

Research and Development Opportunities Arising from the World Bank Activities in Water Sector in Indonesia

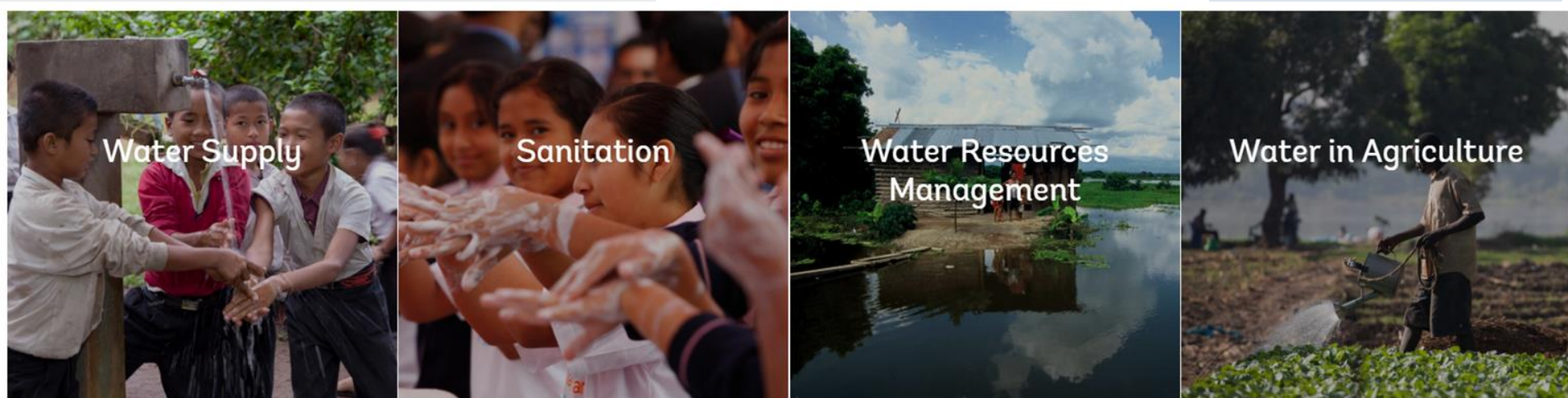
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Presentation Outline

- Introduction to World Bank Water Global Practice and Sector Context (global and Indonesia context)
- Water GP activities in Indonesia
- R&D Opportunities in WASH Sector in Indonesia

Introduction to the World Bank Water Global Practice

Focus Areas



THE WORLD (AND INDONESIA) FACES AN ACUTE WATER CRISIS

60%

World population living in water-stressed basins

In Indonesia more than half of GDP generated in water stressed basins and around 85% population exposed to fecal and coliform pollution in water bodies



Water scarcity could cost some regions up to **6% of GDP**

In Indonesia unaddressed water stress will reduce up to 7.3% GDP in 2045



3 in 10 people lack access to safely managed drinking water

In Indonesia access to safe drinking water is at around 11.9%

6 in 10 people lack access to safely managed sanitation

In Indonesia access to safely managed sanitation is 7.6%



More than half of the world's aquifers are past sustainability tipping points

In Indonesia, excessive groundwater abstraction caused land subsidence



Climate change is to likely increase the frequency and severity of **floods and droughts**

In Indonesia, most services providers do not have plan for climate change and disaster risk adaptation and mitigation



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THE WATER SECTOR REQUIRES MASSIVE INVESTMENT

Total estimated cost for Indonesia to achieve RPJMN target in water supply and sanitation 2020-2024 is more than \$20 billion (\$5 billion annually)

\$150 billion

Annual cost to deliver universal access to safe water and sanitation



\$14 billion

Non-revenue water costs for utilities each year

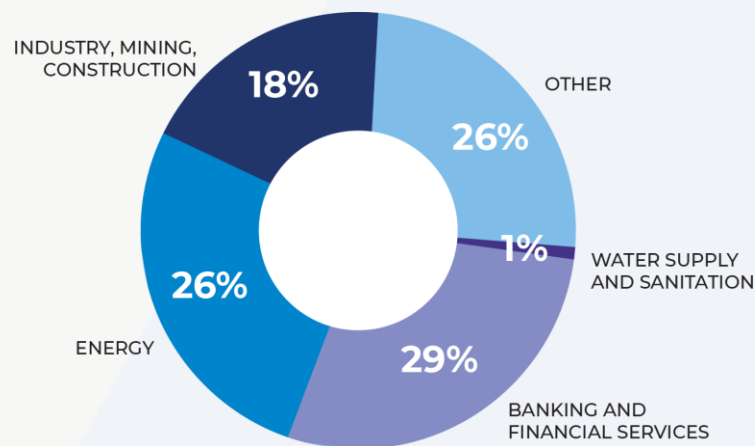
\$960 billion

In 93 developing countries, the financial support required for irrigation through 2050

\$139 billion: Clean energy

\$8 billion: Water
Global investment in innovation 2000-2013

COMMERCIAL FINANCE MOBILIZED BY
DEVELOPMENT FINANCE, 2012-2017



Source: OECD

THE WORLD BANK WATER GLOBAL PRACTICE: DELIVERING A WATER-SECURE WORLD FOR ALL

Water for People

Universal Access to Water and Sanitation
Health and Education
Cities



- Sustaining water resources
- Deliver services
- Build resilience



*Investments,
knowledge,
partnerships,
innovation*

Water for the Planet

Sustaining the Resource
Sharing the Resource
Ecosystems
Biodiversity



Water for Production

Food Security
Jobs
Industry
Economic Recovery



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Water GP Activities in Indonesia



On-going Operations – Lending

National Rural Water Supply and Sanitation Project - PAMSIMAS III

- Project Development Objectives (PDO): To increase the number of under-served rural and peri-urban population accessing sustainable water supply and sanitation
- Executing Agency: DG Human Settlements, Ministry of Public Works and Housing (MPWH) + CPIUs in MOHA, MOH, MOV

National Urban Water Supply Project

- PDO: To improve access to, and operational performance of water supply services in select urban areas
- Executing Agency: DG Human Settlements, MPWH + CPIU in MOHA

Dam Operational Improvement and Safety Project (DOISP)

- PDO: (i) Increase safety & functionality of dams owned by MPWH in selected location and (ii) Strengthen the operation and management capacity for dam safety
- Executing Agency: DG Water Resources, MPWH

Strategic Irrigation Modernization and Urgent Rehabilitation Project -SIMURP (\$250 million)

- PDO: (i) Improve irrigation services, and (ii) Strengthen accountability of irrigation schemes management
- Executing Agency: DG Water Resources, MPWH + CPIU at MOHA

On-going Operations – Analytical and Advisory Services

Towards Water Security and Integrated Urban Water Management

- Water Security Diagnostic
- Pathways Towards Integrated Urban Water Management in Greater Jakarta
- National Framework for Integrated Urban Water Management in Indonesia

Support for the National Urban Water Supply Program

- Development of compendia:
 - Private Sector Participation in water supply (framework, guideline and templates for BtoB, PBC and Trade Credit), Regional Water Supply Development (framework, guideline and templates), Financial Management of Water Utilities (Tariff modelling, rapid financial assessment of COVID impact)
- Bring in new technology and approaches for water treatment – HFNF for peat water, zeolite filtration for groundwater

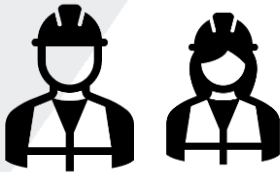
Support for Advancement of Citywide Inclusive Sanitation

- CWIS framework and guideline, city assessment tool
- Collaborative support with Korean Environment and Industrial Technology Institute for preparation of CWIS investment – pre-FS for Kota Balikpapan and FS for Kota Bogor

Building resilience water utilities – capacity building

Global studies and initiatives: Utility of the Future, Water Secure Cities, Water in Circular Economy, etc.

R&D Opportunities in WASH Sector in Indonesia



The need is huge...

Aging infrastructure and “old” technology

- Need more R&D for innovative technology and approach for infrastructure that are resilience, small footprint, simple to operate and cost effective, can support circular economy – Indonesia is very diverse, the more option available the better
- Water treatment and wastewater treatment plant, operation and maintenance (leak detection, smart metering, energy efficiency improvement, etc.)

Vulnerability to climate change and disaster risk

- Hydrometeorology data set, database and modelling to be incorporated in utilities work plan and business plan
- Disaster risk and hazard mapping, early warning systems, mitigation and contingency planning

Investment need is huge, yet investments are often not well targeted thus not effective and efficient

- Governance - Simple tools to help LGs to conduct economic and financial analysis in selection of suitable institutional set up for service provision and identification/development of local regulations
- Investment/financing - Increase understanding and literacy of LGs and utilities on various financing schemes, tools to help LGs and utilities in identifying suitable source of financing for different types of investments
- IoT - to support efficient operation, asset management and financial management, service improvement, monitoring and evaluation of key performance indicators

Theoretical vs Practical

- Universities/academy need to broaden the scope of research by including assessment of the real operational aspect
- Collaboration with utilities, governments' R&D institutions (e.g. MPWHs BTAM, BTSAN), industry/private sector (i.e. real estate developers) to pilot the approach

Limited HRD – low quality of consultancy services, low quality of design and planning documents, lack of capacity for strategic and out of the box thinking (need to attract more young generation to work in the sector)



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Question

Terima Kasih Thank you

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