Updated as of 10 November 2023

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 resourcé

management strategy

management □Dam/watershed/reservoir S&T

Thematic Areas

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

105M

- 100M Establishment of Mountain Engineering and Center Towards Sustainable (SWIM) Infrastructure and **Upland Water**
- (BOONDOCK) Water for Tourism

Security

- Integrated water resource management (river basin approach)
- Smart water meter

2021

Decision support tool for water management

- Groundwater management plan and monitoring system
- · Automated real-time monitoring system for dams and reservoir
- Forecasting models for water supply using artificial intelligence

- Establishment of Smart water infrastructure management **R&D Center**
- UK-PH Water security program

2022

- Urban storm water storage
- · Automated water measurement and control systems for dams

Decision support tool for water management

 Integrated water planning guidelines for tourist islands and river basin

Smart flood monitoring remediation and mitigation

2023

100M

Comprehensive

water resource

Dam/watershed/i

management

eservoir S&T

management

Infrastructures

Sedimentation

monitoring and

mitigation system

and technologies

strategy

System

Green

- Science-based Assessment. Design and Development of Water Resources Projects and
- Advanced modeling softwar Interventions e and intervention of saltwater

100M

· Community-

harvesting

based water

technologies

Smart farming

management

· Development of

flood mitigation

2024

drought and

systems and

technologies

systems

innovative water

Innovative dam/watershed/r eservoir

- management Science-based **Upland River and** Spring Water Assessment and
- Water auditing/accounti ng Management
- Established intrusion

250M

- Development of drought and flood mitigation systems and technologies
- Groundwater investigation for emerging contaminant

Possible Solutions

100M

- SS&T advancement and support for NIA and **NWRB**
- S&T Support for Water Infra

2025

- Hybrid water harvesting system
- Established comprehensive water resource assessment tools and technologies
- · Water supply and demand monitoring and modelling systems and technologies
- Established green infrastructure systems/technologie s and guidelines
- sedimentation monitoring and mitigation system and technologies

 Nationwide comprehensiv e water resource assessment Advancement O&M for water supply facilities

2026

Integrated

Artificial

system

sourcing,

emerging

community based

rainfall generating t

management

echnologies

Innovative water

saving/recyling

Assessment,

monitoring and

intervention for

contaminants

technologies and

250M

 Nationwide comprehensive water resource assessment

200M

 Nationwide comprehensive water resource assessment

2028

Vision

S&T based management for sustainable water resources



- Saltwater intrusion intervention Recharge wells
- (recharge canals) Physical sub-surface
- barriers Smart systems for water resource monitoring
- Modular water desalination system
- Smart water supply facilities
- Flood protection and defense system technologies
- Science-based design and demonstration of water infrastructures

- · Integration of developed technologies for smart cities
- Standard designs for effective water resource management

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





OneDOST4U

