

CENTRALIZED WASTEWATER SYSTEM APPROACHES IN URBAN ENVIRONMENT

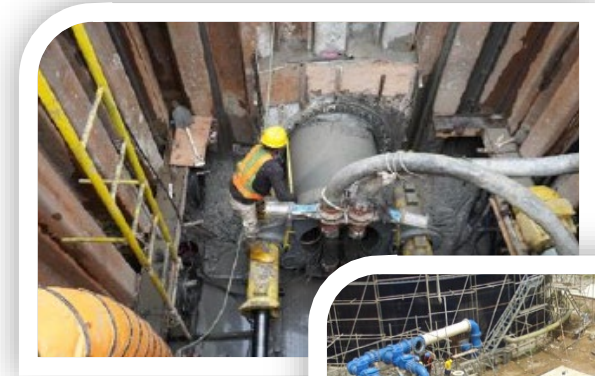
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Ministry of Public Works and Housing

INDONESIA



MINISTRY OF PUBLIC WORKS AND HOUSING
DIRECTORATE GENERAL OF HUMAN SETTLEMENT



**WATER
&
WASH** 2023
FUTURES

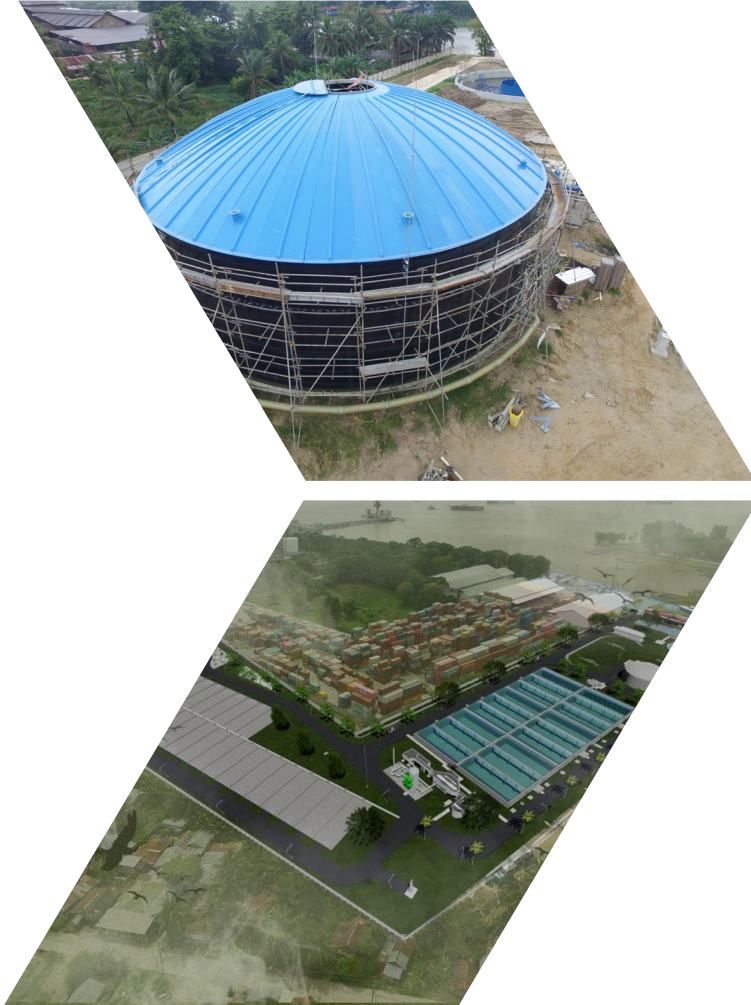
Achieving SDG6 in a Changing Climate



#WaWF23

PALEMBANG CITY SANITATION PROJECT

OUTLINE



Sanitation Sector in Indonesia



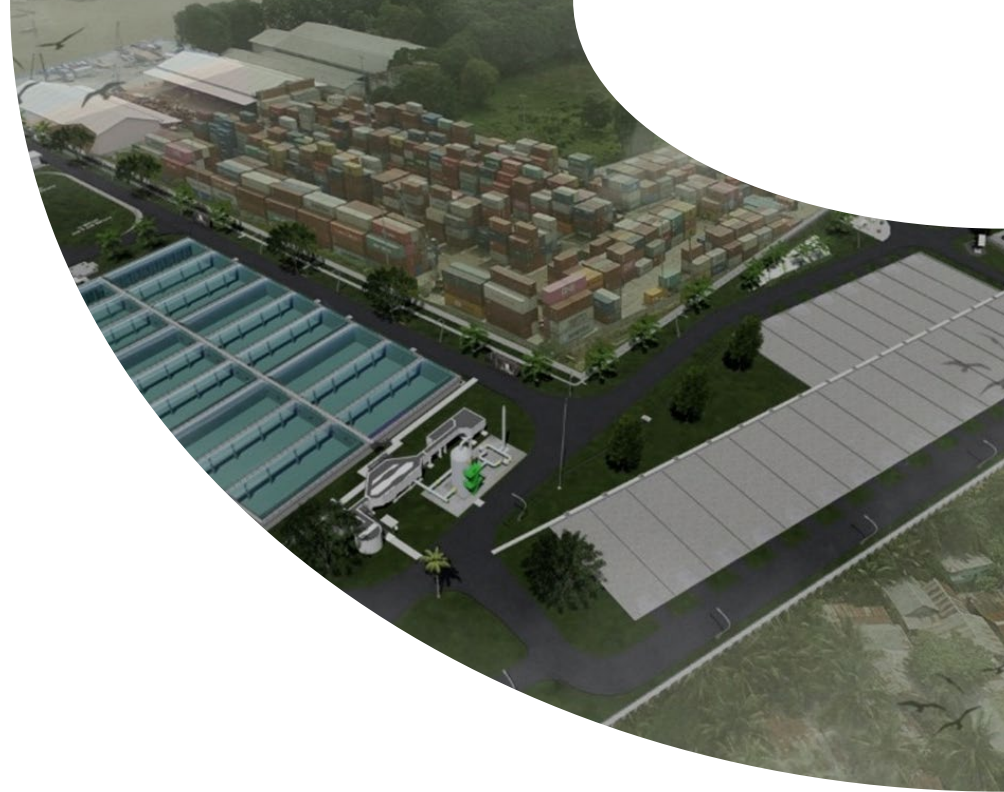
Accelerating Progress



Palembang City Sanitation Project



Key Learnings



Sanitation Sector in Indonesia

SANITATION SECTOR IN INDONESIA

Goals and Targets

SUSTAINABLE DEVELOPMENT GOALS 6

Ensure availability and sustainable management of water and sanitation for all

Goal 6.2

Moving from Open Defecation toward Safely Managed Sanitation

Goal 6.3

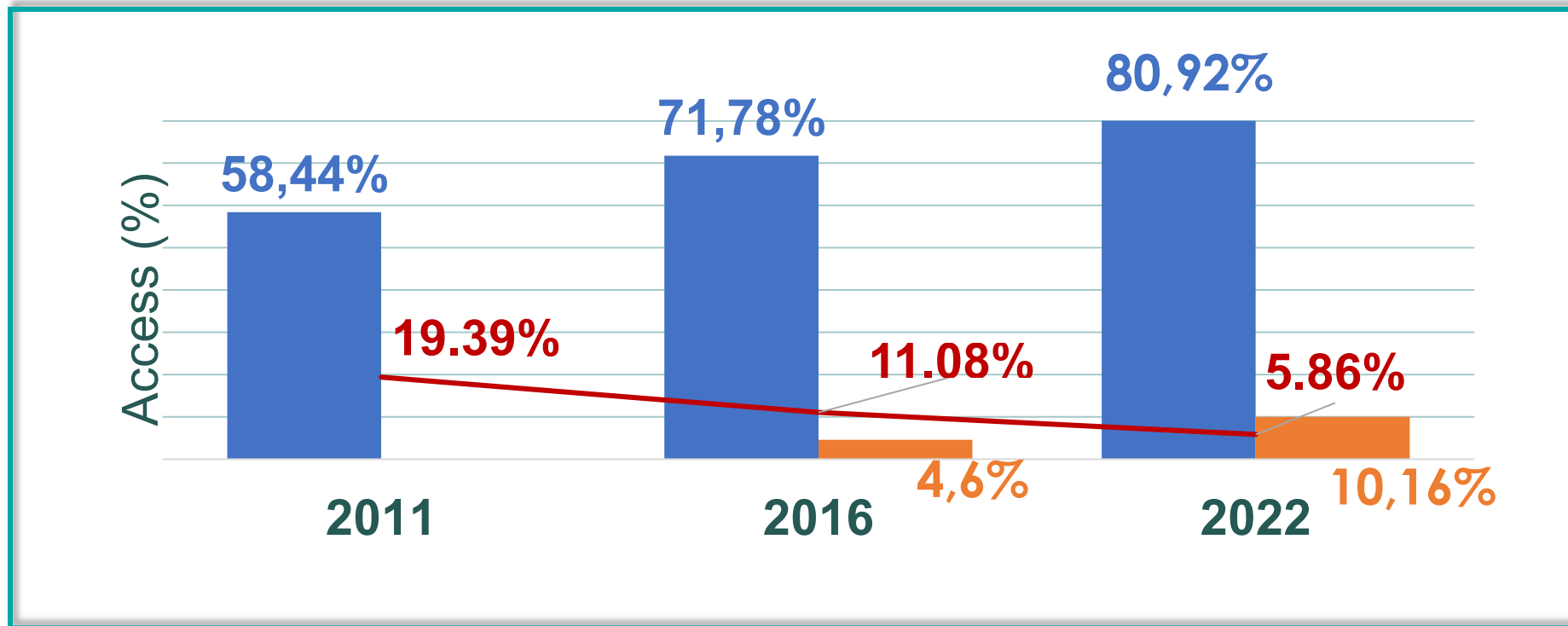
Improve water quality by halving the proportion of untreated wastewater

National Medium-Term Development Plan (2020-2024)

- 90% basic access (including 15% safely managed access)
- 0% open defecation

SANITATION SECTOR IN INDONESIA

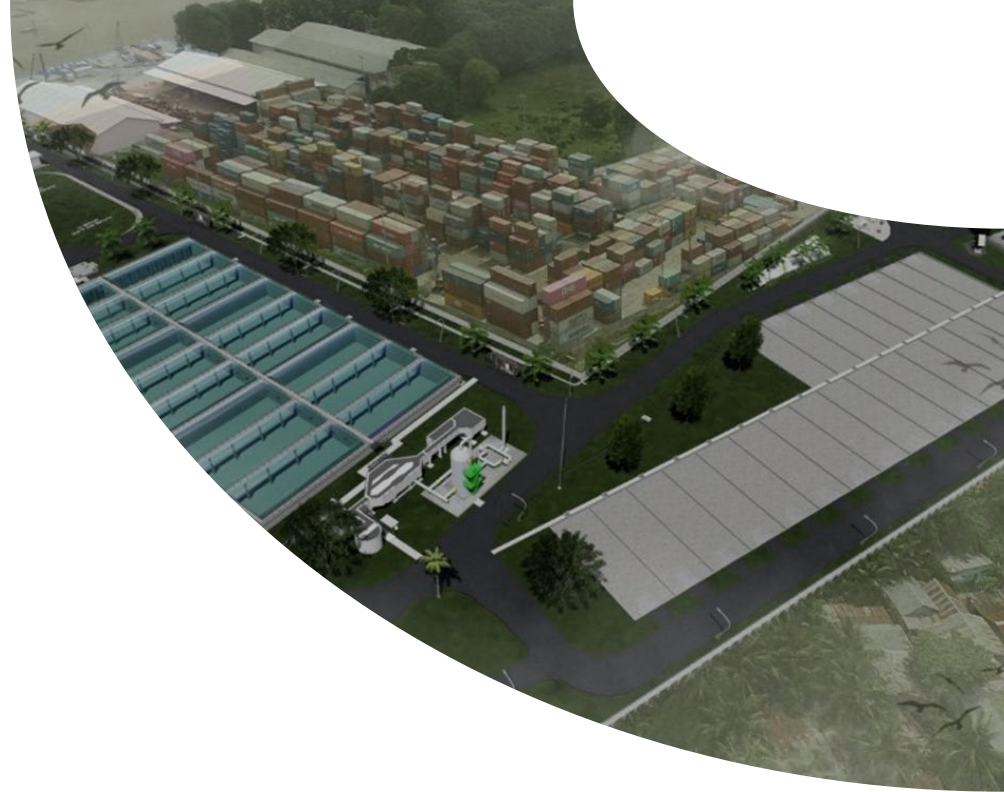
Current Status



■ Basic Access ■ Safely Managed Access ■ Open Defecation

Growth rate on access to access sanitation 2011-2022: **±2% /year**

Reduction rate of Open Defecation (OD) 2011-2022: **±1,2% /year**



Accelerating Progress

WASTEWATER SECTOR POLICY

MINIMUM SERVICE STANDARD

Govt. Regulation No. 2/2018

MoPWH Regulation No. 29/PRT/M/2018

“Every Household has **at least one access** to domestic wastewater treatment **through On-Site or Off-Site system**”

Rural area with density
<25 persons/ha



Rural Basic
Access



All urban area and
rural area with density
>25 persons/ha



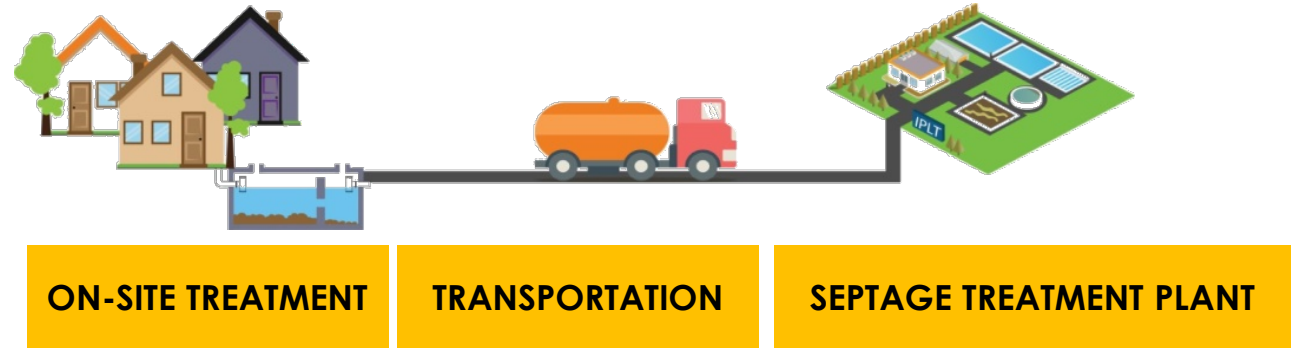
Safely Managed
Access

CITYWIDE INCLUSIVE SANITATION TOWARDS SAFELY MANAGED SANITATION ACCESS

Integrating sanitation services by combining on-site system and off-site system to ensure the provision of services can be accessed by all citizens.

Main factors:

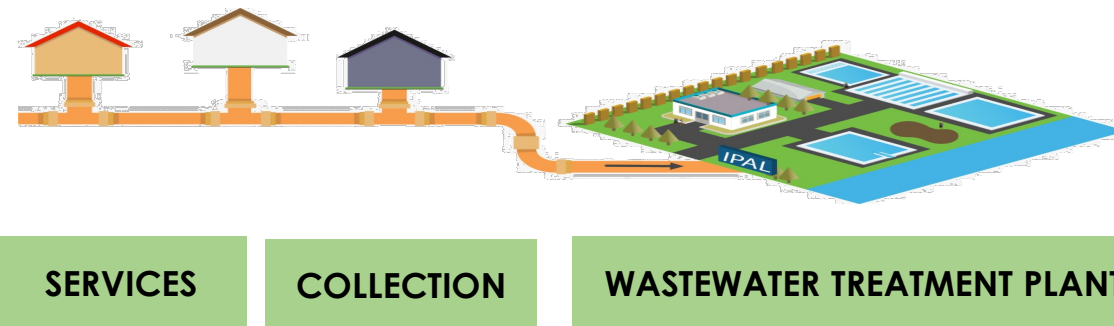
- Stakeholder collaboration
- Combination of sanitation system
- Strengthening the framework of regulation and institution
- Multiple funding sources
- Inclusive target beneficiaries



On-Site System: Utilization of standardized on-site treatment complete with regular desludging and septage treatment plant

or

Off-Site System: Utilization of sewer system and centralized wastewater treatment plant



SAFELY MANAGED SANITATION CONTRIBUTION TO CLIMATE CHANGE ISSUES IN INDONESIA

Wastewater management has the capacity to **anticipate, prepare, response, recover, and develop** from the **impact, risk and vulnerability** due to the climate change.



Drought causes a water crisis in a certain area. The provision of safely managed sanitation access can support the continuation of the provision of safely managed drinking water access.

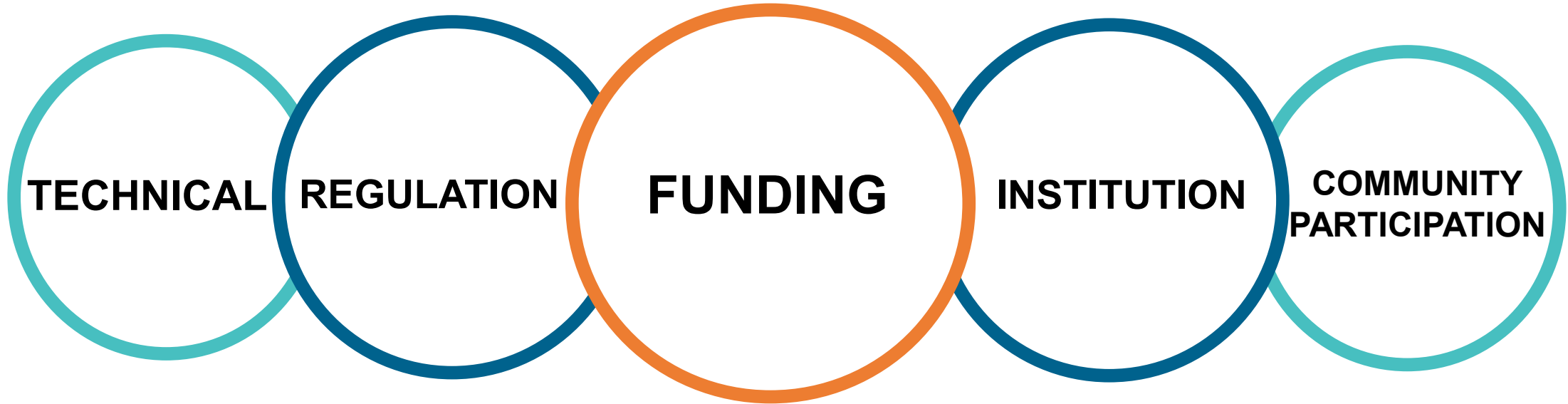


Due to the unpredictable high rainfall intensity and flooding probability, it is important to sustain safely managed sanitation access to hinder the contamination of domestic wastewater in flood overflow water.

Adaptation: e.g. application of proper pipe accessories to prevent leakage; development of bypass channels for flood control and adjusting the level of WWTP according flood repetition estimation.

Mitigation: e.g. optimization of the product recoveries (biogas, sludge, water & nutrients); and management of the carbon emission.

ISSUES TO ACCELERATE SANITATION ACCESS IN URBAN AREA



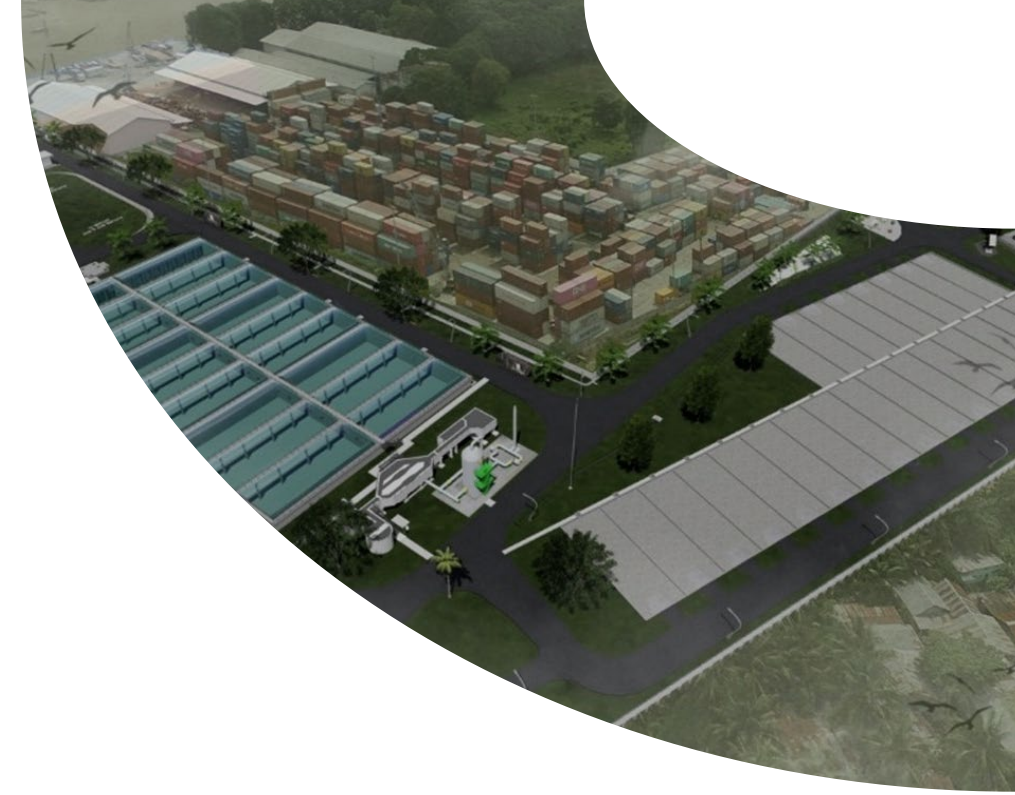
Limitation for land availability and constraints in advanced technology application.

Insufficient Local Government Regulation and poor law enforcement.

Limitation to providing sufficient funding for infrastructure development and alternative financing mechanisms to fill the funding gap.

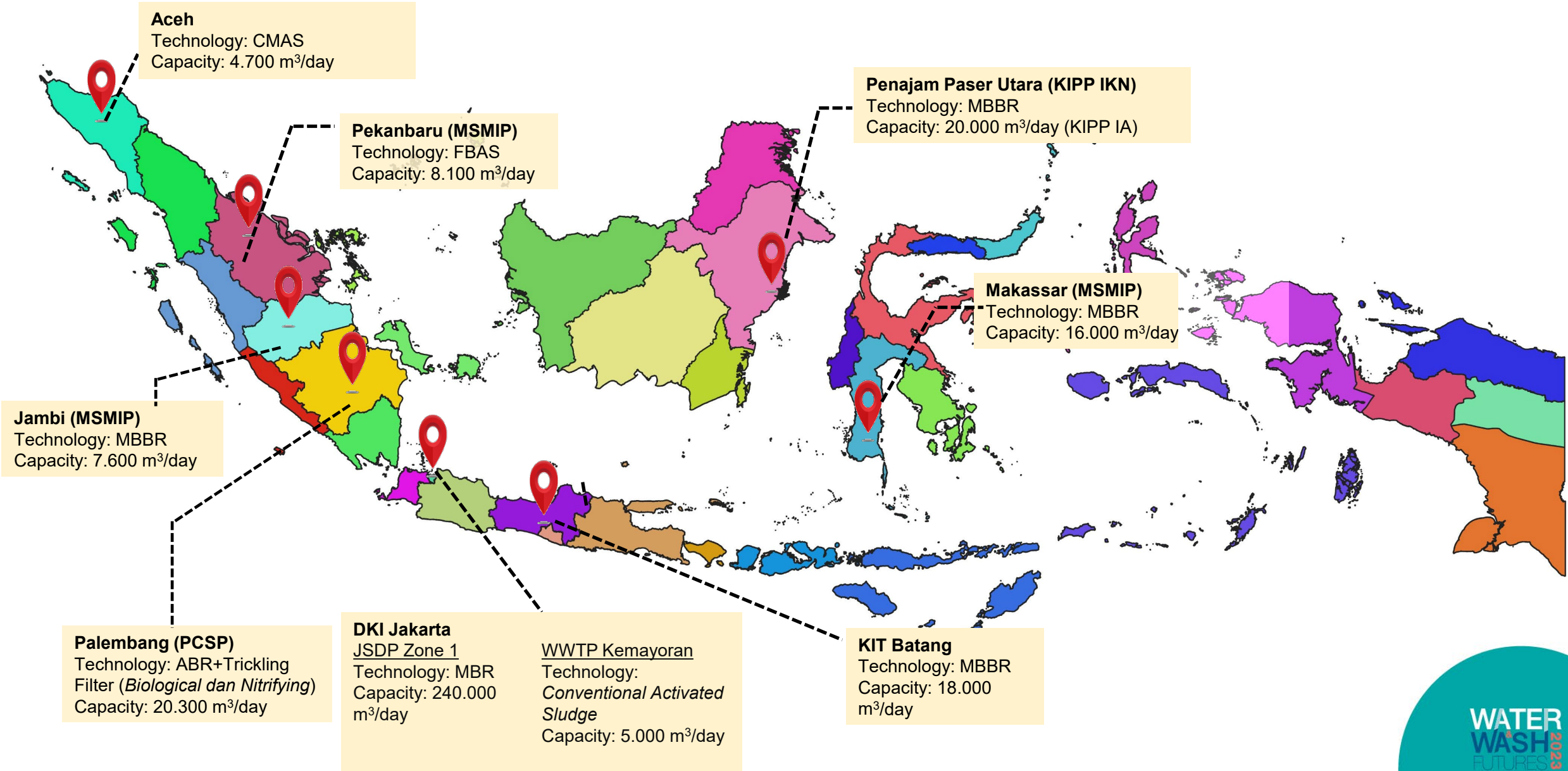
Inefficient regulatory system and limited capacity of human resources.

Poor community awareness and insufficient supply & demand of sanitation services.



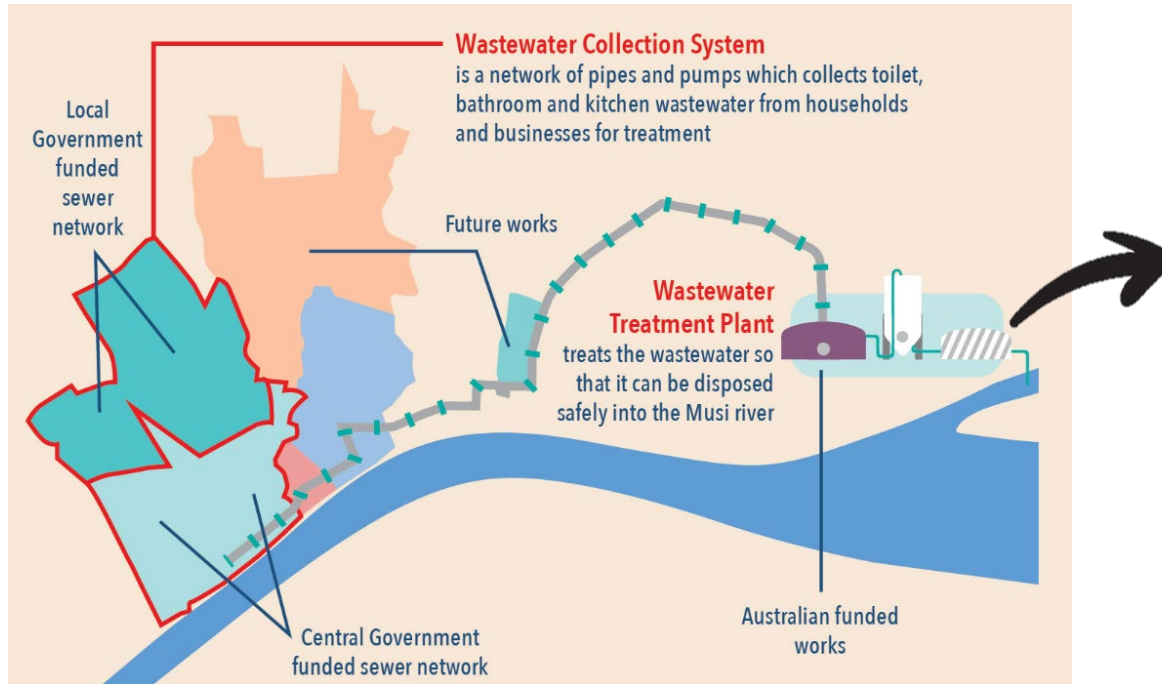
Palembang City Sanitation Project

SEWERAGE CITY SANITATION PROJECT (ON-GOING)



PALEMBANG CITY SANITATION PROJECT (PCSP) – 1/4

What is Palembang City Sanitation Project ?



WHY CHOOSE PALEMBANG CITY?:

“ Highly committed Local Governments on sanitation infrastructure development through fulfillment project readiness, e.i land acquisition, fiscal capacity, environmental documents clearance, institution preparation, etc ”

How does it differ from the 'usual' approach ?

1 Output-based grant funding mechanisms supported by GoA, through pre-financing funding by Palembang City Government. GoA Grant funds (2017-2024) are used to reimburse Palembang city (local government) for the wastewater treatment plant and pumping station costs.

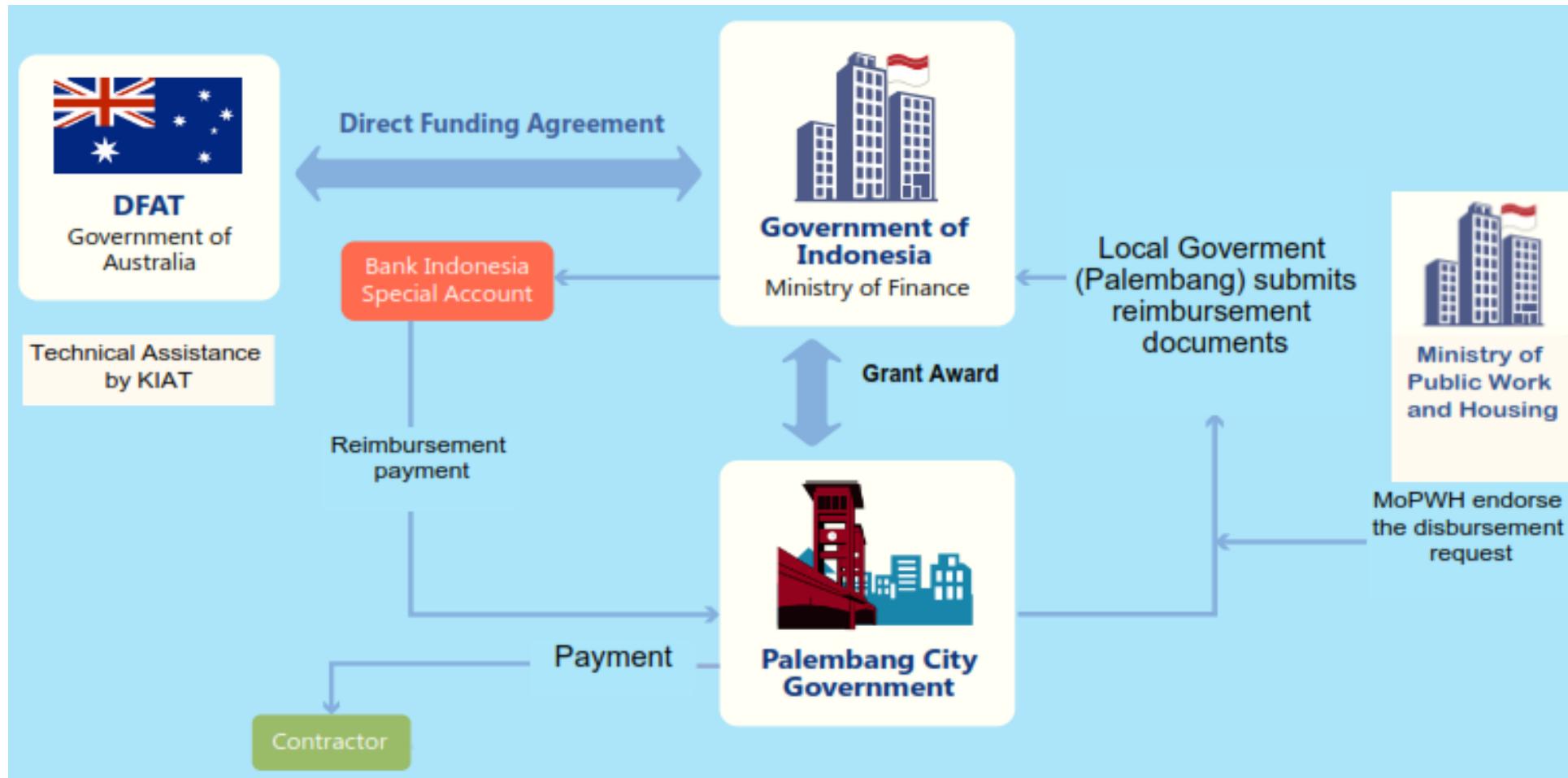
2 Allowing the local government directly manages for construction (procurement and supervision), and sustain the services through operation and maintenance.

3 Aligned with GOI policy for decentralization and regional autonomy.

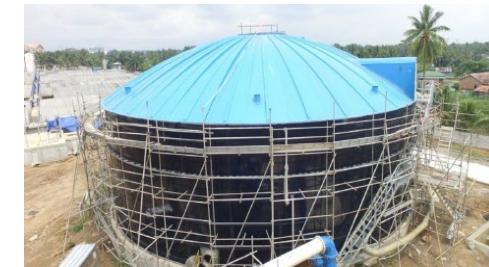
PALEMBANG CITY SANITATION PROJECT (PCSP) – 2/4

Output-based grant mechanisms:

based on MoF Regulation No. 224/2017 on Grant Management from Central Government to Local Government



Wastewater Treatment Plant (WWTP)



Biological Trickling Filter (BTF)



Pumping Station



PALEMBANG CITY SANITATION PROJECT (PCSP) – 3/4

Multi-funding sources:



Components and Responsibilities	Sources		
	DFAT (Output Based Grants from Australia Grants)	DGHS (APBN)	Local Government (Palembang City & South Sumatra) (APBD)
PCSP Items	Land preparation, WWTP, & pumping station A	Sewer system, <i>pressure main</i> , & 1.000 HH	Sewer system & 11.000 HH
Executing Agency	DGHS, MoPWH		Palembang City
Procurement	Palembang City	MoPWH (BP2JK)	Palembang City
Executor	Palembang City	MoPWH (DJCK)	Palembang City



PALEMBANG CITY SANITATION PROJECT (PCSP) – 4/4



CAPACITY

Total: 20.300 m³/day

PIPE LENGTH

(funded by APBN)

36,5 km

TECHNOLOGY

Anaerobic Baffled Reactor (ABR) + Biological Trickling Filter (BTF) + Nitrifying Trickling Filter (NTF)

INSTITUTION

Integration of domestic wastewater management into role of Water Utility (Perumda Tirta Musi)

BENEFICIARIES

± 100.000 persons

PROGRESS

* December, 2022

WWTP:
90,65% (Grants Funding Australia Government)
Sewerage:
91,28% & 88,45% (GOI)



SUPPORT ACTIVITIES FOR PCSP

▶ **Capacity Development of PCSP Service Delivery Organization (SDO) Perumda Tirta Musi**

Capacity development of Perumda Tirta Musi to manage, operate and maintain PCSP infrastructure (including the preparation of domestic wastewater tariffs).

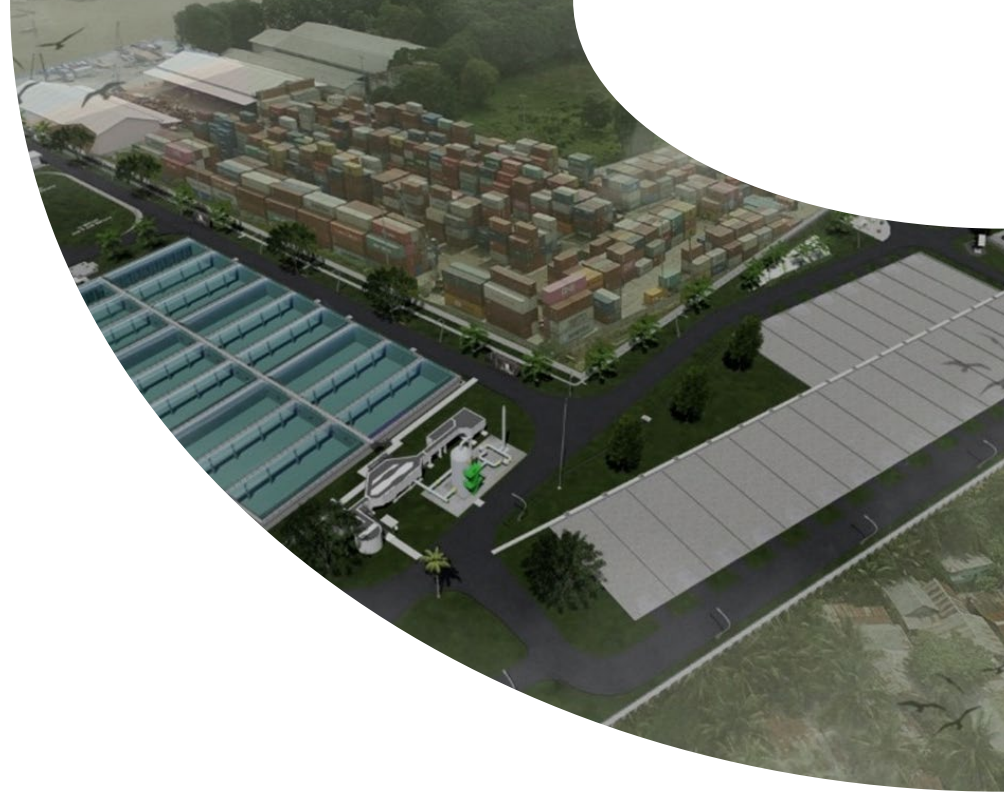
▶ **Sanitation Marketing Program**

Sanitation marketing and awareness raising of community and promotion of health, hygiene, & the benefits of safely managed sanitation.

▶ **Climate Resilience Pre-Feasibility Study**

Assessment of Palembang City sanitation infrastructure, including embedded carbon assessment, climate risk assessment, resource recovery opportunities, and renewable energy co-generation.

KEY LEARNINGS



KEY LEARNINGS

- 1 Create strong coordination** between multiple stakeholders and institutions in the sanitation sector (Central Government, Local Government, Donors, and Partners).
- 2 Encourage innovation in funding mechanisms:** pre-financing by local government through output-based grant mechanisms. **Documenting the challenges and solutions** to implementing large-scale sanitation through a decentralized funding and implementation model.
- 3 Promote behavior change of people** to understand and implement WASH activities and connect to sanitation infrastructure when provided.
- 4 Climate-resilient sanitation is needed** to ensure infrastructure sustainability in the face of potential future climate driven shocks.



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THANK YOU

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