附件一

水利署簡報

臺灣水資源管理與強化水資源韌性的策略

Water Resource Management and Strategies for Enhancing Water Resilience in Taiwan

Water Resource Agency,
Ministriry of Economic Affair, Taiwan

Aug 14, 2025

Content

I. Water Environment and Challenges in Taiwan

II. Strategies for enhancing Water Resilience

III. Developing Desalinated and Reclaimed water

IV. Conclusion and Future vision

1

I. Water Environment and Challenges in Taiwan

Taiwan is an island in South East Asia, has a subtropical climate

2

1.Rainfall & Reservoirs

Avg. annual rainfall : 2,500mm, but concentrated in wet season

Taiwan has 95 reservoirs, supply for 30% water demand

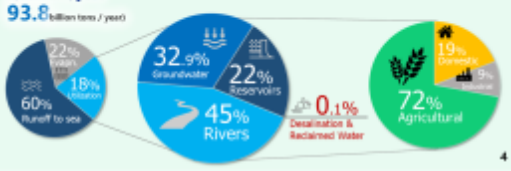
3

2.Water utilization

Total water consumption : 17 billion tons per year

Precipitation
2,500mm/year
93.8 billion tons / year

(only 18% of the precipitation)



4

3. Water challenges with extreme rainfall

(IPCC AR6 scenario)

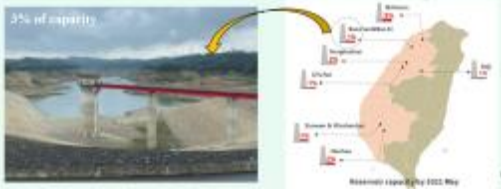
- Consecutive days without rainfall: increase 5.5%~12.4%
- Maximum daily rainfall intensity: increase 20%~41.3%
- Frequency of typhoon hits: decrease 15%~55%

Floods Droughts Sediments

5

Taiwan suffered a 100-year drought in 2021

Only 30% of average rainfall, caused major reservoirs dropped to the lowest point and severe water scarcity.



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Developed emergency water to mitigate impacts

Drill wells | Allocate pipeline | Desalination plant

Construction site groundwater reused | Mobile water purification equipment | Subsurface-flow water

Containerized desalination plant provided fresh water quickly

- Containerized desalination plant, mobile and capable of rapid water production, suitable for drought disasters.
- Hsinchu plant: Assembled and produced water in 66 days; Taichung plant: 51 days

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II. Strategies for Enhancing Water Resilience

- Hosted the National Water Forum, where over 125 groups and 600 people participated,.
- Discussed water security and development, and reviewed the master plan for water management.

9

Four strategies to robust water resilience

Goal to achieve a more diverse, flexible, and reliable water supply

1. Diversify Water Resources
   - Artificial lake
   - Reservoir
   - Groundwater
   - Backup water
   - Subsurface water
2. Water Distribution Network
   - N→S Transfer
   - C→N/S Transfer
   - S→N Transfer
3. Technological Water Generation
   - Reclaimed water
   - Seawater/Brackish water Desalination
4. Strengthen management
   - Conservation
   - Reducing water leak
   - Reservoir dredging
   - Digital/AI application

10

Showcase 1: Maintain reservoir storage capacity

- Adopting excavation, hydrosuction and hydraulic desilting to remove reservoir sedimentation.
- Hydraulic desilting is the most cost-effective measure.

0.7 million m³ sediment was flushed away in 26hrs.

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Showcase 2: Diversify water resources to combat drought(1/2)

Increased 2.37 million tons of water per day Since 2017
(equivalent to 22% of Taiwan's water consumption)

Artificial Lake

Drill wells

Hyporheic Flow

Spillway Raising

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Showcase 2: Diversify water resources to combat drought(2/2)

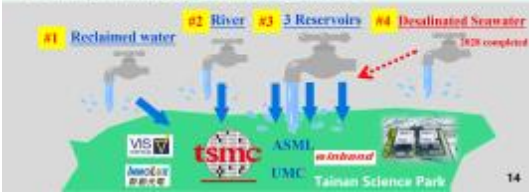
- 2015 drought : Gao-Ping river descended to 8.9 CMS, Kaohsiung city announced zoned supply
- 2023 drought: the same flow, stable water supply

The Gao-Ping River serves as the primary water source for over 2.7 million residents of Kaohsiung City

13

Showcase 3: Redundancy backup for high tech park

- As an example, the Tainan Science Park features 3~4 water sources, 5 main pipelines, and 165% redundancy water supply
- Ensuring normal supply even if one system fails

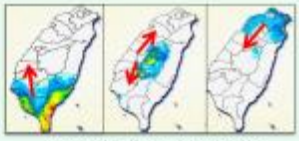


14

Showcase 4: Smart Allocation - Efficient Water Use

- Real time monitoring climate change, responding quickly and effectively, and using every drop of water.

Water resources cloud structure

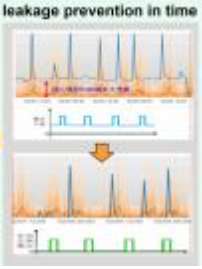


Real time water source deployment

15

Showcase 5 : Smart water network

Dynamic monitoring water pressure and leakage prevention in time



16

Showcase 6: Smart irrigation – accurate water supply

- Grasp the meteorology of field and optimize water distribution.
- additional 5% of water and manpower can be saved.

17

Showcase 7: Transfer of flood water to resources

- By collaborating with farmers to elevate field ridges, 1,150 hectares in Youcai Village were used for flood detention.
- During Typhoon Kaimi in 2024, successfully preventing flooding in the village.

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Showcase 8: AI Image Recognition in Flood Detection

Applying AI for real-time analysis of flood footage from 8,000 cameras

1.Real-time motoring

2.Image Recognition

3.Flood reporting

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III. Developing desalinated and reclaimed water

Taiwan has great potential to promote reclaimed and desalinated water

Urbanization leads to abundant sewage

Surrounded by sea, has abundant seawater

Taiwan Strait

Pacific

Intense demand of water resilience

20

1.Promting reclaimed water for industry

- 16 plants approved with a production capacity of 634,000 CMD by 2029.
- 7plants are currently producing 172,200CMD.

Water quality

Purify

Recycle Treat Reuse

Re-recycling

- Operating
- Constructing
- planning

21

Showcase1: Reclaimed water for traditional industry

Feng-Shan plant

Reclaimed water

- The first reclaimed water plant in Taiwan
- Production capacity of 50,200 CMD

Supply reclaimed water to China Steel Corporation instead of tap water to enhance water use efficiency.

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Showcase2: Reclaimed water for high tech industry

An-Ping plant

Reclaimed water

tsmc

- Currently available for 37,500 CMD
- Dedicated Pipeline for Supplying Reclaimed Water to the Science Park

- Reclaimed water used in semiconductor wafer processing
- has a recycling efficiency of up to 90%, allowing for reuse after treatment.

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2.Promting desalinated water as insurance water

Taiwan's seawater desalination plants

- ✓ Operating 26 plants with a total production capacity of 44,000 CMD most of which are located on offshore islands.
- ✓ Constructing 3 plant with a total production capacity of 300,000 CMD
- ✓ Feasibility planning for 2 plants with a total production capacity of 80,000 CMD

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Desalination plants under construction and in planning

Constructing		Feasibility Planning
1. Hsinchu Plant ✓ Production Capacity: 100,000 CMD ✓ Budget: 375 Million USD ✓ Procurement mode: EPC ✓ Construction: Starts 2024 ✓ Trial Production: 2027		**1. North Kaohsiung Plant:** ✓ Production Capacity: 200,000 CMD ✓ Environmental impact assessment :2025 ✓ Procurement mode: BOT ✓ Water Production : 2032 ✓ Budget: 695 Million USD
2. Tainan Plant #1 ✓ Production Capacity: 100,000 CMD ✓ Budget: 500 Million USD ✓ Procurement mode: EPC ✓ Construction: Starts 2024 ✓ Trial Production: 2028		**2. Chiayi Plant** ✓ Production Capacity: 100,000 CMD ✓ Environmental impact assessment :2025 ✓ Procurement mode: BOT ✓ Water Production: 2032 ✓ Budget: 760 Million USD

25

Joint Utilization of Desalinated and Rainwater

Natural Rainwater

Desalinated water

Natural Rainwater

Desalinated water (Full Capacity)

Taiwan's winter wind pow can fully meet the electric needs of desalination plar

Wet season (Summer to Autumn)

Dry season (Winter to Spring)

26

key issues of seawater desalination in Taiwan

Key Issues	Current Strategies
Impact of **Brine** on Fishing Harvesting and Marine ecology	✓ Enhanced Brine Discharge Dilution ✓ Enhanced Monitoring ✓ Brine Value-added Applications ✓ Enhanced Communication ✓ Compensation
Impact of **boron** on agricultural and semiconductor wafer	✓ Increase Treatment to Reduce Boron Concentration(2-RO) ✓ Mixing with Other Water Sources
Energy Consumption	✓ Joint Utilization with Rainwater ✓ Energy Recovery ✓ Increase the supply of Green Energy

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IV. Conclusion and Future Vision

Invigorating water market and industry of Taiwan

2025 TIWWwill be held from October 28 to 30 in Taipe

Advantages of Taiwan Industry

- ✓ Reservoir sluicing tunnel
- ✓ Disaster prevention monitoring
- ✓ Reservoir safety assessment
- ✓ Recycled and Reuse water
- ✓ Smart water management
- ✓ AI application

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Thank you for listening

Taiwan

Peak of Yu Mountain in Central Taiwan

Taiwan

Canyon in Hualien County in Eastern Taiwan

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附件二

水利署簡報

向雅加達水務局說明地陷防治

Taiwan's Land Subsidence Prevention: Key Achievements and Experience Sharing

Date：Aug 15, 2025

Presentation Outline

1. Overview of Land Subsidence in Taiwan
2. Key Measures for Land Subsidence Prevention
3. Nature-Based Strategies for Managing Peat Soils in Taiwan
4. Conclusions and Recommendations

1 Overview of Land Subsidence in Taiwan

Due to the rapid industrial development in Taiwan's western plains and the insufficient availability of surface water, the region has long relied on excessive groundwater extraction, leading to land subsidence hazards.

Since 1995, the government has launched a series of land subsidence prevention and mitigation projects, which have yielded significant results.

According to monitoring data from 2024, the total area experiencing notable subsidence across Taiwan has been reduced to only 262.5 km², with the maximum subsidence rate now below 7.0 cm per year.

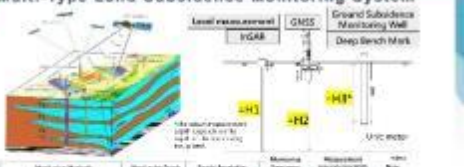
1 Historical Trends of Land Subsidence Across Taiwan

- The significant subsidence area gradually slowed down. In recent years, it has primarily concentrated in the Changhua, Yunlin, Chiayi, and Pingtung areas.
- Affected by extreme weather, there may still be a large subsidence area in dry years (in 2019, 2021, and 2023, the extent of drought subsidence expanded, but it slowed down in the following years).

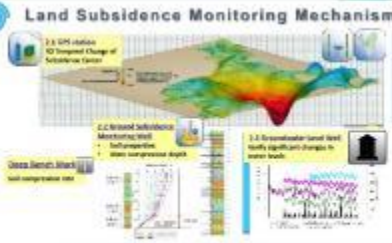
Poor water conditions can lead to significant changes in land subsidence

1 Yunlin County: Distribution of Diverse Monitoring Equipment in Significant Subsidence Areas

1 Multi-Type Land Subsidence Monitoring System

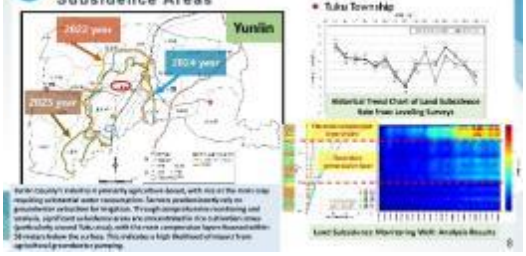


1 Land Subsidence Monitoring Mechanism



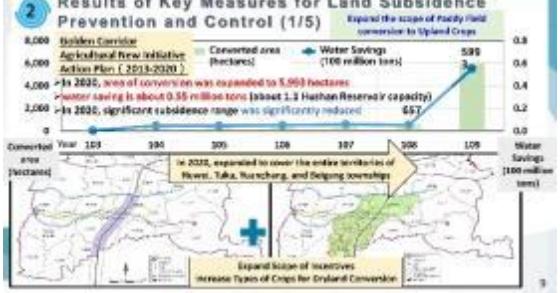
2. Mechanism analysis: Identify the soil compression depth and the corresponding groundwater level changes (Different industries will pump water at different depths)
3. Suggestions for the prevention and control of land subsidence mitigation

1 Yunlin County: Diverse Monitoring in Significant Subsidence Areas



2 Results of Key Measures for Land Subsidence Prevention and Control (1/5)

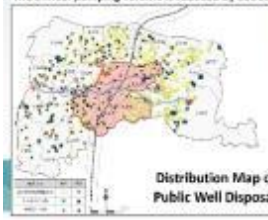
Expand the scope of Paddy Field conversion to Upland Crops



2 Results of Key Measures for Land Subsidence Prevention and Control(2/5)

Public deep well management

In Yunlin, 904 public deep-water wells have been disposed of from 2011 to 2023：
The annual pumping volume is reduced by about 100 million tons



Number of public wells disposed

Management method	2011-2023 of results			
	Drawdown less	Deactivated	Grouting	sum
Yunlin Management Office, Agriculture and Fisheries Department	315	202	22	539
Water Company	-	135	51	186
Taiwan Sugar Company	8	-	3	11
Elementary and junior high schools	31	-	137	168
sum	354	337	213	904

2 Results of Key Measures for Land Subsidence Prevention and Control (3/5)

Construct reservoirs to increase surface water supply

- In 2015, Hushan Reservoir officially supplied water
- → Combined with Jiuwei to improve the stable water supply capacity of Yunlin's surface water to 95.2 tcpd/day
- Increase surface water supply to reduce groundwater demand

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2 Results of Key Measures for Land Subsidence Prevention and Control (4/5)

Conduct recharge in coordination with river channel dredging

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2 Results of Key Measures for Land Subsidence Prevention and Control (5/5)

- In 2015, completed the removal of embankment soil for the HSR crossing over Taiwan Provincial Highway 78
- Column angular variation reduced annually after weight reduction

Column angular variation x 1/1500

2014 to 2022 period

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2 Future Priority Tasks for Land Subsidence Prevention and Control

Reduce groundwater extraction

- Special Zone Project for Crop Conversion (Ministry of Agriculture, Ministry of Transportation and Communications, County Government)
- Agricultural Water Management Operations - Channel Improvement and Additional Regulation Storage Facilities (Ministry of Agriculture)
- Increase Surface Water Supply and Strengthen Well Management (Ministry of Economic Affairs, County Government)

Recharge groundwater

- Expand River Channel Recharge (Ministry of Economic Affairs)
- Sand Column Recharge (Ministry of Economic Affairs, County Government)
- Farmland Recharge (Ministry of Economic Affairs, Ministry of Agriculture)

Load Reduction and Land Use Control

- HSR Corridor Land Control (Ministry of Transportation and Communications)
- Land Use Control (Ministry of the Interior)

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3 Geological Environment of Peat Soil in Toushe Basin

- Toushe Basin, located in Yuchi Township, Nantou County, central Taiwan, is renowned for its peat soil geology, covering approximately 600 hectares.
- The basin is surrounded by mountains on all sides with only one drainage outlet on the northwest side, forming a closed structure that makes drainage difficult.
- The main activity area for residents is located within an area of approximately 160 hectares surrounded by Provincial Highway 21 and County Route 62, where peat soil is distributed over about 50 hectares with depths ranging from 45 to 80 meters.
- The central part of the basin has flat terrain, primarily consisting of agricultural or abandoned farmland, with taro being the main crop. Since the crop is intolerant to waterlogging, the farmland requires rapid drainage, which accelerates peat soil oxidation and leads to carbon source dissipation into the atmosphere.

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3 Toushe Basin Land Subsidence Monitoring

- low-frequency electromagnetic wave observation stations were established at upstream, midstream, and downstream locations
- Co-located observation of land subsidence and groundwater levels was conducted
- Observation period: November 2019 to October 2023
- The observation results showed that the basin exhibited good soil compression and subsidence

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3 Toushe Basin Peat Soil NBS Management Strategy

Toushe Development Vision

Water Conservancy Planning
- Summer drainage, winter water retention
- Water retention without exacerbating flooding
- Sustainable water environment monitoring

Agricultural Development
- Continuous development of existing industries
- Crop transformation trial planting and planning
- Landscape flower planting planning

Tourism Development
- Cross-industry marketing integrated with Sun Moon Lake surroundings
- Peatland preservation, ecological guided tours

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4 Conclusions and Recommendations

Inter-ministerial cooperation	The Taiwanese government is working together with inter-ministerial agencies to jointly prevent and control subsidence
Prevention and control measures have shown results	Taiwan has many years of experience and has achieved results, with mature observation technology and analysis methods
High-Speed Rail operation safety is assured	The prevention and control of subsidence cannot be ignored to ensure the safety of critical infrastructure (high-speed rail).
Keep striving for excellence	The causes of land subsidence are complex, and peatland geology, in particular, involves carbon emission issues. We will continue to refine our approaches

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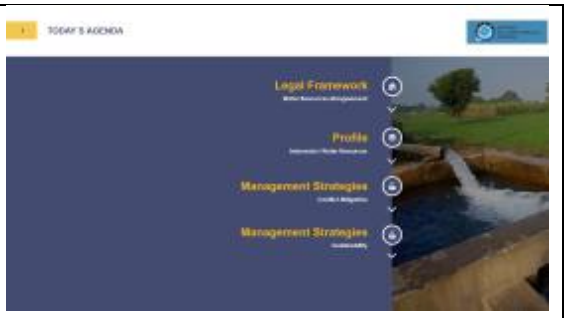
Thank you for your attention

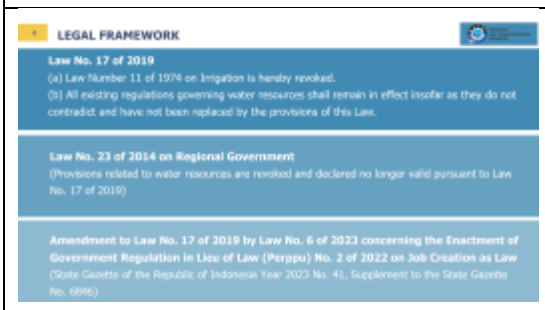
附件三
印尼水利工程專家協會簡報

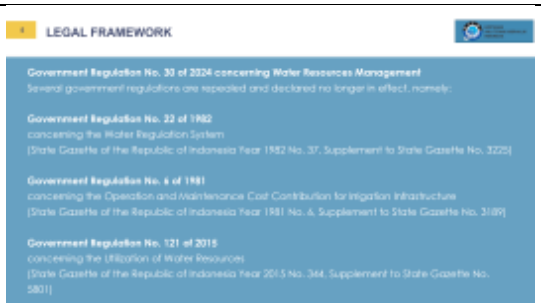

INDONESIA STRATEGIES
FOR WATER CONFLICT
KEMENTERIAN
PEKERJAAN UMUM


TODAY'S AGENDA
Legal Framework
Profile
Management Strategies
Management Strategies


LEGAL FRAMEWORK
WATER RESOURCES MANAGEMENT


LEGAL FRAMEWORK
"The land, the waters, and the natural resources contained therein shall be controlled by the State and utilised for the greatest benefit of the people."
Water is one of the essential elements of life.
Human existence is inseparable from the availability of water.
Water fulfills the fundamental needs of the people.


LEGAL FRAMEWORK
Law No. 17 of 2019
(a) Law Number 11 of 1974 on Irrigation is hereby revoked.
(b) All existing regulations governing water resources shall remain in effect insofar as they do not contradict and have not been replaced by the provisions of this Law.
Law No. 23 of 2014 on Regional Government
(Provisions related to water resources are revoked and declared no longer valid pursuant to Law No. 17 of 2019)
Amendment to Law No. 17 of 2019 by Law No. 6 of 2023 concerning the Enactment of Government Regulation in Lieu of Law (Perppu) No. 2 of 2022 on Job Creation as Law
(State Gazette of the Republic of Indonesia Year 2023 No. 41, Supplement to the State Gazette No. 6846)

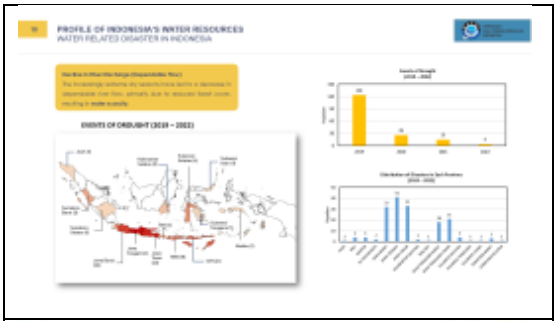

LEGAL FRAMEWORK
Government Regulation No. 30 of 2024 concerning Water Resources Management
Several government regulations are repealed and declared no longer in effect, namely:
Government Regulation No. 22 of 1982
concerning the Water Regulation System
(State Gazette of the Republic of Indonesia Year 1982 No. 37, Supplement to State Gazette No. 3225)
Government Regulation No. 6 of 1981
concerning the Operation and Maintenance Cost Contribution for Irrigation Infrastructure
(State Gazette of the Republic of Indonesia Year 1981 No. 6, Supplement to State Gazette No. 3189)
Government Regulation No. 121 of 2015
concerning the Utilization of Water Resources
(State Gazette of the Republic of Indonesia Year 2015 No. 344, Supplement to State Gazette No. 5801)

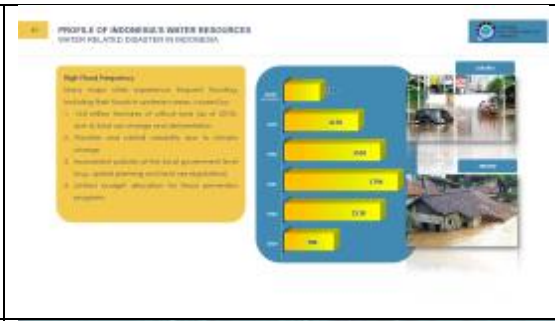

PROFILE OF INDONESIA'S
WATER RESOURCES


PROFILE OF INDONESIA'S WATER RESOURCES
INDONESIA'S WATER RESOURCES POTENTIAL


PROFILE OF INDONESIA'S WATER RESOURCES
CLIMATE CHANGE
RISK

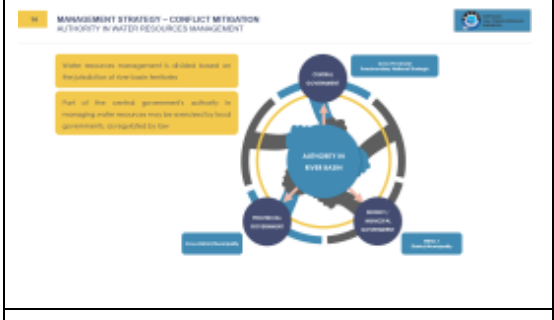

PROFILE OF INDONESIA'S WATER RESOURCES
POPULATION GROWTH
CLIMATE CHANGE
CHANGE OF LAND USE


PROFILE OF INDONESIA'S WATER RESOURCES
WATER RELATED DISASTER IN INDONESIA


PROFILE OF INDONESIA'S WATER RESOURCES
WATER RELATED DISASTER IN INDONESIA

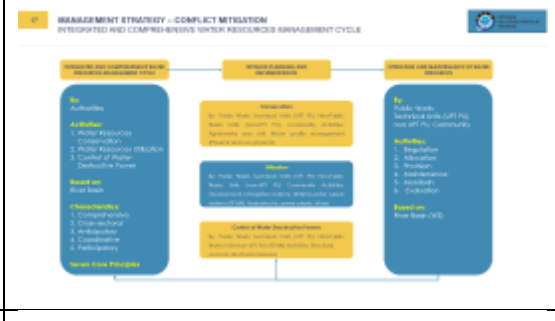

PROFILE OF INDONESIA'S WATER RESOURCES
WATER RELATED DISASTER IN INDONESIA


MANAGEMENT STRATEGY
CONFLICT MITIGATION

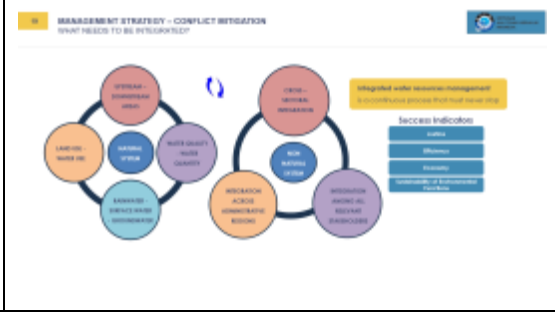

MANAGEMENT STRATEGY – CONFLICT MITIGATION
AUTHORITY IN WATER RESOURCES MANAGEMENT


MANAGEMENT STRATEGY – CONFLICT MITIGATION
RIVER BASINS IN INDONESIA

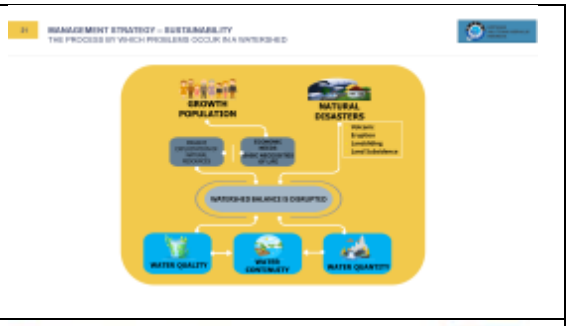

MANAGEMENT STRATEGY – CONFLICT MITIGATION
STAKEHOLDER ROLES IN WATERSHED MANAGEMENT FOR WATER SECURITY


MANAGEMENT STRATEGY – CONFLICT MITIGATION
INTEGRATED AND COMPREHENSIVE WATER RESOURCES MANAGEMENT CYCLE

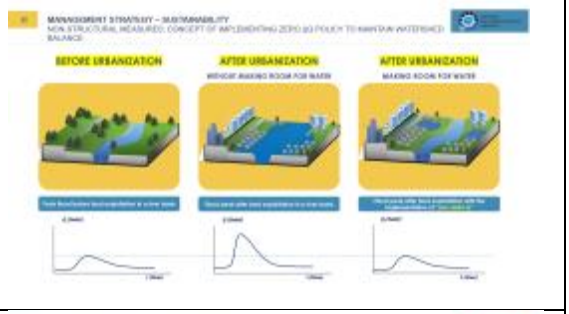

MANAGEMENT STRATEGY – CONFLICT MITIGATION
DISTRIBUTION OF INSTITUTIONAL ROLES IN WATER RESOURCES MANAGEMENT
COORDINATION AMONG AGENCIES IN THE RIVER BASIN

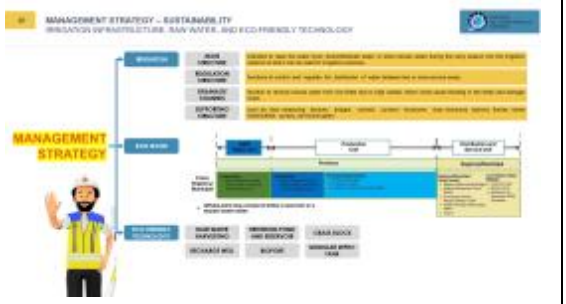

MANAGEMENT STRATEGY – CONFLICT MITIGATION
WHAT NEEDS TO BE INTEGRATED?

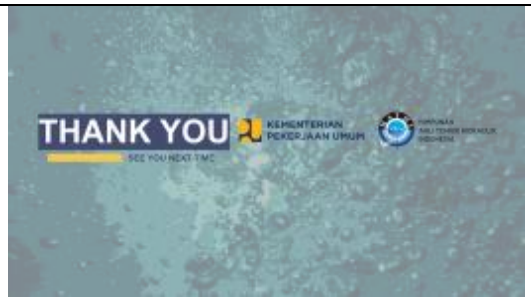

MANAGEMENT STRATEGY
SUSTAINABILITY


GROWTH POPULATION
NATURAL DISASTERS
WATER QUALITY
WATER QUANTITY


MANAGING HUMAN BEHAVIOUR
MANAGING WATER BEHAVIOUR


BEFORE URBANIZATION
AFTER URBANIZATION
AFTER URBANIZATION


MANAGEMENT STRATEGY


THANK YOU
KEMENTERIAN PEKERJAAN UMUM

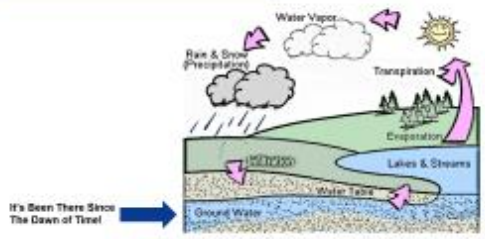
附件四

雅加達特區水務局簡報

Groundwater Management

Keywords

Is Groundwater Something New?



Can We USE Groundwater?

Is it REGULATED?

Provincial Regulation No. 10/98 on Implementation and Tax on Groundwater Usage

(Perda 10/1998 tentang Penyelenggaraan Dan Pajak Pemanfaatan Air Bawah Tanah)

CAN Be Extracted and WITHOUT Permit and WITH LIMITATION

i. For drinking and basic household purposes (max. 50 m3/mo. and not within PAM coverage area
ii. For research and investigation by Government or Private Institutions/Offices with Government sanction

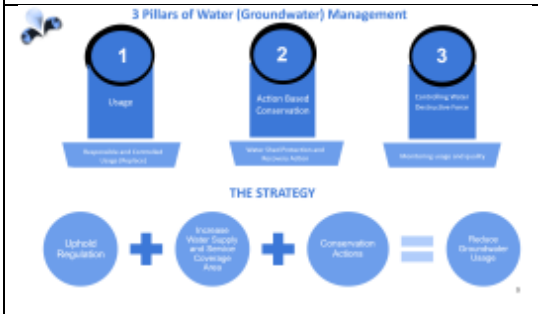
National Regulation

(Permen ESDM 14/2024 tentang Penyelenggaraan Izin Pengusahaan Air Tanah dan Perseksjuan Penggunaan Air Tanah)

Extracted WITH Permit and LIMITATION

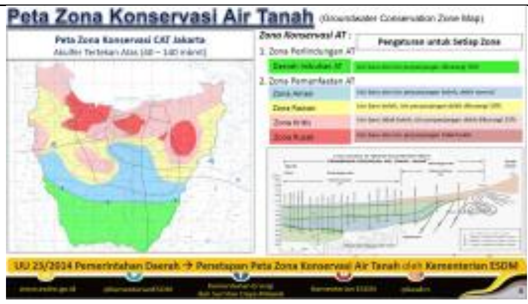
given by Relevant Ministry (Ministry of Energy & Mineral Resources through The Board of Groundwater Conservation)
- *for COMMERCIAL & INDUSTRIAL Use*
- *Referring to the Groundwater Basin Map*

THE BIG QUESTION
ARE THERE NO IMPACT ON USAGE?



REGULATE

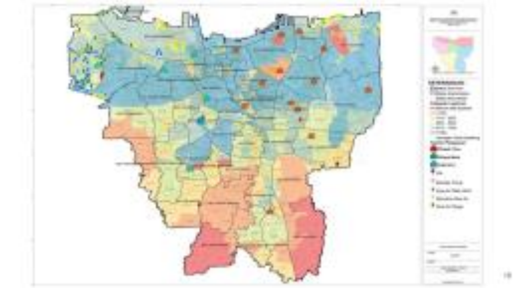

REGULATE


Peta Zona Konservasi Air Tanah (Groundwater Conservation Zone Map)
Peta Zona Konservasi CAT Jakarta
Zona Konservasi AT :
Pengaturan untuk Setiap Zona
1. Zona Perlindungan AT
2. Zona Pemanfaatan AT
Zona Aman
Zona Rawan
Zona Kritis
Zona Rusak
UU 23/2014 Pemerintahan Daerah → Penetapan Peta Zona Konservasi Air Tanah oleh Kementerian ESDM

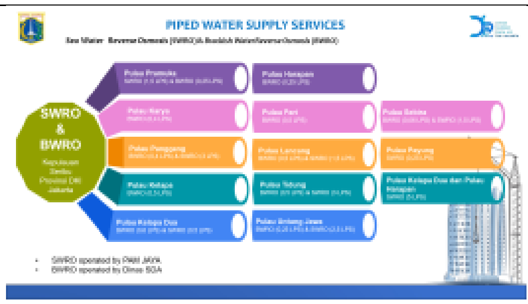

Regulation on Monitoring and Limiting Groundwater Exploitation
Keputusan Gubernur Nomor 279 Tahun 2018
TIM PENGAWASAN TERPADU PENYEDIAAN SUMUR RESAPAN DAN INSTALASI PENGOLAHAN AIR LIMBAH SERTA PEMANFAATAN AIR TANAH DI BANGUNAN GEDUNG DAN PERUMAHAN
Keputusan Gubernur Nomor 2388 Tahun 2017
TIM KOORDINASI PENGENDALIAN PEMANFAATAN AIR
Peraturan Gubernur Nomor 38 Tahun 2017
PEMUNGUTAN PAJAK AIR TANAH
Keputusan Gubernur Nomor 1801 Tahun 2014
Penunjukan PT Bank Pembangunan Daerah Jawa Barat Dan Banten, Tbk Sebagai Tempat Penerimaan Pembayaran PBB Perdesaan Dan Perkotaan, Pajak Air Tanah, Pajak Reklame Dan BPHTB
Keputusan Gubernur Nomor 1509 Tahun 2014
Penunjukan PT Pos Indonesia Sebagai Tempat Penerimaan Pembayaran Pajak Air Tanah, Pajak Reklame Dan Bea Perolehan Hak Atas Tanah Dan Bangunan Di Kantor Pos
Instruksi Gubernur Nomor 10 Tahun 2014
Pelaksanaan Pemungutan Pajak Denda Pengambilan Dan/Atau Pemanfaatan Air Tanah Yang Melebihi Debit Yang Diizinkan
Pergub Prov. DKI Jakarta Nomor 94 Tahun 2021
Perubahan Pergub. No. 86 tahun 2012 tentang Nilai Perolehan Air Tanah Sebagai Dasar Pengenaan Pajak Air Tanah
Pergub Prov. DKI Jakarta Nomor 108 Tahun 2021 tentang
Perubahan Atas Pergub Nomor 20 Tahun 2013 tentang Sumur Resapan
LAW

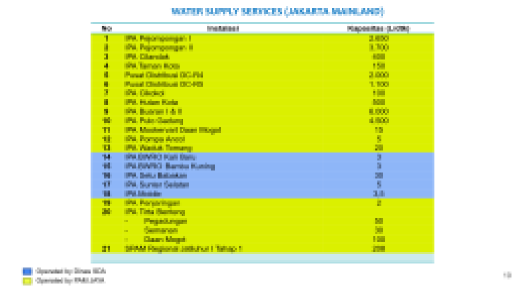

Peraturan Gubernur No. 93 tahun 2021
Zona Bebas Air Tanah
Surat Edaran Gubernur Nomor 37 Tahun 2011
Penggunaan Air Tanah Sebagai Cadangan
Peraturan Gubernur Nomor 28 Tahun 2011
Pembentukan Organisasi Dan Tata Kerja Unit Pengelola Limbah Lingkungan Dan Air Tanah
Peraturan Daerah Nomor 1 Tahun 2024
Pajak Daerah dan Retribusi Daerah
Peraturan Daerah Nomor 10 Tahun 1998
Penyelenggaraan Dan Pajak Pemanfaatan Air Bawah Tanah
Peraturan Pemerintah Nomor 43 Tahun 2008
Air Tanah
MAKING IT VISIBLE THROUGH REGULATIONS!!!!


EXISTING PIPED WATER SERVICE MAP



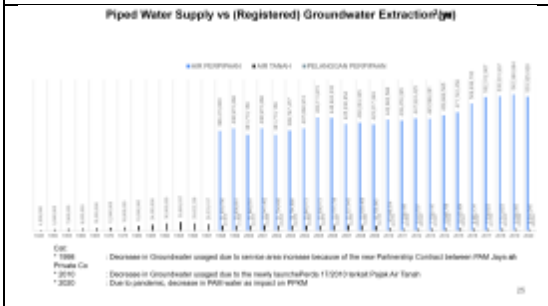

PIPED WATER SUPPLY SERVICES

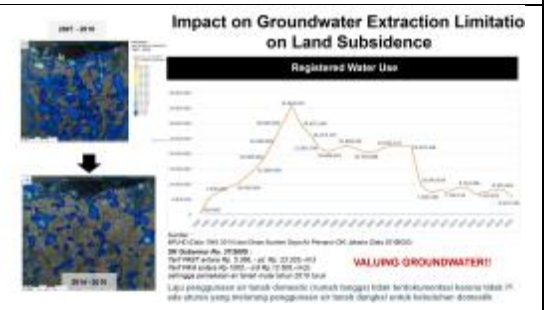

PIPED WATER SUPPLY SERVICES
SWRO & BWRO
Pulau Pramuka
Pulau Harapan
Pulau Karya
Pulau Pari
Pulau Sebira
Pulau Panggang
Pulau Lancang
Pulau Payung
Pulau Kelapa
Pulau Tidung
Pulau Kelapa Dua dan Pulau Harapan
Pulau Kelapa Dua
Pulau Untung Jawa
SWRO operated by PAM JAYA
BWRO operated by Dinas SDA


WATER SUPPLY SERVICES (JAKARTA MAINLAND)
No
Instalasi
Kapasitas (L/dtk)
1 IPA Pejompongan I 2.650
2 IPA Pejompongan II 3.700
3 IPA Cilandak 400
4 IPA Taman Kota 150
5 Pusat Distribusi DC-PM 2.000
6 Pusat Distribusi DC-PB 1.100
7 IPA Cikokol 100
8 IPA Hutan Kota 500
9 IPA Buaran I & II 6.000
10 IPA Pulo Gadung 4.600
11 IPA Modernisasi Daan Mogot 15
12 IPA Pompa Ancol 5
13 IPA Waduk Tomang 20
14 IPA BWRO Kali Baru 3
15 IPA BWRO Bambu Kuning 3
16 IPA Setu Babakan 20
17 IPA Sunter Selatan 5
18 IPA Mobile 3,5
19 IPA Penjaringan 2
20 IPA Tirta Bantang
- Pegadungan 50
- Semanan 30
- Daan Mogot 100
21 SPAM Regional Jatiluhur I Tahap 1 200
Operated by Dinas SDA
Operated by PAM JAYA

PIPED WATER SUPPLY COVERAGE

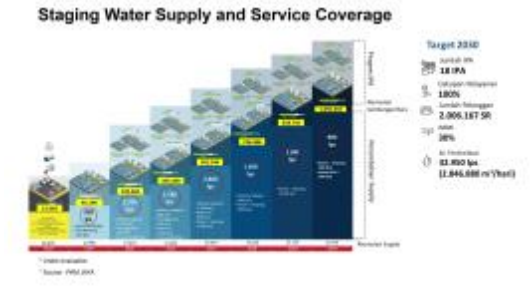
PIPED WATER SUPPLY COVERAGE

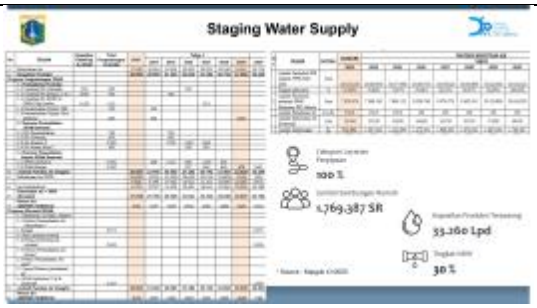




ACTION BASED CONSERVATION

ACTION BASED CONSERVATION





RAINWATER MANAGEMENT APPROACH
(GROUNDWATER CONSERVATION & FLOOD CONTROL)

REPLENISHING
THE RESOURCE!!!

Vertical Drainage Project

Wastewater Treatment Projects

So is Groundwater Truly Invisible?
NO….it's always there
MOST OF US Use it Everyday
It's NOT Totally INFINITE (Recharge > Extraction?)
Regulate, Replace, Recharge, Treat, Conserve

HOW WAS IN THE NETHERLANDS?

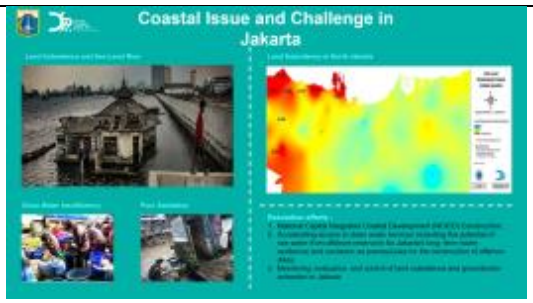
DUTCH WATER EXPERIENCE
(DUTEP)

附件五

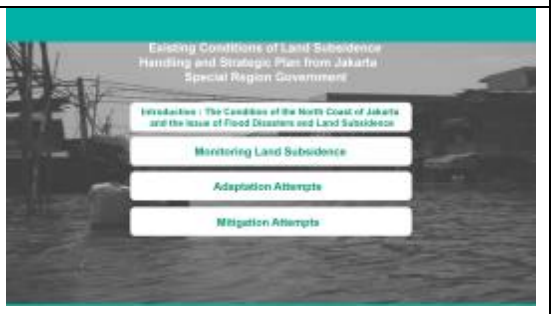
雅加達特區水務局簡報

Land Subsidence in Jakarta

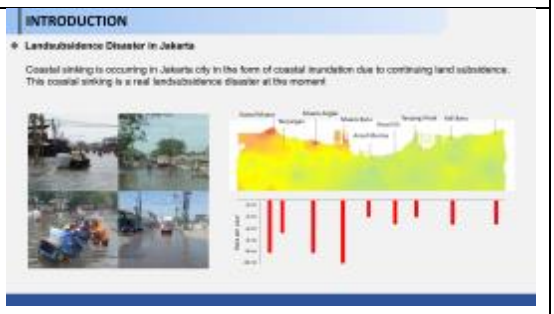

BEST PRACTICE MANAGEMENT OF SUBSIDENCE DISASTER IN JAKARTA CITY


Coastal Issue and Challenge in Jakarta


Best Practice Disaster Management in Theory
TECHNICAL
1. Monitoring, Risk Maping and identification disaster causes
2. Prevention, Mitigation, Adaptation
3. Emergency Response, Recovery and Rehabilitation
NON TECHNICAL
1. Regulation
2. Institution
3. Programs
4. Budget
ROAD MAP
ACTION PLANS
ACTION


Existing Conditions of Land Subsidence Handling and Strategic Plan from Jakarta Special Region Government
Introduction : The Condition of the North Coast of Jakarta and the Issue of Flood Disasters and Land Subsidence
Monitoring Land Subsidence
Adaptation Attempts
Mitigation Attempts


JAKARTA NORTH COAST CONDITION AND DIS
ISSUES:
TIDAL FLOOD & LAND SUBSIDENCE


INTRODUCTION
Landsubsidence Disaster in Jakarta
Coastal sinking is occurring in Jakarta city in the form of coastal inundation due to continuing land subsidence. This coastal sinking is a real landsubsidence disaster at this moment


INTRODUCTION
Tidal Flood Phenomenon on the North Coast of Jakarta


INTRODUCTION
Attempts to Handle Tidal Floods that Occurred at the Muara Baru


MONITORING LAND SUBSIDENCE

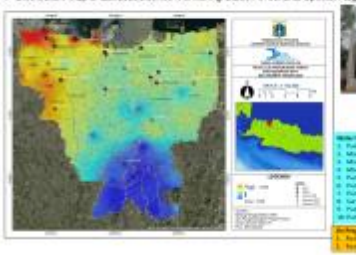

HISTORY OF THE LANDSUBSIDENCE MONITORING STATION

LANDSUBSIDENCE MONITORING STATION (LMS)

- Several LMS construction that have been built by the Jakarta Provincial Government and JICA

LANDSUBSIDENCE MONITORING STATION (LMS)

- Distribution Map of Landsubsidence Monitoring Station in Jakarta Special Region area

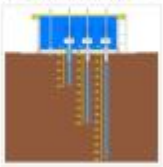


LANDSUBSIDENCE MONITORING STATION (LMS)

- Data Processing of Landsubsidence Monitoring Station

1. REAL TIME

One of the data processing that has been carried out is by real-time method. Currently, the real-time data of the monitoring station is being improved to be able to show quick look data (indicator information) of the landsubsidence conditions and the dynamics of the water table that occurs.



2. POST PROCESSING

This system is highly recommended to be built and maintained continuously, including in terms of processing the data, both in real-time and post processing.

Meanwhile, the data that need to be further processed is being collected and will be entered into the data processing software through the Water Resource Agency. LMS system, as the final information sources on the landsubsidence conditions, dynamics water table, including the correlation between the two can be obtained and used for various purposes.

MONITORING LAND SUBSIDENCE

- Development of Tidal Flood and Landsubsidence Early Warning Monitoring System

1 SEA DIKE CONSTRUCTION OF NCICD PHASE A (COASTAL SEA DIKE & DOWNSTREAM RIVER)

2 POLDER SYSTEM CONSTRUCTION

As part of Technological Innovation for Tidal Flood Controlling, Jakarta Water Resource Agency use Rubber Weir to overcome tidal waves in Kanal Polder Pump House which operate with a SCADA system.

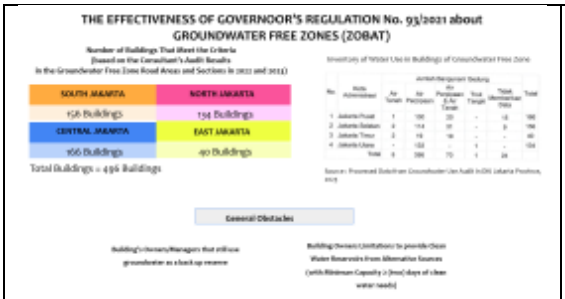
Ground Water Exploitation Control

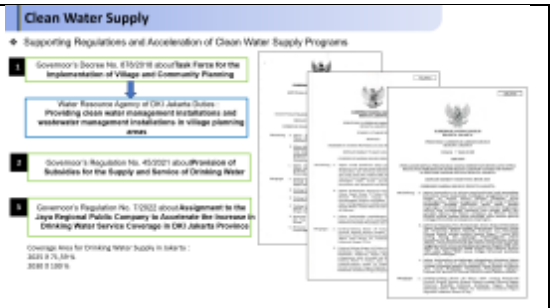
- Implementation of Groundwater-Free Zone Regulations

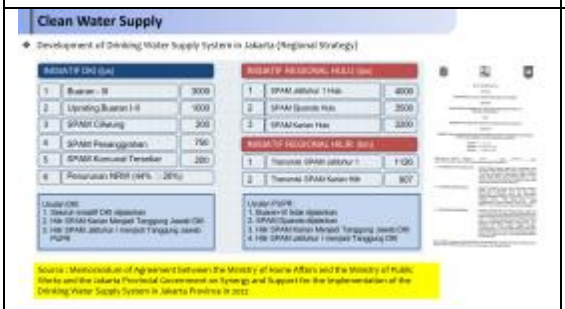
Landsubsidence Controlling

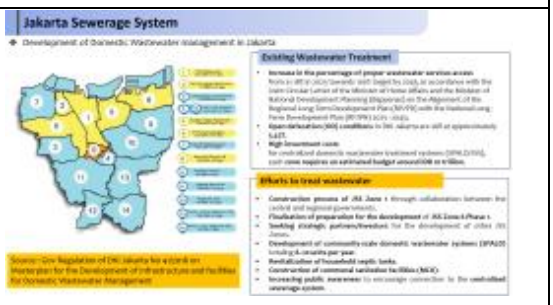
- Landsubsidence Rate in 2023

In can be seen in figure 1 and figure 2 that with the enactment of the Groundwater Free Zone (KBAT), the rate of landsubsidence does not occur significantly, so the Regulation on the use of groundwater is one of the solutions to overcome this problem followed by the improvement of the clean water networking pipe


THE EFFECTIVENESS OF GOVERNOOR'S REGULATION No. 93/2021 about
GROUNDWATER FREE ZONES (ZOBAT)
SOUTH JAKARTA
NORTH JAKARTA
156 Buildings
134 Buildings
CENTRAL JAKARTA
EAST JAKARTA
166 Buildings
40 Buildings
Total Buildings = 496 Buildings
General Obstacles


Clean Water Supply
Supporting Regulations and Acceleration of Clean Water Supply Programs
Water Resource Agency of DKI Jakarta Duties :
Providing clean water management installations and wastewater management installations in village planning areas


Clean Water Supply
Development of Drinking Water Supply System in Jakarta (Regional Strategy)


Jakarta Sewerage System
Existing Wastewater Treatment
Efforts to treat wastewater


Nature Based Solution Approach

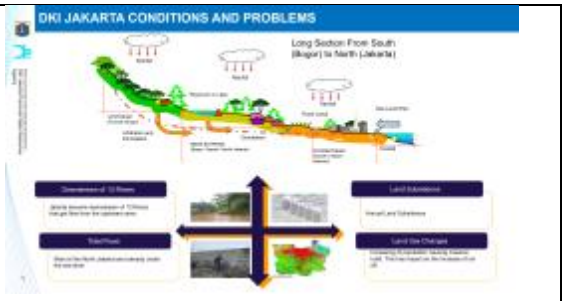

THANKYOU
WATER RESOURCE AGENCY
OF JAKARTA SPECIAL REGION

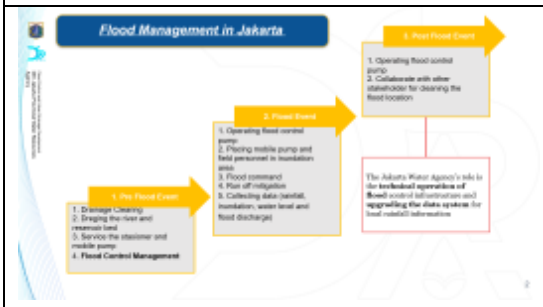
附件六

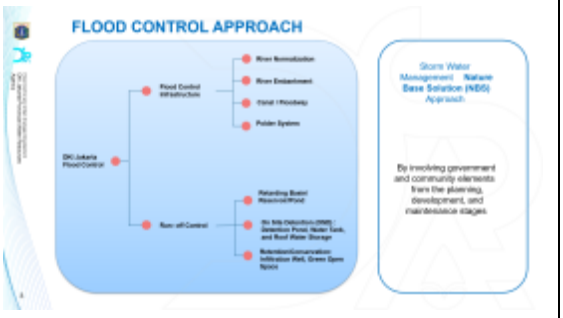
雅加達特區水務局簡報

Flood Control Management

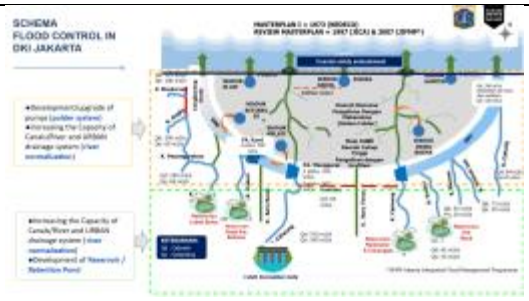

JAKARTA FLOOD CONTROL MANAGEMENT 2025 to 2027
Flood Control and Drainage Division of the DKI Jakarta Provincial Water Resources Agency

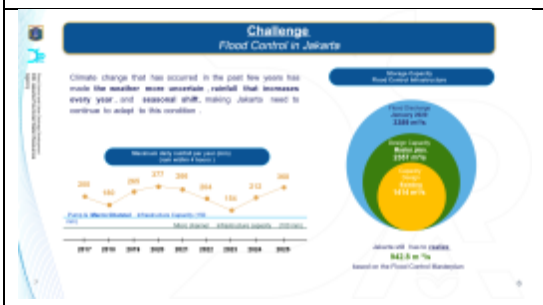

DKI JAKARTA CONDITIONS AND PROBLEMS


Flood Management in Jakarta


FLOOD CONTROL APPROACH


FLOOD CONTROL AND URBAN DRAINAGE MASTERPLAN


SCHEMA
FLOOD CONTROL IN
DKI JAKARTA

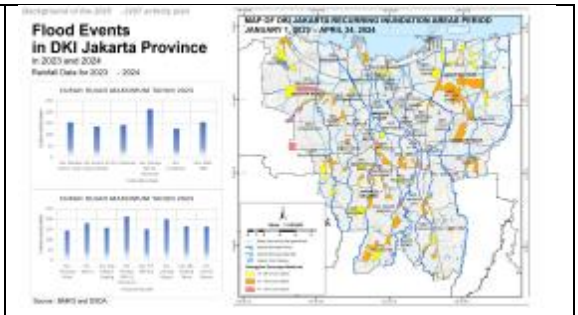

Challenge
Flood Control in Jakarta

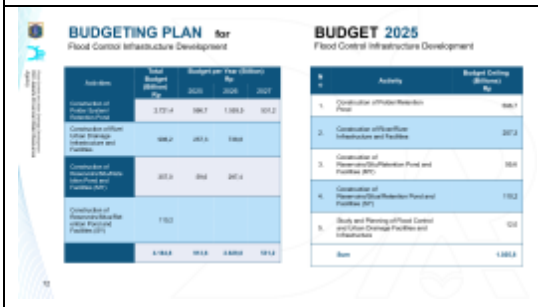

Polder System Development

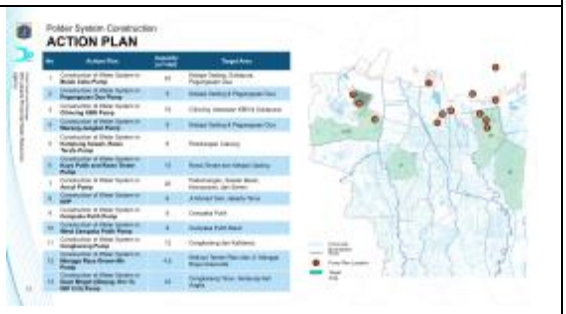

River/Canal Normalization and Management


Urban Drainage Development and Improvement
SALURAN DRAINASE D


Reservoir/Situ/Retention Pond Development
SITU/WADUK/EMBUI
PROVINSI DKI JAKAR


Flood Events
in DKI Jakarta Province
in 2023 and 2024


BUDGETING PLAN for
Flood Control Infrastructure Development
BUDGET 2025
Flood Control Infrastructure Development


Polder System Construction
ACTION PLAN


ACTION PLAN


ACTION PLAN


THANK YOU
We are looking forward to further collaboration.

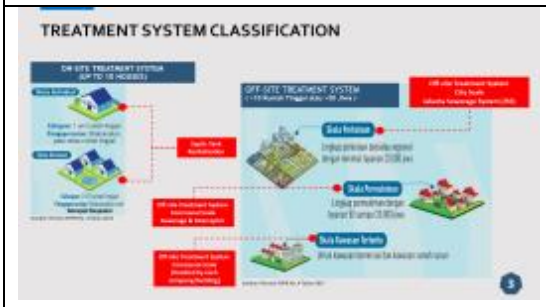
附件七

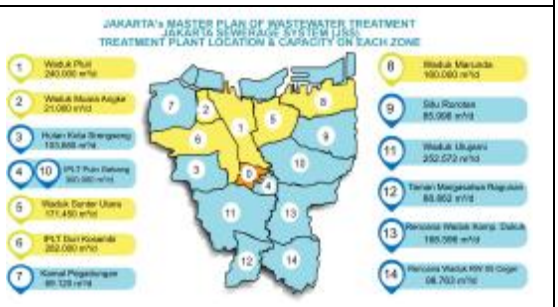
雅加達特區水務局簡報

Wastewater Treatment System in Jakarta

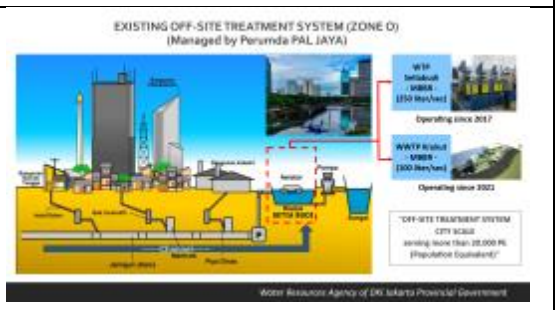

WASTEWATER
TREATMENT SYSTEM
IN
Jakarta

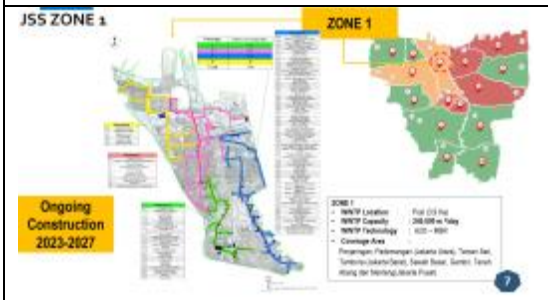

ON-SITE
Treatment
Septic Tank
Sludge Transport
Sludge Treatment Plant (STP)
OFF-SITE
Treatment

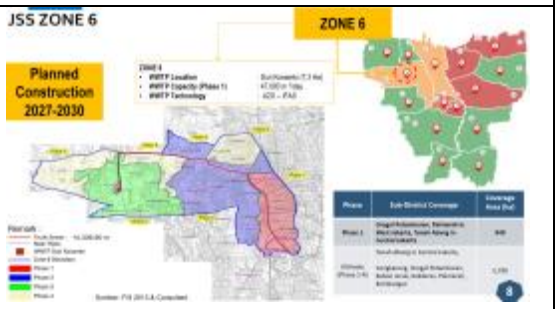

TREATMENT SYSTEM CLASSIFICATION
ON-SITE TREATMENT SYSTEM
OFF-SITE TREATMENT SYSTEM


JAKARTA's MASTER PLAN OF WASTEWATER TREATMENT
JAKARTA SEWERAGE SYSTEM (JSS)
TREATMENT PLANT LOCATION & CAPACITY ON EACH ZONE


5 PRIORITY ZONES FOR DEVELOPMENT OF JAKARTA
SEWERAGE SYSTEM
Ongoing Project
Open for PPP


EXISTING OFF-SITE TREATMENT SYSTEM (ZONE 0)
(Managed by Perumda PAL JAYA)
Operating since 2017
Operating since 2021


JSS ZONE 1
ZONE 1
Ongoing
Construction
2023-2027


JSS ZONE 6
ZONE 6
Planned
Construction
2027-2030


ACCELERATION OF SAFELY MANAGED SANITATION
SEWERAGE
INTERCEPTOR


OFF-SITE TREATMENT SYSTEM COMMUNAL SCALE
MANAGED BY DSDA (WATER RESOURCES AGENCY)
SEWERAGE
INTERCEPTOR
MORE THAN 70 WWTP IN TOTALS


COMMUNAL SEPTIC TANK
& PUBLIC TOILET REVITALISATION PROJECT
Public Toilet in Kaja
Public Toilet in Pinangsia
Public Toilet in Gropak
11


SLUDGE TREATMENT PLANT (STP)
Perumda PAL Jaya
STP PULO GEBANG
STP DURI KOSAMBI


KEEP IN TOUCH
WITH US!
13


THANK YOU!

附件八

中興工程印尼辦事處簡報

SINOTECH
中興工程

Sinotech Group in Brief

- Established in 1970 in Taipei Taiwan
- Private Company, 85.6% owned by SOE (BUMN), under MOEA.
- 2,500+ permanent personnel within the Group.

Overseas - 5 Subsidiaries and 2 Branch Offices
Indonesia, Timor Leste, Thailand, Macau, China

Life Cycle Services

Sinotech in Indonesia & Timor Leste

- Presence in Indonesia since **1975**.
- Successfully completed some **110+** infrastructure projects.
- Established Timor Leste Representative Office in Jan. 2015
- Established PT. Sinotech Engineering Indonesia (SEI) in Aug. 2015.

SINOTECH

Track Records

- 110+ Projects
- Financing Agency
- Major Client

JICA
THE WORLD BANK
ADB

Signature Projects in Indonesia

Selected Hydropower Experience in Indonesia

Indonesia Dam/Hydropower Experience

Cisata II Hydropower

Upper Cisokan Pumped Storage Hydropower

Indonesia Dam/Hydropower Experience

Batang Toru Hydropower

Bilandung Hydropower

SINOTECH
Thank You