

Water Resource Management Roadmap

Updated as of 10 November 2023

Legend (Text Font):

Completed	New/Ongoing	Target
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Needs for Government Facilities and Laboratories

- Mountain engineering center towards sustainable infrastructure and upland water security program (BOONDOCK)
- Smart water infrastructure and management R&D Center (SWIM)
- Community-based water harvesting technologies program
- Advancement of O&M for water supply facilities

Needs for Human Resource:

- Training on modelling software
- Training on data analytics
- Training on sensor/system development/operation and maintenance

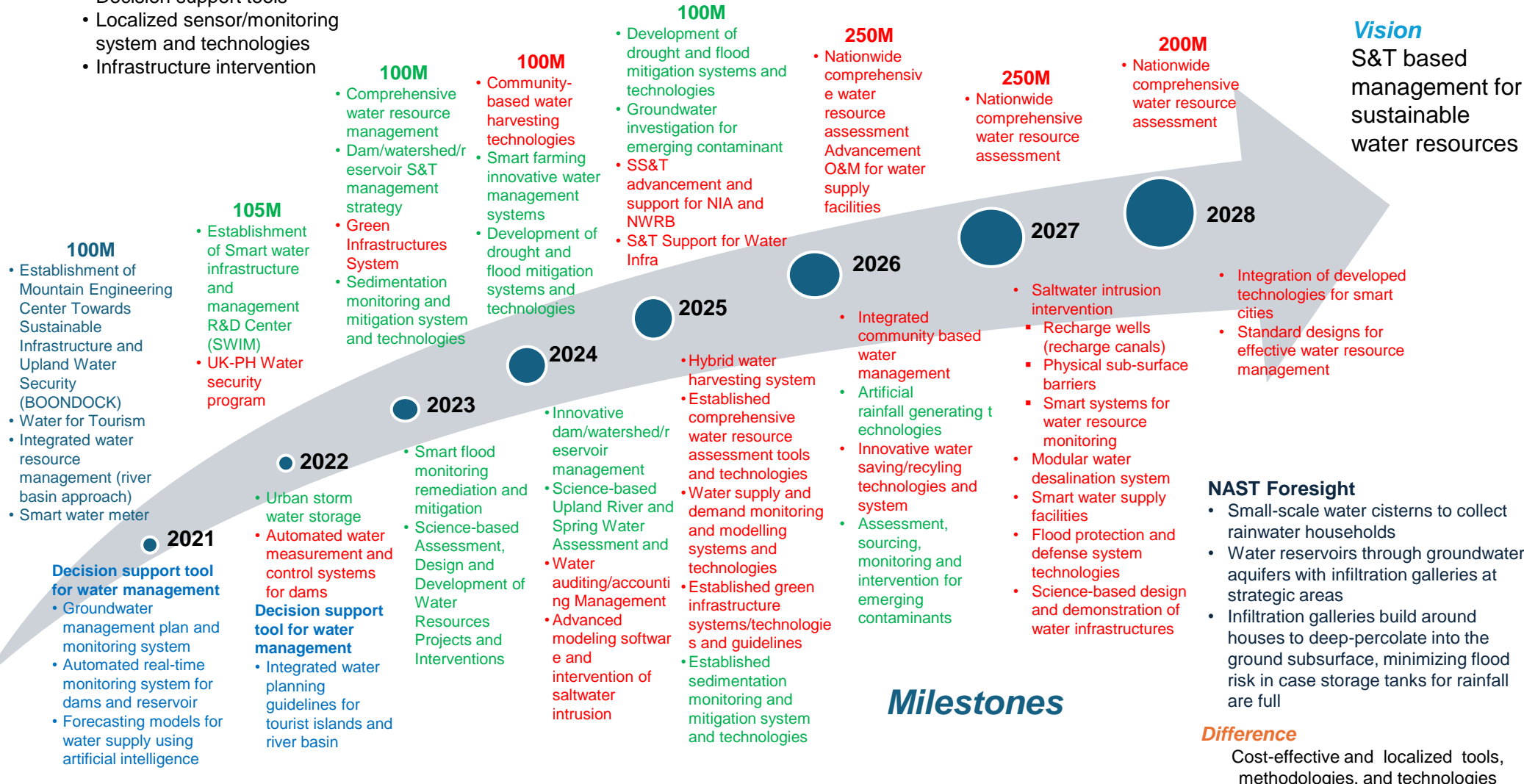
R&D Program/Project Needs

- Water for tourism
- Smart water monitoring and harvesting technologies
- Water security
- Integrated water resource management
- Comprehensive water resource management
- Dam/watershed/reservoir S&T management strategy

Thematic Areas

- Decision support tools
- Localized sensor/monitoring system and technologies
- Infrastructure intervention

Possible Solutions



Vision

S&T based management for sustainable water resources

- ### NAST Foresight
- Small-scale water cisterns to collect rainwater households
 - Water reservoirs through groundwater aquifers with infiltration galleries at strategic areas
 - Infiltration galleries build around houses to deep-percolate into the ground subsurface, minimizing flood risk in case storage tanks for rainfall are full
- Difference**
- Cost-effective and localized tools, methodologies, and technologies

List of Projects (for the whole duration of the roadmap)

R&D Technologies	Project Title	Budget Allocation ('000)						Status
		2021	2022	2023	2024	2025	2026	
Establishment of Smart Water Infrastructure and Management R&D Center (SWIM R&D Center)	SWIM P1: SMART WATER RESOURCES PLANNING AND MONITORING	25,411	7,087	5,705	-	-	-	On-going
	SWIM P2: Integrated assessment and analysis of hydraulic assets for sustainable and resilient flood control infrastructure	10,418	3,014	3,526	-	-	-	On-going
	SWIM P3GIS-Based Decision Support Tool in Managing Urban Water Infrastructure with Stormwater Intervention for Smart Cities: A Case for Cauayan CityElevated	9,514	3,255	-	-	-	-	On-going
	SWIM P4: Smart Water Control Infrastructures for Effective Irrigation Management	5,549	3,785					On-going
Water for Tourism	Boracay P1: Water for Tourism: A Science-Based Water Resource Monitoring and Management Planning Guide for Tourist Destinations in the Philippines	7,681	3,132					Completed
	Boracay P2: Hydrological Characterization of Boracay Island's Groundwater System and Nabaoy Watershed using Isotope and Nuclear-based Analytical Techniques	4,211	1,081					Completed



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BAGONG PILIPINAS

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		2021	2022	2023	2024	2025	2026	
Sedimentation monitoring and mitigation system and Technologies	SEDI: Sediment Evaluation and Development of Intervention				9,394	7,088		New
Establishment of Mountain Engineering Center Towards Sustainable Infrastructure and Upland Water Security	Boondock P2: Improving the Livelihood of MSMEs thru Cable Supported Water and Transport Infrastructure	7,863	6,788					On-going
	Boondock P4: Development of Artificial Groundwater Recharge Facility for Drought and Flooding Mitigation	4,463	3,066					On-going



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		2021	2022	2023	2024	2025	2026	
Integrated Water Resource Management	IFWARM: Integrated Flood and Water Resources Management in the Asean Basin for Sustainable Development	7,505	7,268					Completed
Smart Water Meter	IOT: IoT (Internet of Tubig) : Development of smart water meter wireless network	4,695						Completed
Green Infrastructure System	Rainstech: Rainfall and Stormwater Runoff Management Technology for Tropical Catchment (RainS-TECH)			9,700	9,084	8,225		On-going
	Batanes 1: Structural Strength of a Smart Engineered Greenhouse Across Varying Wind Loads in the Islands of Batanes				8,341	4,314		New
	Batanes 2: Science and Technology-Based Interventions for Sustainable Tourism in Batanes				15,481	6,793		New
Dam/watershed/Reservoir S&T Management Strategy	Darma: Dam Risk Management Decision Support Tool			7,689	4,954			On-going



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Development of drought and flood mitigation systems and technologies	Cloud P1:							
	Cloud P2:							
Groundwater investigation for emerging contaminants	LASER: Luzon Arsenic Source Tracing and Extent Mapping with Risk Mitigation and Engineering Intervention			10,731	8,596			On-going

