Strategy Framework

Sustainable, resilient, integrated, and modernized infrastructure services delivered

Planning, programming, and asset management in infrastructure enhanced	Seamless and inclusive connectivity achieved (via local and international linkages)	Water security, ecological integrity of water systems and resiliency to water hazards attained	Affordable, accessible, reliable, and sustainable energy provided	Enhanced support to social development provided
• Implement integrated master-planning development and convergence programs • Embed resilient and innovative solutions in infrastructure design • Fully implement asset management and preservation • Undertake strategic partnerships for financing investments	• Move people, goods, and information through modernized and expanded transport and digital infrastructure • Address universal mobility and connectivity	• **Upgrade and expand water infrastructure** • **Strengthen implementation of integrated water resources management (IWRM)** • **Invest in water infrastructure services provision and provide accessible financing for water supply and sanitation projects**	• **Implement game-changing reforms to bring down the cost of electricity** • **Enhance the delivery of energy by coordinating investment in generation, transmission, and distribution** • **Provide an enabling environment for the market to deliver an optimal fuel mix** • **Enhance the demand side management** • **Invest in energy innovation to respond to increasing demand and new markets for clean technology goods and services**	• Ensure equitable access by providing adequate health, education, and SWM infrastructure • Improve resiliency to support health and educational outcomes • Pursue optimal solid waste management solutions

Philippine Water Supply and Sanitation Master Plan



PWSSMP Key Reform Agenda (KRAs)

No.	KRA	Focus
1	**Establishing Effective WSS Sector Institutions**	Addressing the fragmented WSS Sector.
2	**Strengthening the Regulatory Environment**	Regulating and managing water resources and water service providers (WSPs), including water tariffs.
3	**Creating and Ensuring Effective WSS Services**	Ensuring appropriate and sustainable operations of WSS service providers.
4	**Balancing Water Supply and Demand**	Managing and maximizing finite water resources with end-users
5	**Building Climate Resiliency**	Adapting to climate change.
6	**Enabling Access to Funding and Financing**	Improving availability and acquisition of funds/financing for WSS data
7	**Managing Data and Information**	Ensuring availability and accessibility of reliable WSS data.
8	**Driving Research and Development (R&D)**	Investing on research and innovations.

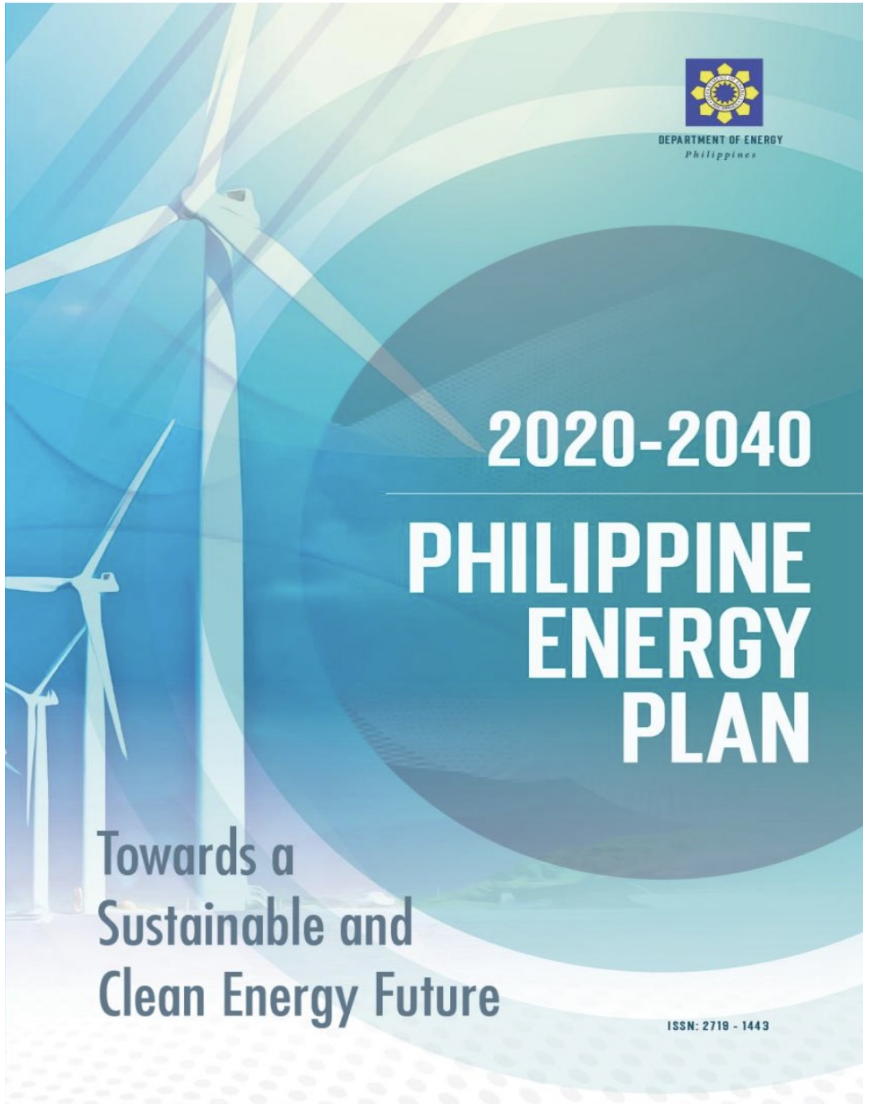
PWSSMP KRAs and Focus Areas

KRA	Focus and Action Areas
4 - Balancing Water Supply and Demand	**Managing finite water resources with end-users** ✓ Water resource assessment to come up with recommendations to **shift from groundwater to surface water sources and bulk water development**; rationalize permit system; and review and update pricing system for resource extraction ✓ Development and implementation of a **communication strategy for water demand management and wastewater management**
5 - Building Climate Resiliency	**Adapting to climate change** ✓ Design WSS infrastructure based on DPWH Design Guidelines, Criteria, and Standards, and Standard Specifications for **climate resilient hydraulic structures** ✓ Issuance of administrative guidelines, rules and regulations requiring all LGUs to **require green technology** ✓ Preparation of **WSS Emergency Response Plans**

PWSSMP KRAs and Focus Areas

KRA	Focus and Action Areas
8 - Driving Research and Development	**Investing on research and innovations** ✓ Formulation of **research and development (R&D) agenda** ✓ Promotion and conduct of **R&D Studies** on WSS (i.e., tie-up with academe, WSS partners and experts) ✓ **Creation of an R&D Division** under the envisioned DWR or NWMC

Philippine Energy Plan 2020-2040



Affordable and Clean Energy

Transitioning to an Energy Efficient Economy	Energy Supply and Demand Assumptions	Energy Transition	Strengthening Energy Security
Promote a culture that embraces energy efficiency as a **"way of life"**	Ensure access to **affordable, reliable, sustainable** and **modern energy** for all	**Integrate climate change mitigation and adaption strategies** by *shifting power generation* from **coal-dependent** to a more diverse one with substantial contribution from **renewables and natural gas**.	**Supply diversification and grid resiliency** (generation, transmission, and distribution) and **physical protection** of the critical energy infrastructures and systems.

Water Conservation Practices on Golf Courses

- Rainwater/Storm runoff harvesting/collection
  - Use of recycled water for irrigation

- New irrigation system technologies
  - water and energy-conserving/efficient systems

- Explore alternative water sources
  - treated wastewater, brackish/sea water, desalination

- Golf course design and grass that use less water

Energy Conservation Practices on Golf Courses

- Renewable energy sources
- Energy-efficient lighting
- Efficient heating, ventilation, and air-conditioning systems
- Water and waste reduction
- Green building practices

Thank you