



DIRECTORATE OF WATER RESOURCES AND IRRIGATION  
MINISTRY OF NATIONAL DEVELOPMENT PLANNING / BAPPENAS  
REPUBLIC OF INDONESIA



# The South-South Water Management Experience-Sharing Seminar: INDONESIA

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# OUTLINE

The background of the slide is a photograph of a vintage typewriter on a dark wooden desk. There are three crumpled balls of paper: one white on the left and two blue on the right. A semi-transparent grey rectangle is positioned in the center of the image, containing the text for the outline.

- Overview: Water Resources Management in Indonesia
- Policy and institutional reforms
- Water resource management policies and strategies
- Hot Topic: JAKARTA Giant Sea Wall



# FACTS

## ABOUT INDONESIA

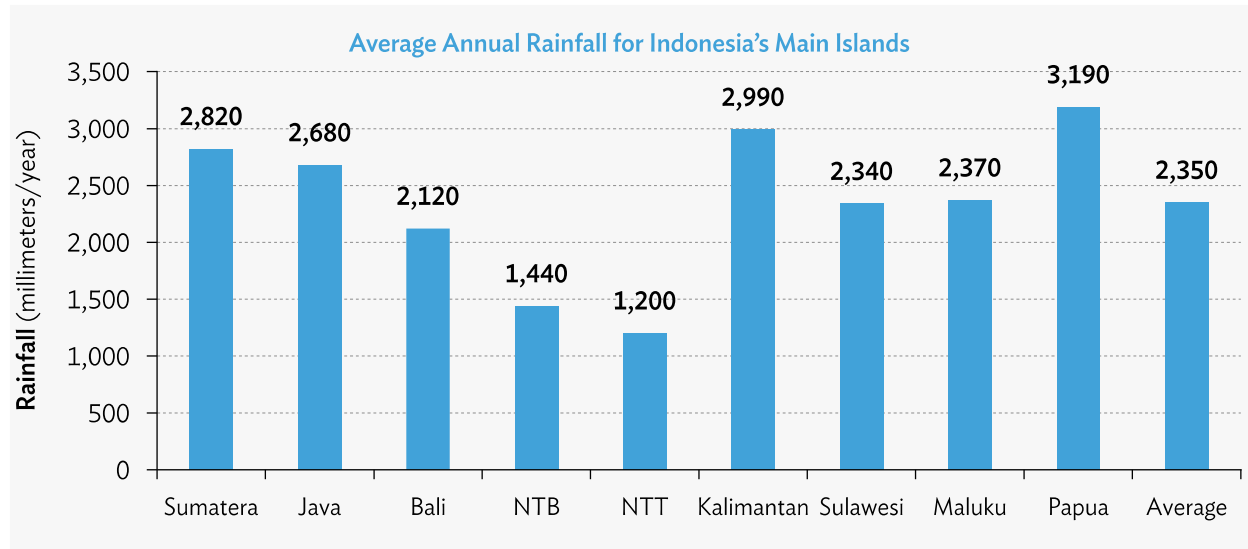


- An archipelago with 17,508 islands
- Population : approx. 260 million people
- More than 5,700 rivers
- Tropical Country
- Fairly even climate all year around
- 2 seasons : wet and dry



# OVERVIEW

## WATER RESOURCES IN INDONESIA



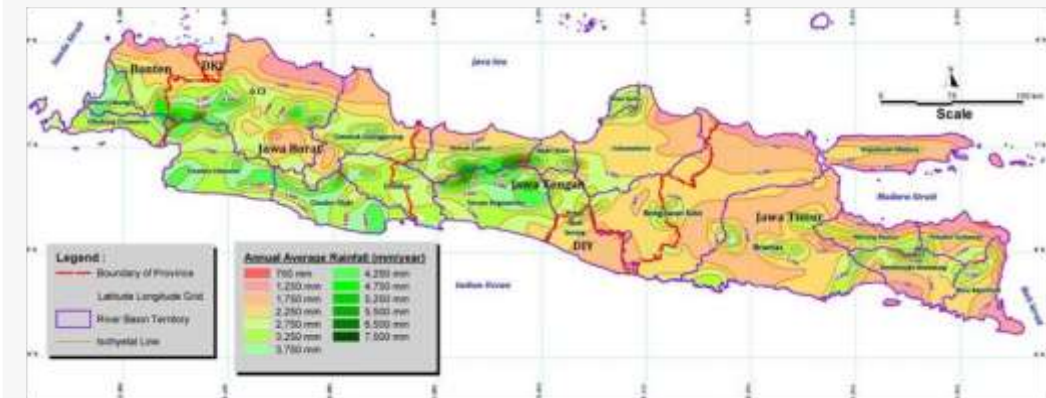
- Rainfall is vary from island to island
- Total water availability in Indonesia is  $690 \times 10^9$  cubic m3/year VS the demand of  $175 \times 10^9$  m3/year.
- Java is the most populous and dense island
- Java has about 65% of the population, but only 20% of the water resources
- Kalimantan and Papua: only 13% of the total population in Indonesia, has about 70% of the water resources

Figure 2.2: Population Density Map of Indonesia, 2013



Source: Statistics Indonesia. 2014. *Statistical Yearbook of Indonesia 2013*.

Yearly Rainfall Distribution in Java

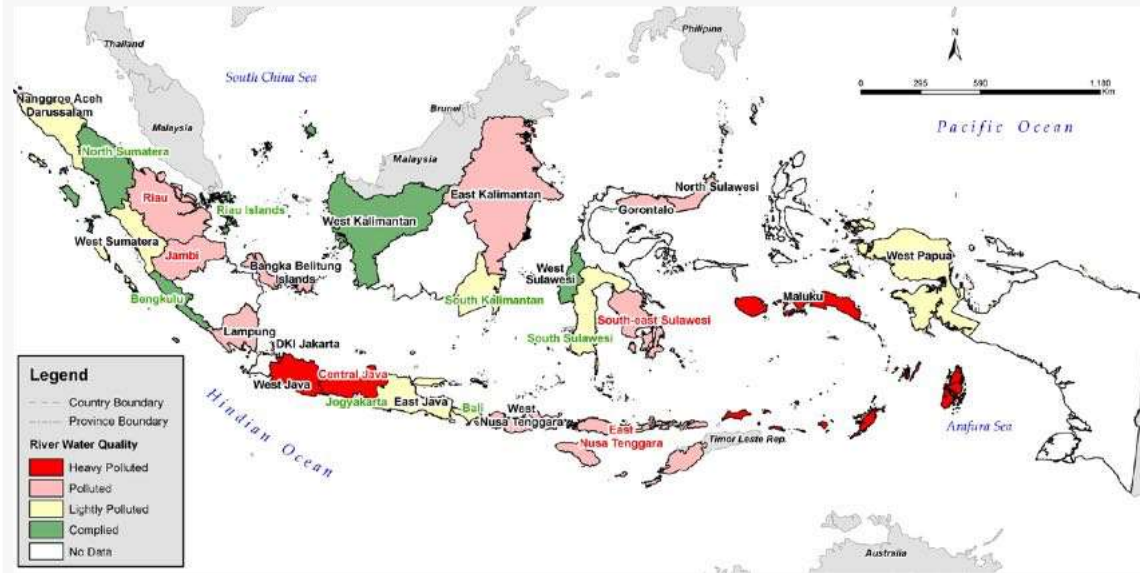


Sources: Ministry of Environment. 2013. *Status Lingkungan Hidup Indonesia 2012*; Deltares et al. 2012. *Java Water Resources Strategic Study*. Report submitted to the World Bank.

# OVERVIEW

## WATER RESOURCES IN INDONESIA

**Figure 3.12:** River Water Quality by Province, 2012

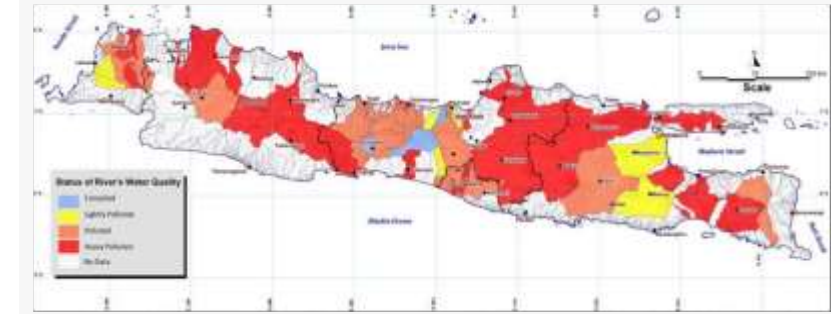


Note: Color of province name indicates improvement (green), constant (white), or deterioration (red).

Source: Kementerian Lingkungan Hidup Republik Indonesia (Ministry of Environment and Forestry). *Status Lingkungan Hidup* (State of the Environment) Indonesia 2012.

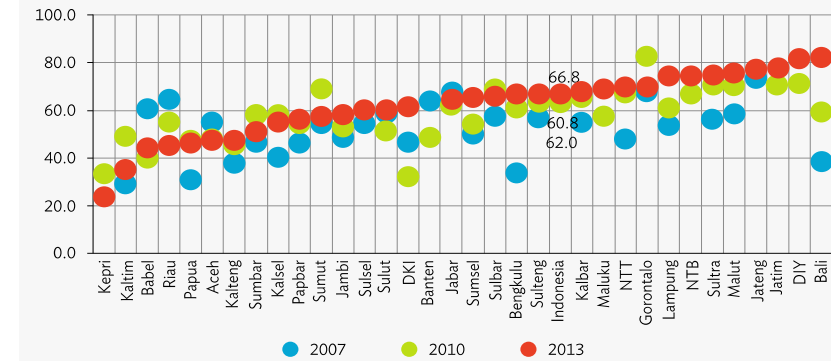
- Water management challenge: water quantity (drought and flood) and water quality
- Uneven distribution of water
- Other issues: water supply and sanitation

**Figure 3.13:** Java River Water Quality Status



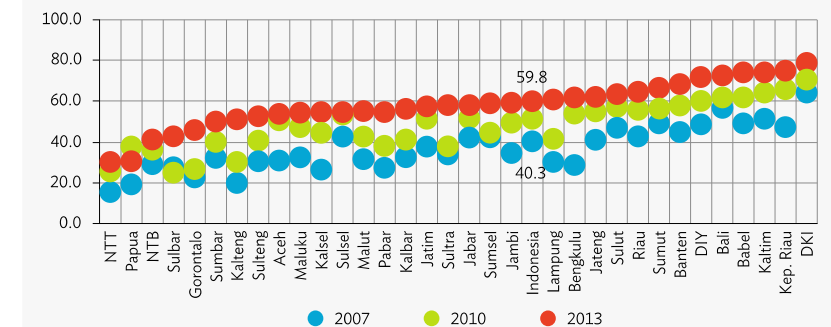
Source: Ministry of Environment. *Status Lingkungan Hidup* (State of the Environment) Indonesia 2012.

**Figure 4.8:** Percentage of Households Having Access to Clean Water in Each Province



Source: Badan Penelitian dan Pengembangan Kesehatan (National Institute of Health Research and Development). 2013. *Riset Kesehatan Dasar* (Basic Health Research). Ministry of Health. Jakarta.

**Figure 4.9:** Percentage of Households with Access to Improved Sanitation



Source: Badan Penelitian dan Pengembangan Kesehatan (National Institute of Health Research and Development). 2013. *Riset Kesehatan Dasar* (Basic Health Research). Ministry of Health. Jakarta.



# OVERVIEW

## WATER GOVERNANCE AND INSTITUTIONS



- Water management is a wicked problem
- Decentralization issues
- Multi agencies challenges (sectoral ego)
- Water use conflicts
- Collaboration is a must
- Encourage public participation and contribution
- Promote Public Private Partnerships

# POLICY AND INSTITUTIONAL REFORMS

## IN WATER SECTOR



- Adopted IWRM principles
- Water Management: based on river basin, not administrative boundaries
- almost 8,000 watersheds - managed in 131 river basins
- Irrigation Management: responsibilities are divided based on areas
- Coordination platform established at various level
- Water supply and sanitation are decentralized



# Water Management Arrangements

Affairs Distribution	Approach	Central	Province	District or City	PJT
<b>River Basin Management</b>					
Trans state	Coadministration	✓			✓
Trans province	Coadministration	✓			✓
National strategic	Coadministration	✓	✓	✓	✓
Trans district	Decentralization		✓		
Within district	Decentralization			✓	
<b>Irrigation System Management</b>					
Area >3,000 ha	Coadministration		✓	✓	
Area: 1,000–3,000 ha	Decentralization		✓		
	Coadministration			✓	
Area <1,000 ha	Decentralization			✓	
<b>Water Supply and Sanitation</b>					
	Decentralization		✓	✓	
Coordination	Deconcentration		✓		

ha = hectare, PJT = Perum Jasa Tirta (state-owned enterprise Jasa Tirta).  
*Note:* Analysis of existing and past regulations in the present study.  
*Source:* Asian Development Bank.

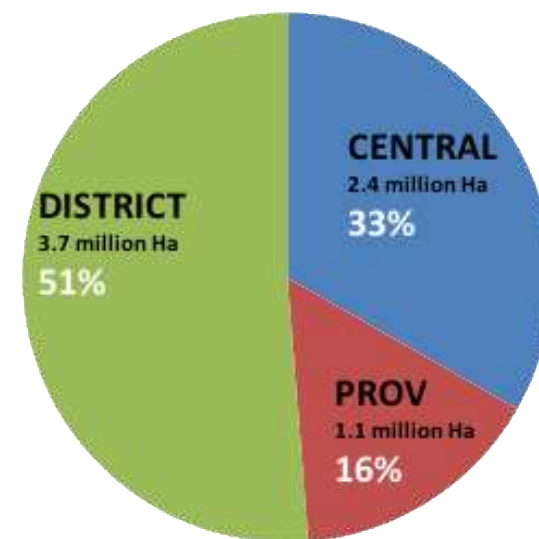
**Table 5.2: Distribution of Responsibility for River Basin Organizations**

Management Responsibility	River Basin Organizations	River Basins (WS)
Central control	33 (31.7%)	63 (48%)
Provincial control	57 (54.8%)	53 (40%)
Districts/city control	14 (13.5%)	15 (12%)
<b>Total</b>	<b>104</b>	<b>131</b>

WS = wilayah sungai (river basin).

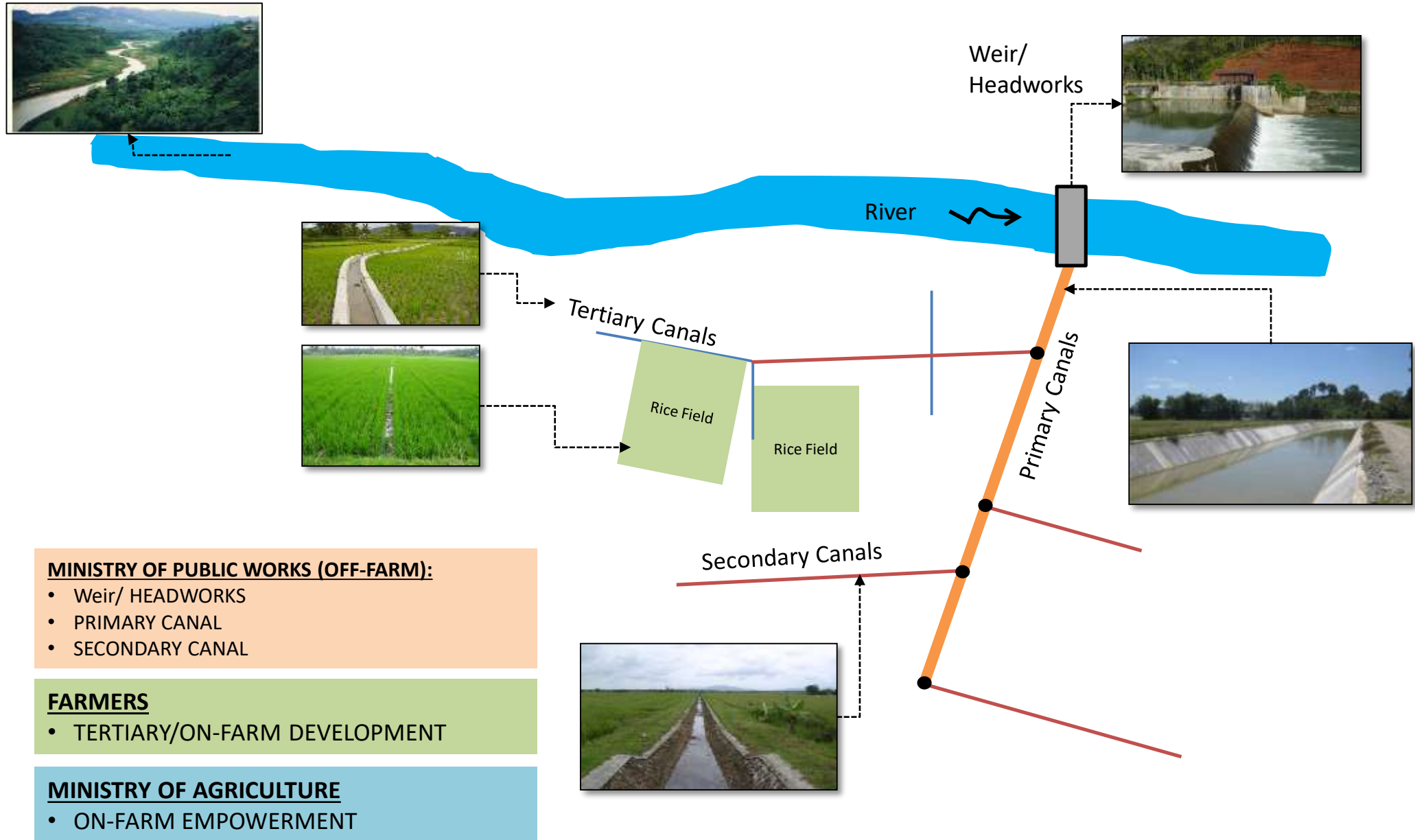
*Source:* Ministry of Public Works. Ministerial Decision No. 02. 2013. Jakarta.

Total Irrigation Areas : 7.2 million Ha  
**Condition in 2014: Good 54% - Fair/Poor 46%**

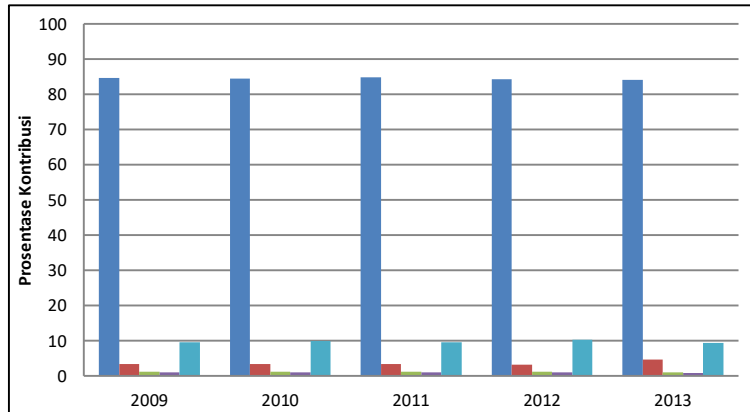




# Role Sharing in Irrigation System



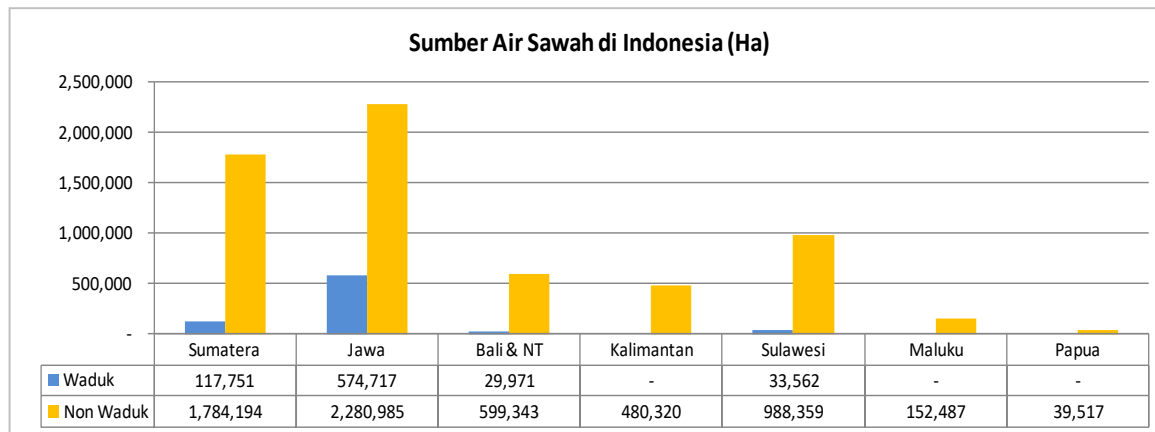
# STRATEGIC ISSUE: Food Supply



- **Rice** is main staple food for Indonesians;
- **Surface irrigation** system has **dominant contribution** (84%) to the national Rice Production

		2009	2010	2011	2012	2013
	Surface Irrigation System (%)	84.70	84.48	84.77	84.38	84.09
	Tidal Lowland Irrigation Syst. (%)	3.49	3.37	3.42	3.26	4.63
	Inland Swamp Irrigation Syst. (%)	1.23	1.18	1.20	1.15	1.02
	Groundwater Irrigation Syst. (%)	1.05	1.01	1.03	0.98	0.94
	Rain-fed Irrigation System(%)	9.53	9.95	9.58	10.24	9.33
Production (Mil Ton GKG)		66,40	66,47	65,76	69,05	71,28

→ However, **only 11 % of surface irrigation total area is supplied from the reservoir**



→ Hence, **The reliability** of the irrigation water quantity for food production is **still low**



# NATIONAL DEVELOPMENT STRATEGIES

## DEVELOPMENT NORMS

- 1) Development for people and communities;
- 2) Efforts to increase welfare, prosperity and productivity should not create a wider gap;
- 3) Main focus on increasing the productivity of the middle-lower bracket, without preventing, hampering, lowering or reducing the flexibility of major actors to continue to be agents of growth;
- 4) Development activity should not harm and diminish the environment and the balance of the ecosystem.

## 3 DEVELOPMENT DIMENSIONS

### HUMAN DEVELOPMENT DIMENSION

Education

Health

Housing

Mental / Character

### MAIN SECTOR DEVELOPMENT DIMENSION

Food Sovereignty

Energy and Power  
Sovereignty

Maritime and Marine

Tourism and Industry

### TERRITORIAL & EQUITY DIMENSION

Among Group of  
Income

Among region: (1)  
Village, (2) Border  
Areas (3) Outside Java,  
(4) Eastern Region

## NECESSARY CONDITIONS

Law Certainty &  
Enforcement

Security & Peace

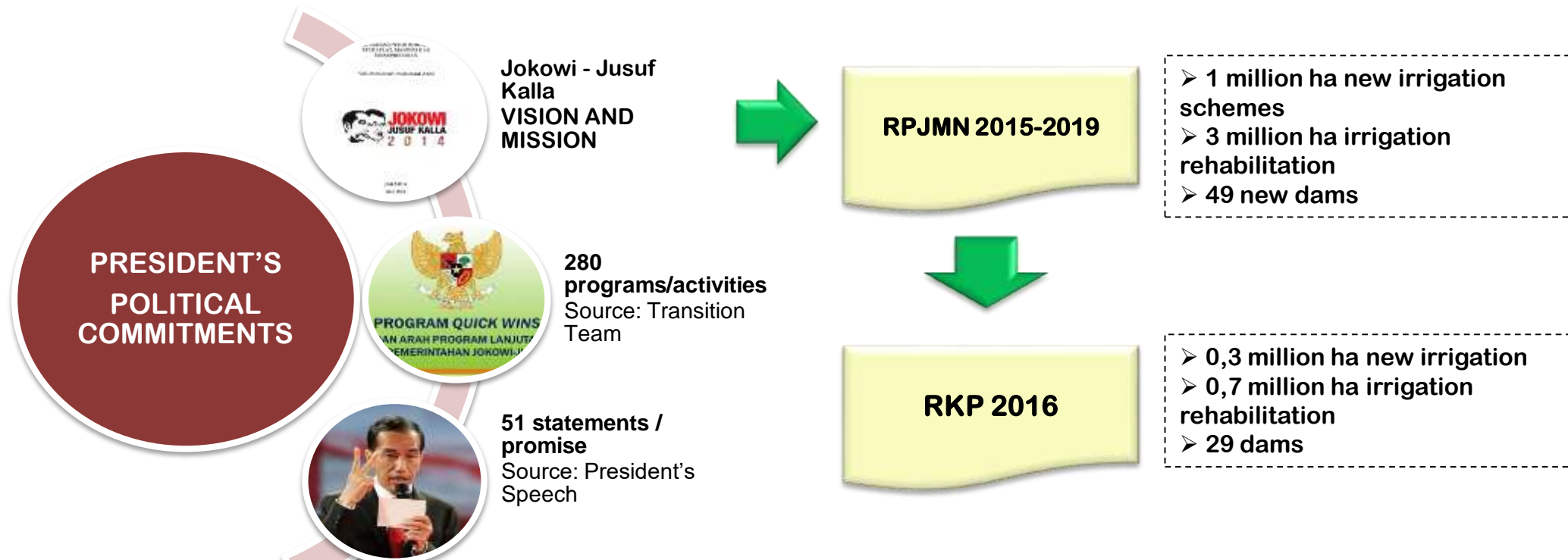
Politics & Democracy

Governance &  
Bureaucratic Reform

## QUICK WINS & OTHER CONTINUED PROGRAMS

# National Development Targets and Strategies

## GOVERNMENT'S MAIN TARGETS IN RPJMN 2015-19



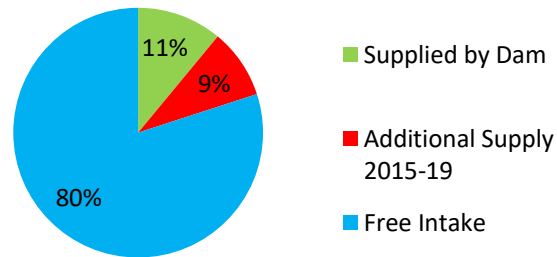
WATER SECURITY	STATUS IN RPJMN 2010-2014	TARGETS IN RPJMN 2015-2019
• Storage Per Capita	62.3 M3/capita	78.36 M3/capita
• Dams supplied irrigation schemes	11%	20%
• Irrigation Schemes	7.145 million Ha	7.914 million Ha
• Flood Protection capacity (Qdesign)	Q5-25	Q10-100



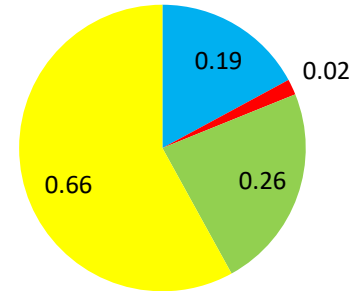
# National Development Targets and Strategies

## GOVERNMENT'S MAIN TARGETS IN RPJMN 2015-19

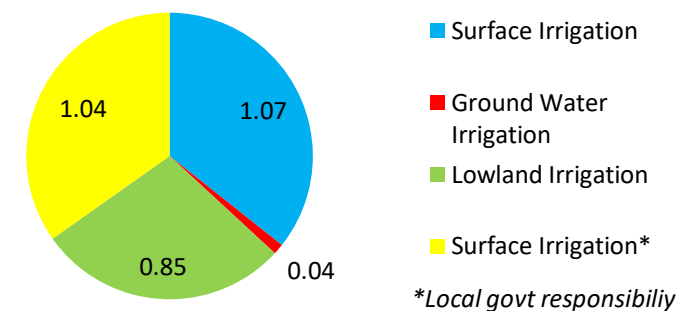
**Increase the number of dams supplied irrigation schemes**



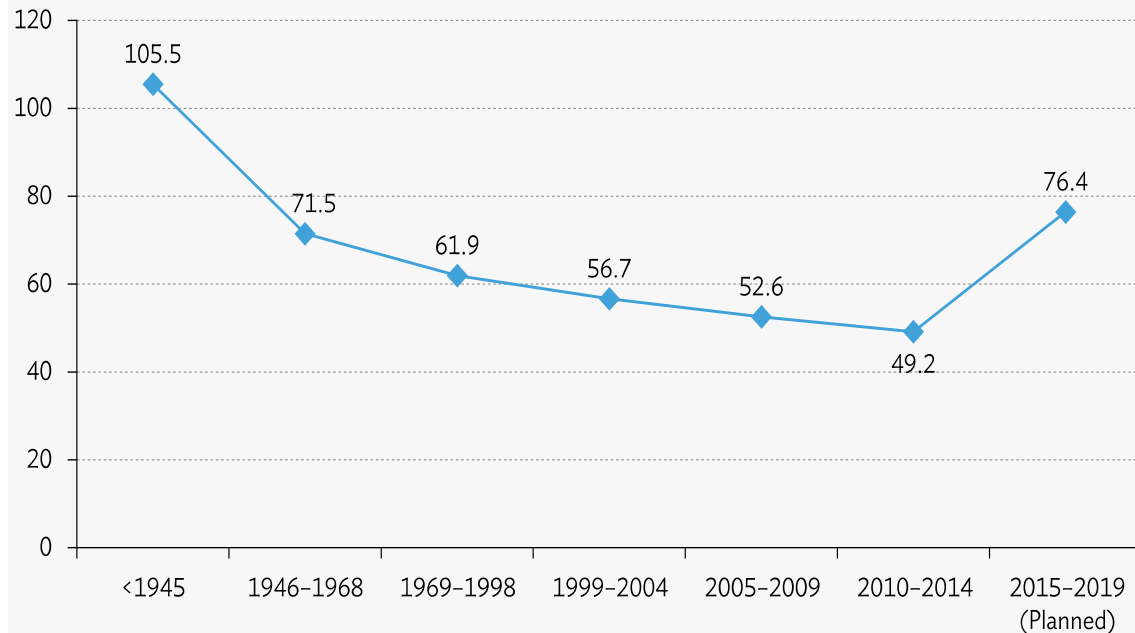
**Development of 1 million ha Irrigated Agriculture Areas**



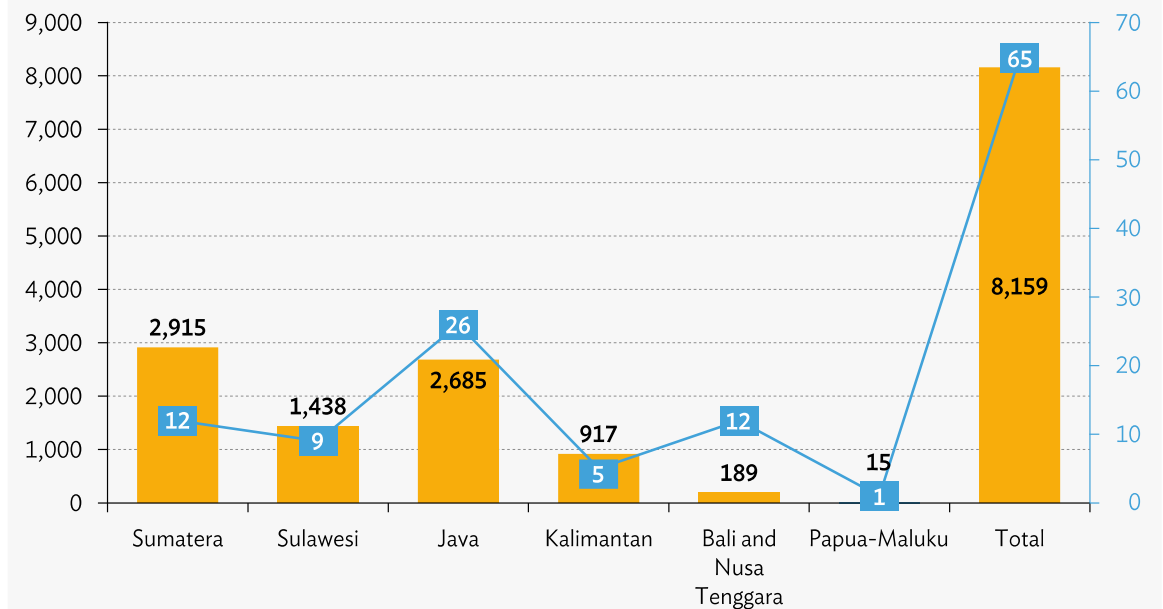
**Rehabilitation of 3 million ha poor performing irrigation schemes**



**Storage (m<sup>3</sup>/capita)**

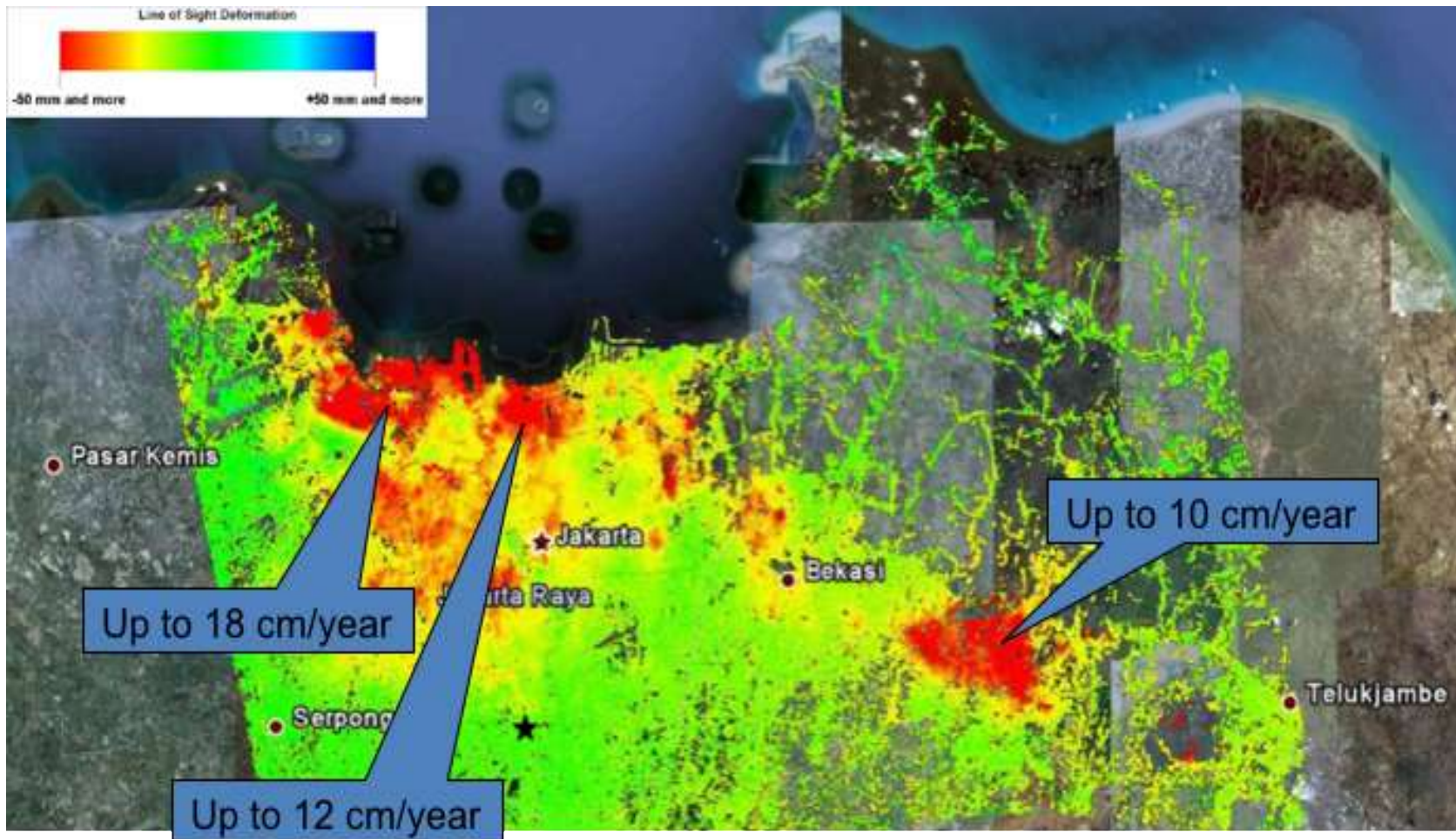


**Reservoir capacity (million, m<sup>3</sup>)**



# Jakarta's Giant Sea Wall

## A Disaster Risk Mitigation



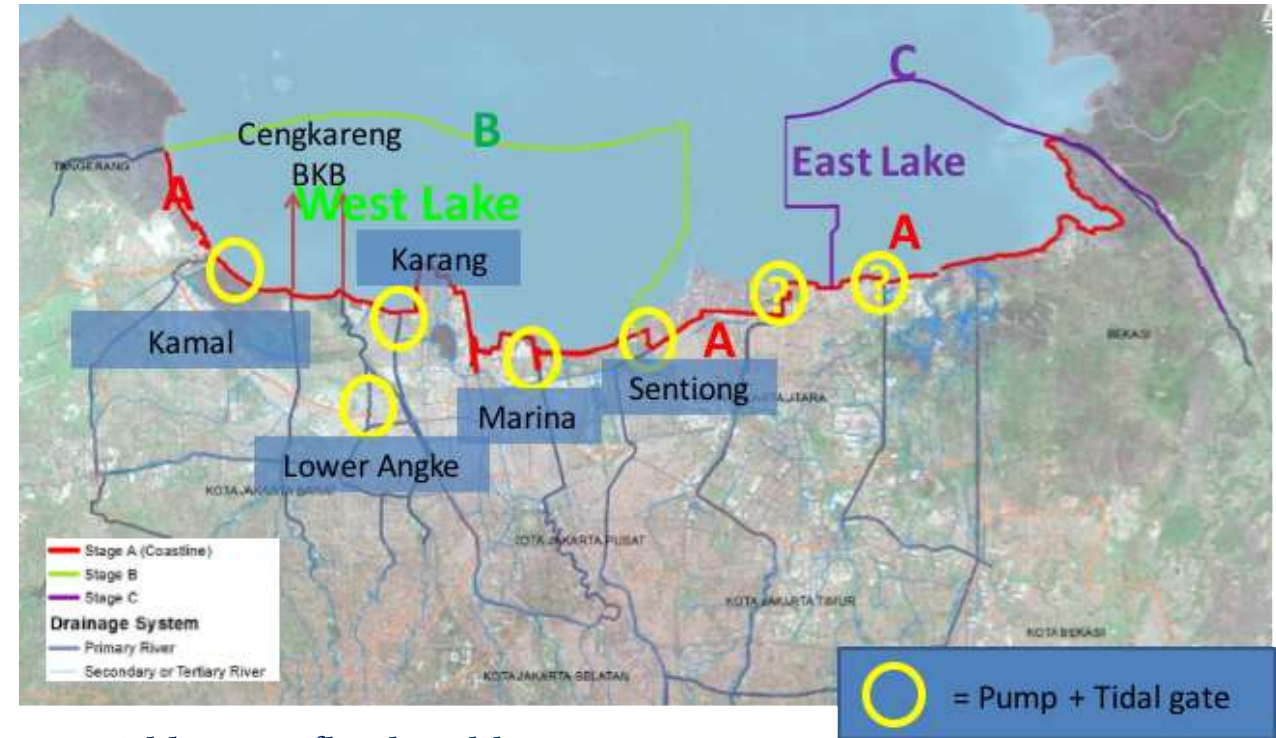
- Low coverage of water supply
- Limited raw water availability
- Over groundwater over extraction
- Serious Land Subsidence issues
- Flood problems
- Climate Change



from Challenges into Opportunities

# Jakarta Coastal Defense Strategy - Giant Sea Wall

combine with Jakarta Polders



- Addressing flood problems
- Revitalization of coastal areas
- New land development
- Road access
- New reservoirs : source of raw water

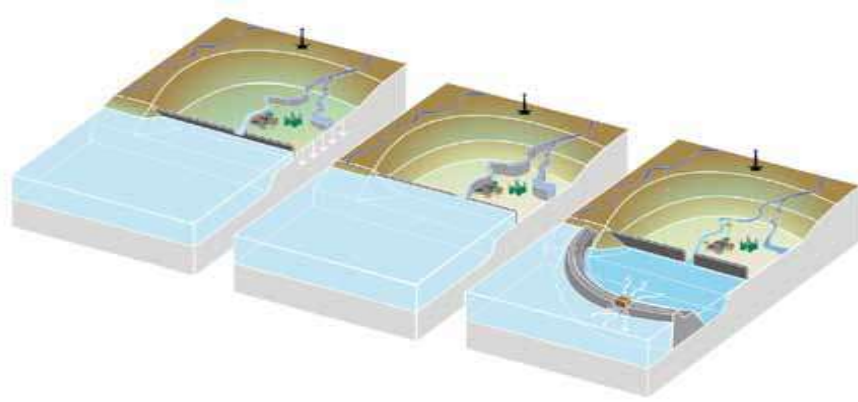


# NCICD – Great Garuda

A clean city, a city for everyone, a connected city







THANK YOU