



# Building Resilience: Jakarta's Journey in **Climate Adaptation** and **Flood Mitigation**

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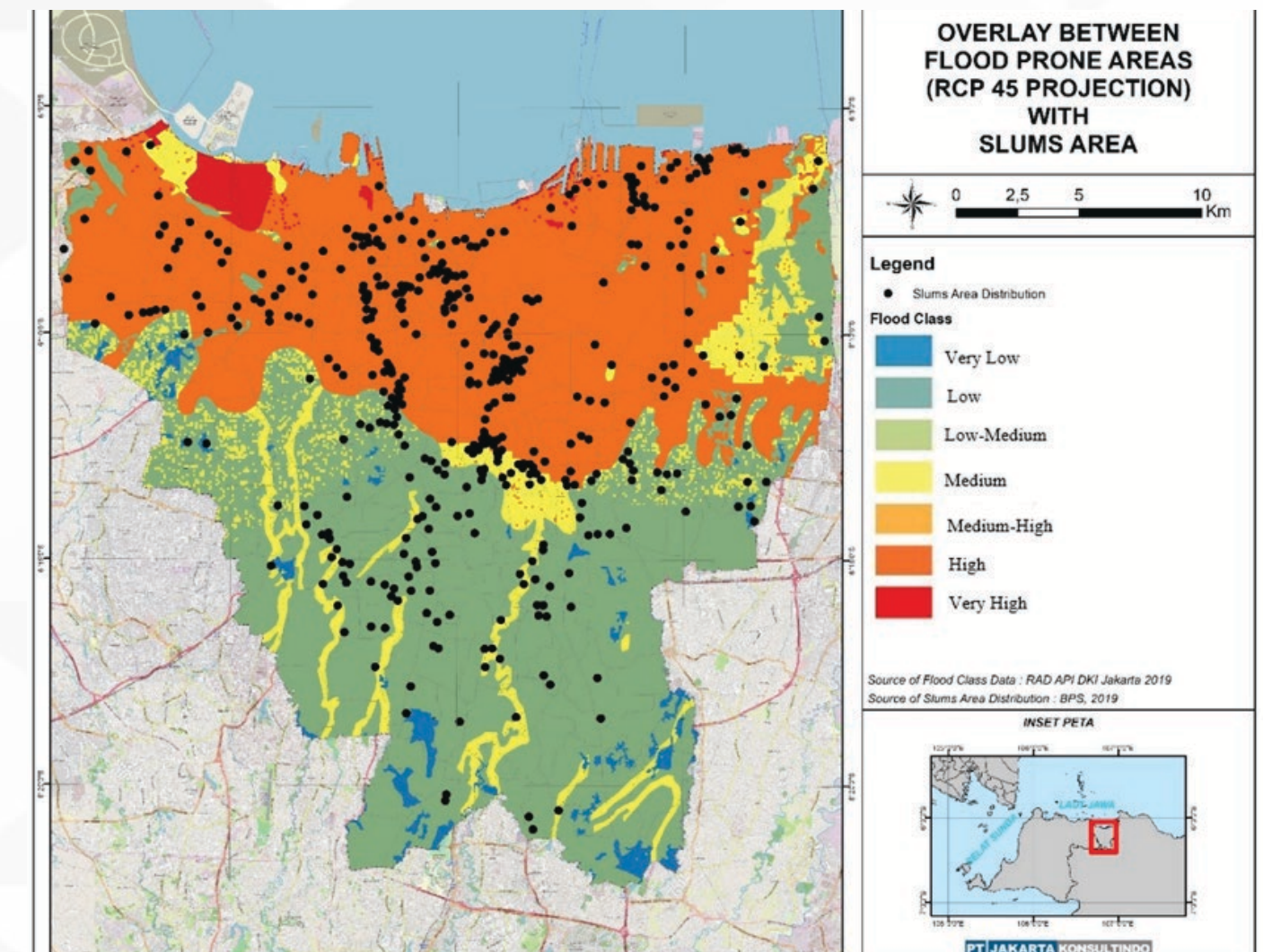




# Jakarta: A Coastal Metropolis



- Jakarta is home to **ten million people** with an area of 660 km square and is surrounded by satellite cities with a population density of 15.907/km.
- Jakarta is the economic heart of Indonesia and together with the surrounding Greater Jakarta Region (Jabodetabekpunjur), is the **fourth largest megacity** in the world.
- Jakarta is expected to experience a **1 cm/year** rise in sea levels.
- Around 40 percent of Jakarta sits below sea level.
- This has led Jakarta being vulnerable to flooding.



Map of flood prone areas and the distribution of slum areas in Jakarta

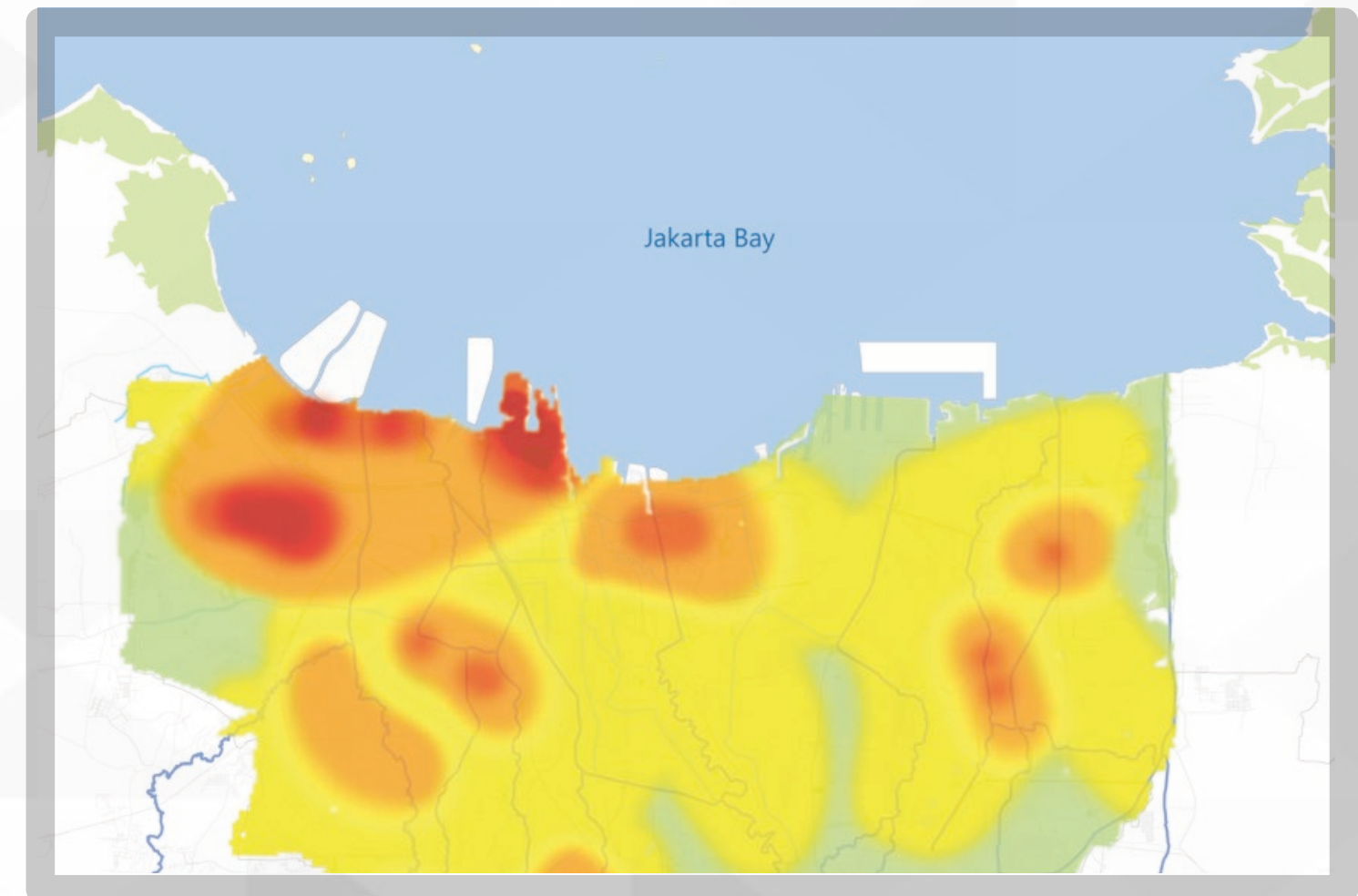
# Jakarta Coastal Problems



- sea level rise
- land subsidence
- coastal pollution (marine debris, untreated sewage discharge, and industrial waste)
- clean water and sanitation access
- waste management
- habitat degradation
- tidal flood

## Legend

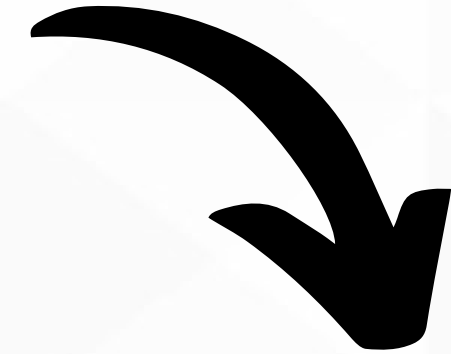
Land subsidence per year



Subsidence rates in North Jakarta (2020)

# City Resilience Strategy of Jakarta

Jakarta has taken the steps to become a resilient city. These steps need to be improved in every possible methods, including implementing the City Resilience Strategy.

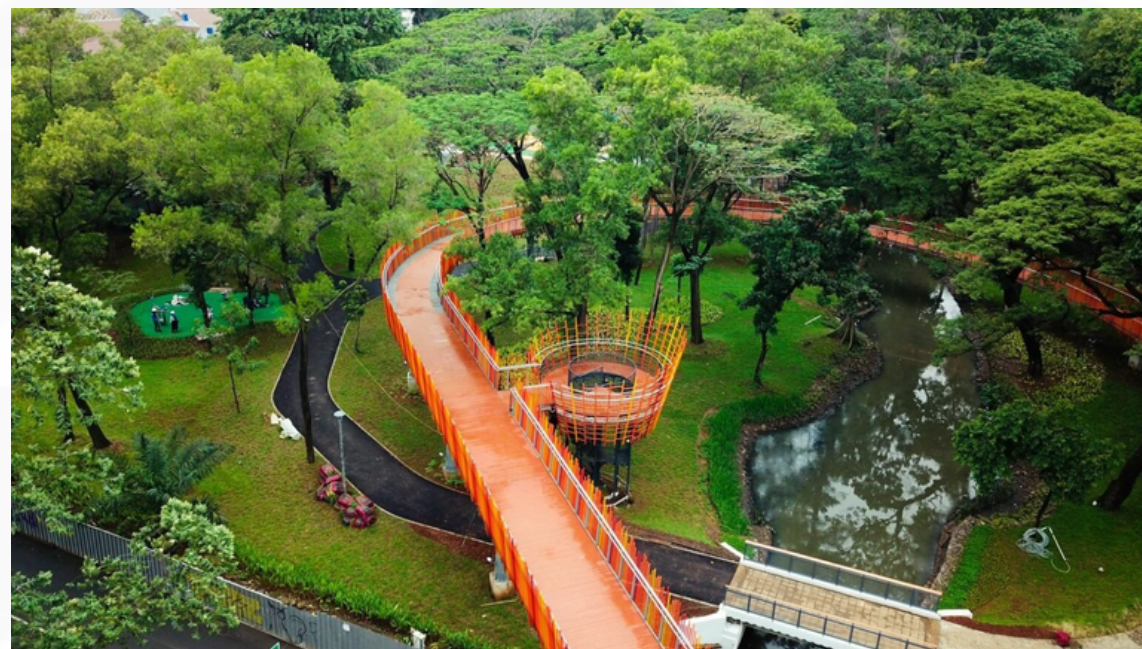



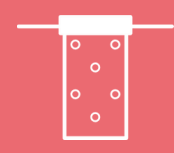


City resilience strategy of Jakarta already considered in the regional development plan document





# Jakarta's Effort to be Resilient







Various efforts have been made by Jakarta in reducing disaster risk and the impact of climate change. Some examples of activities carried out which are also included in our Regional Development Plan Documents are as follows:



-  Green Open Space/  
(thematic public space)
-  Infiltration Wells/*Sumur Resapan*
-  Air Pollution Control
-  Food security

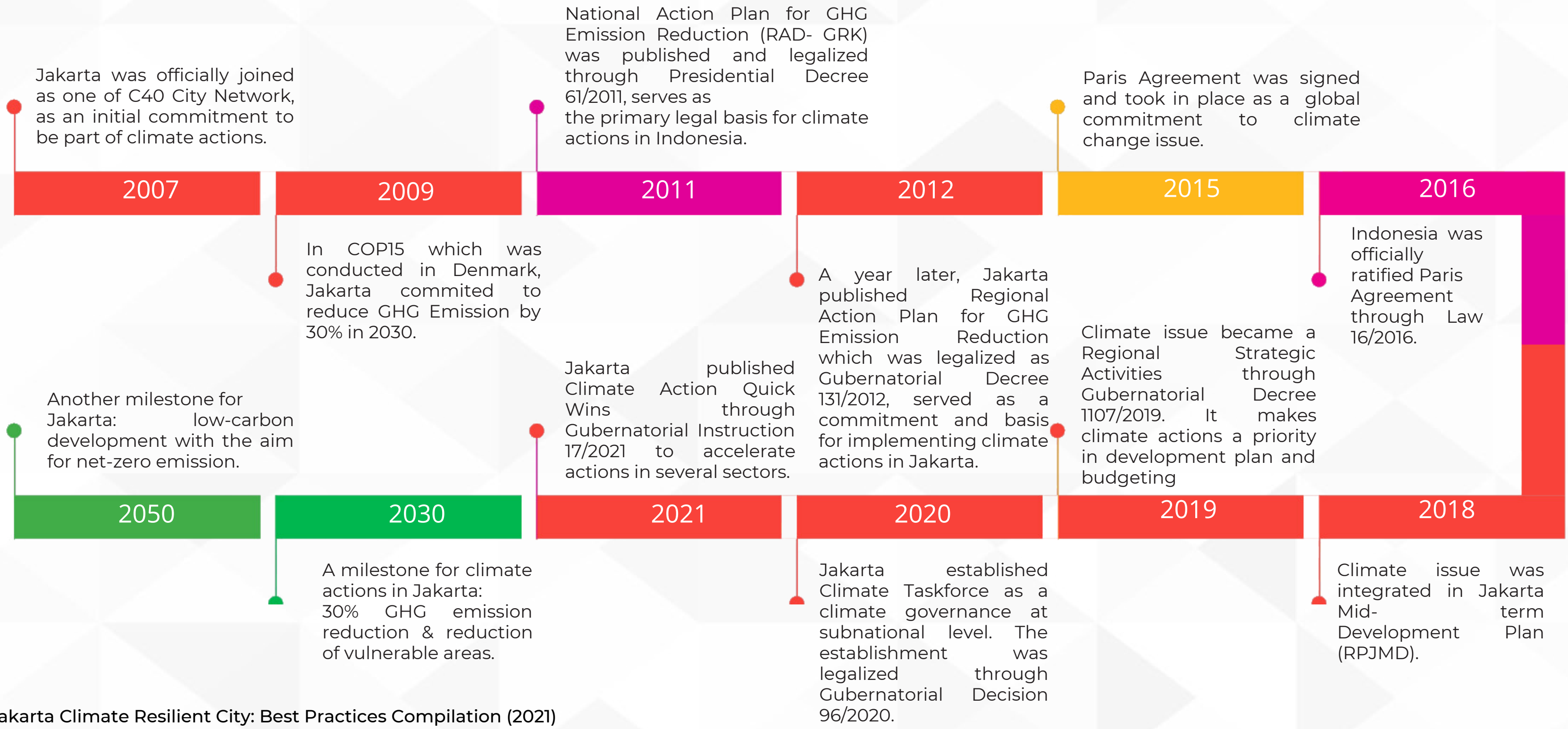
-  River Naturalisation  
and Normalization
-  Rain Water Harvesting
-  Waste Bank/*Bank Sampah*
-  Intermediate Treatment  
Facility (ITF)

-  TransJakarta
-  MRT
-  Electric Bus
-  JAKI App: integrated  
system

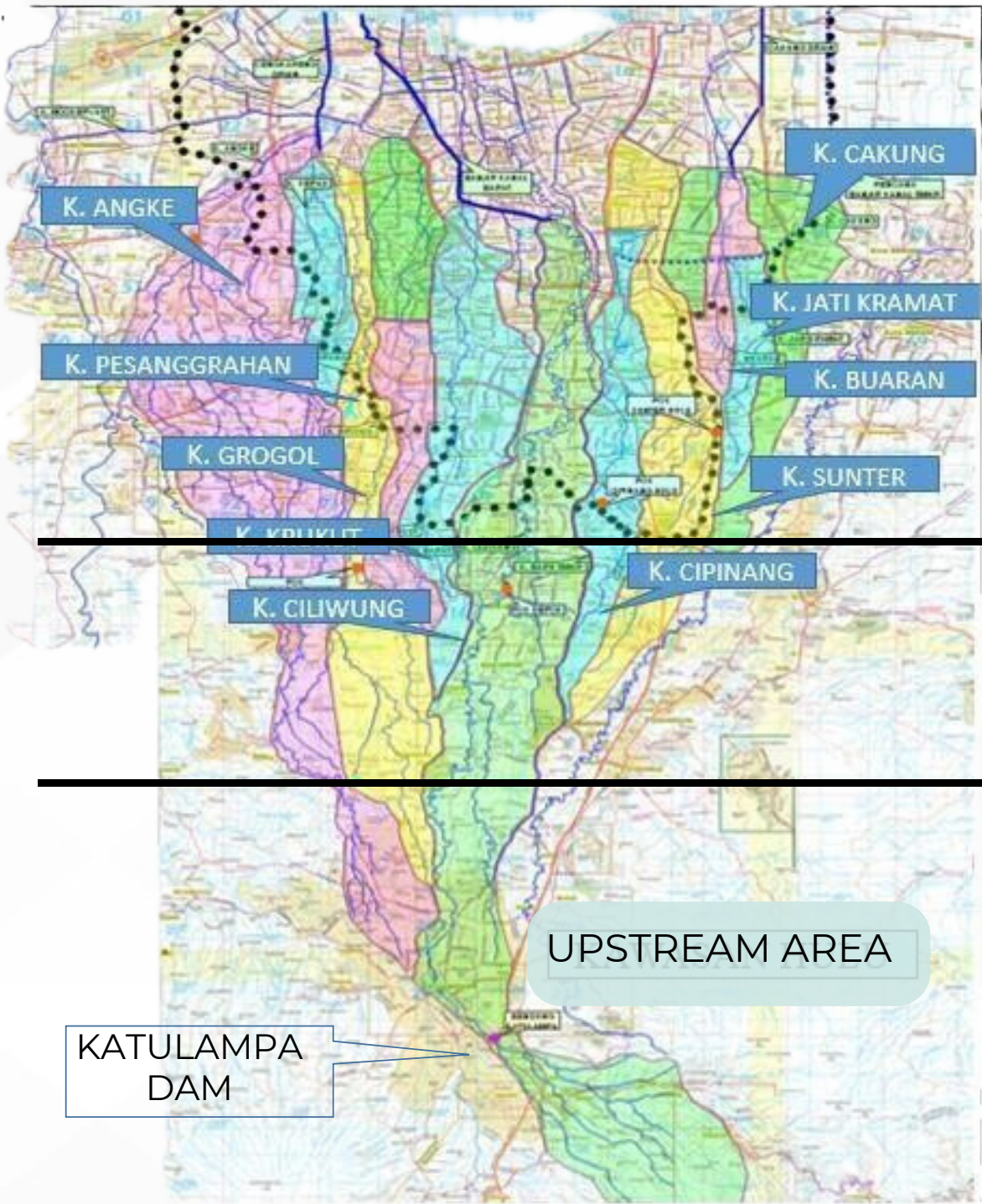
# Jakarta Journey to be a Climate Resilience City



■ Actions at local level (Jakarta)    
 ■ Actions at national level (Indonesia)    
 ■ Actions at global level



# Jakarta's flood control system

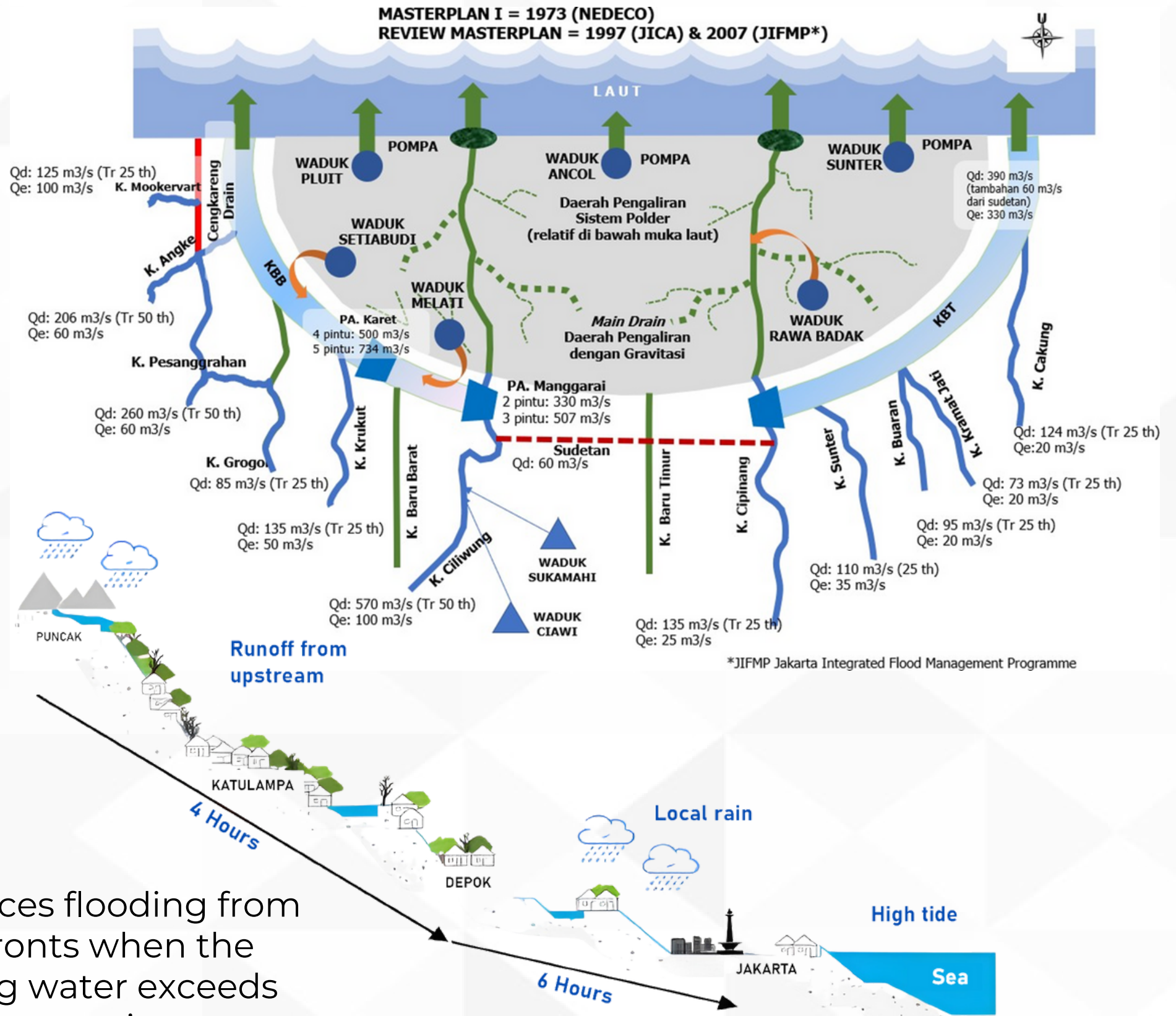


Catchment Area Jakarta 650 km<sup>2</sup>  
 Catchment Area (upstream) 850 km<sup>2</sup>

lowland area

middle area

highland area



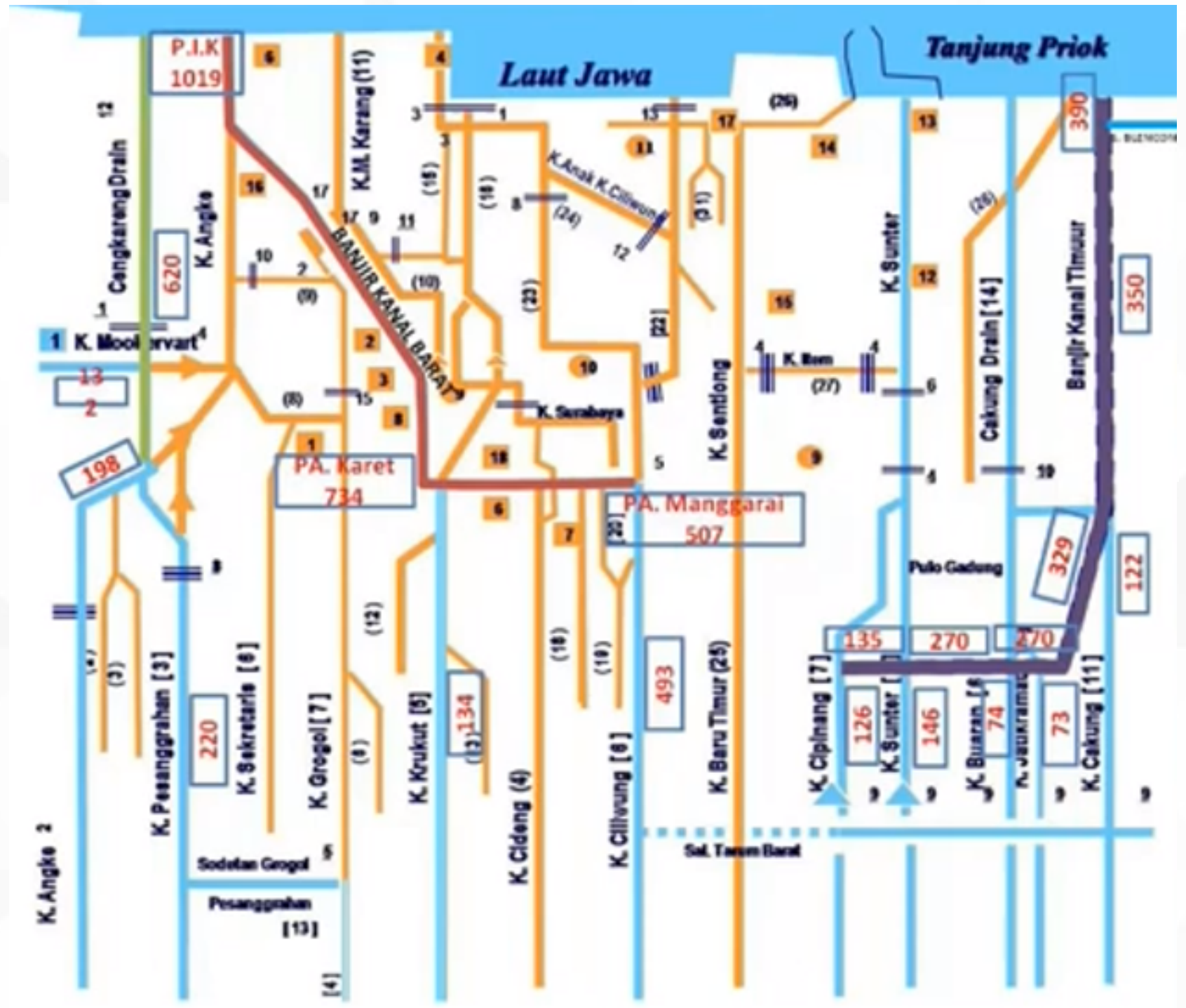
Jakarta faces flooding from three fronts when the incoming water exceeds the capacity.

# Cooperation and Budgeting for Flood Control



	national government authority
	local government authority
	west flood canal
	cengkareng drain
	east flood canal

Existing ca  
1414 m3



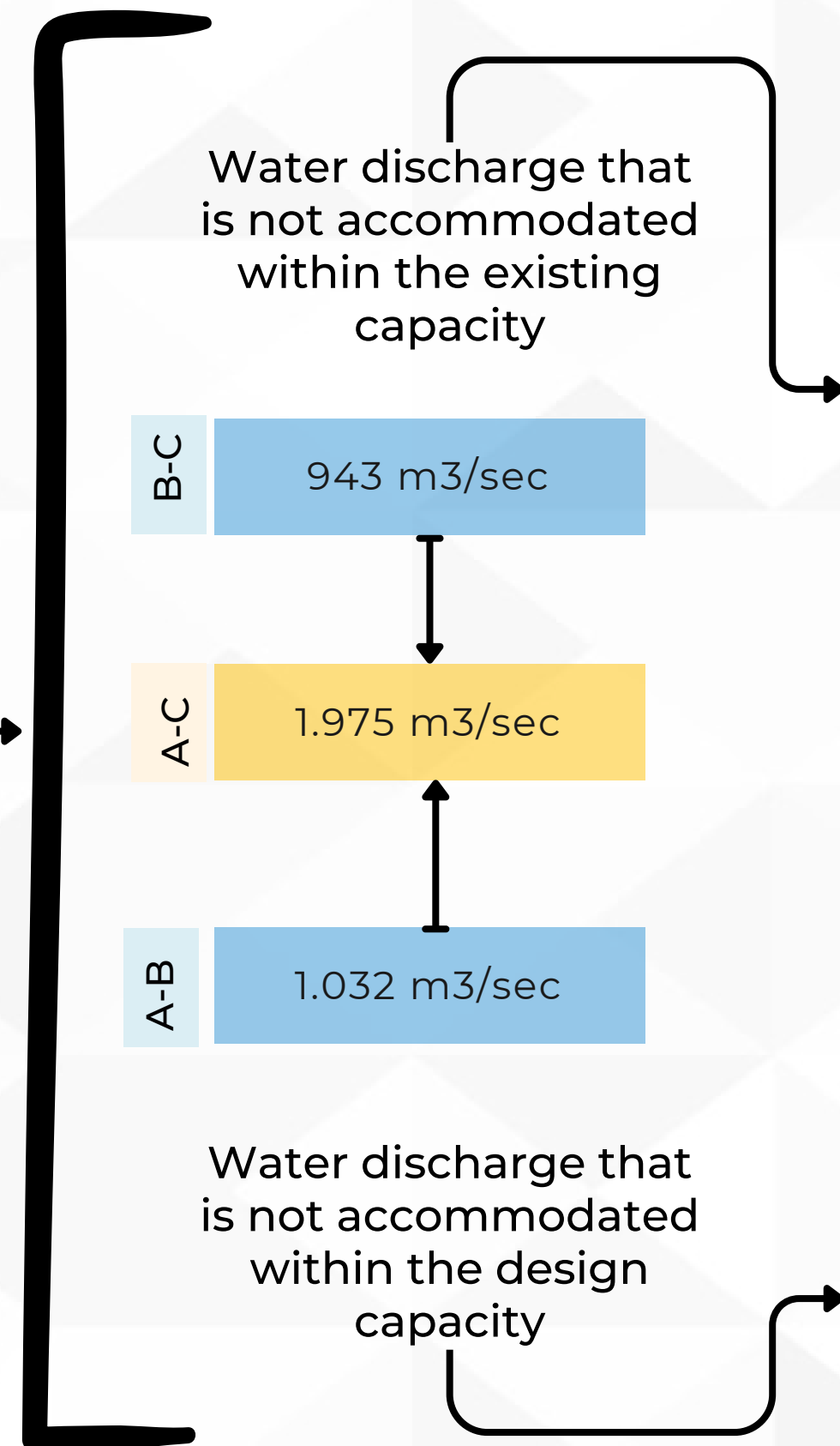
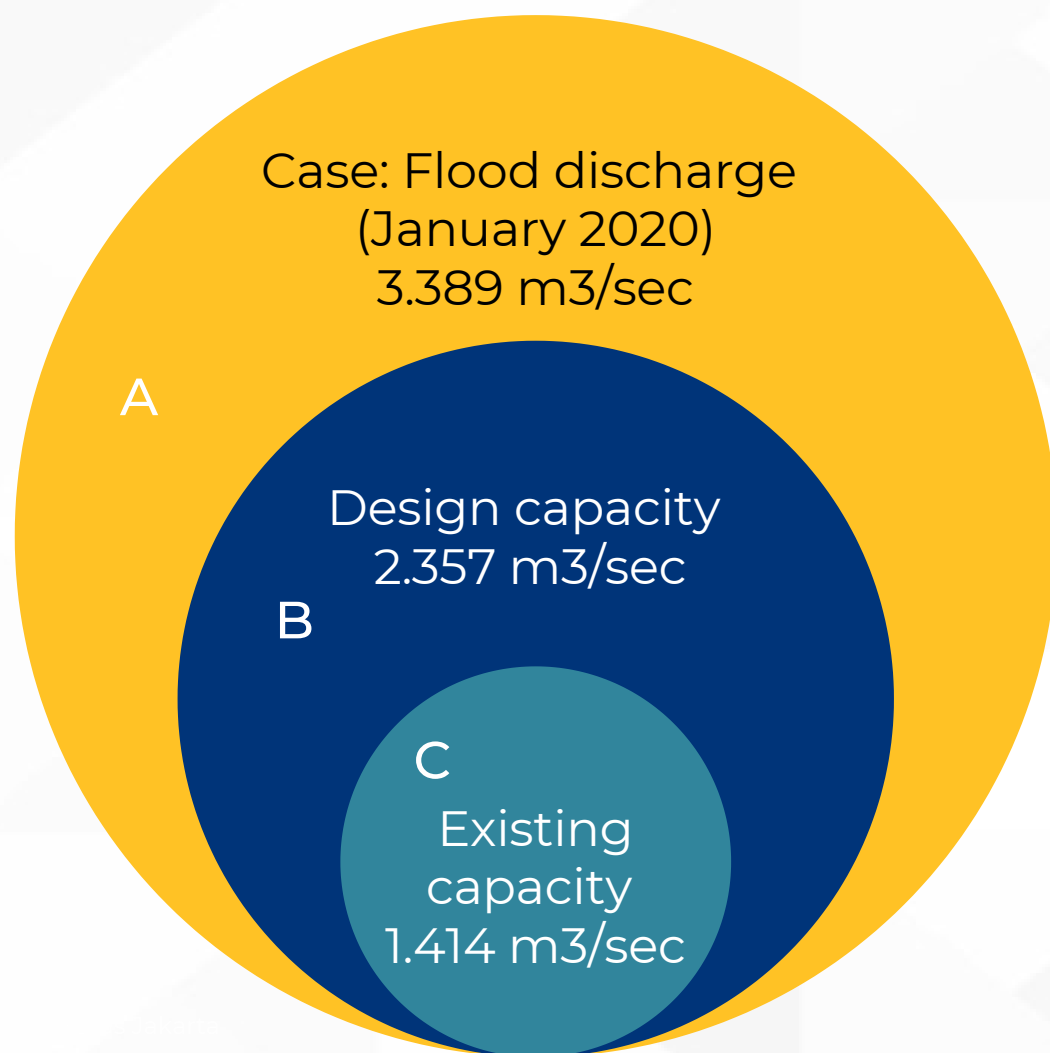
Network of rivers



# Bridging the Capacity Gap for Integrated Flood Control

Flood management from time to time

Year	Max. precipitation intensity (mm/day)	Inundated area		Refugees	Death toll	Ebb time
		Number of district	Total area (km2)			
2020	377	390	156	31.232	19	4
2015	277	702	281	45.813	5	7
2013	100	599	240	90.913	40	7
2007	340	955	455	276.333	48	10



Infrastructure development in accordance with the master plan design:

- river widening
- Polder development and rehabilitation
- River Dredging
- Coastal Embankment Development

e.g. NCICD and 942 Programme

- building/revitalizing reservoirs, lakes, ponds;
- making vertical infiltration and drainage wells;
- building green and blue open spaces

# NCICD and 942 Project

## National Capital Integrated Coastal Development:

- Coastal Protection
- Land Subsidence Management
- It considers the interconnections between coastal protection, urban development, infrastructure, and water management



## Project 942

9



Development of  
9 polders,

4



4 reservoirs,

2



revitalization  
of rivers

## Three phases of project (NCICD) are as follows:

Phase A focuses on improving the existing coastal protection. This includes the reinforcement and development of the existing coastal dams of 30 kilometers in length and the development of 17 artificial islands on the Jakarta Bay. The first phase was launched in the beginning of September 2014. The construction is planned to begin in early 2016.

Phase B focuses on efforts to develop the west outer giant seawall planned to be constructed during 2018 through 2022.

Phase C focuses on constructing east outer giant seawall planned for after 2023. Several long-term developments in the east of the Jakarta Bay are conducted by closing part of the bay in order to anticipate if land subsidence in the east part of Jakarta cannot be avoided.

# Building Coastal Community Resilience through Shell Waste Upcycling



As a neighborhood located in the north of Jakarta, Kalibaru is well-known for its green mussels industries which are distributed throughout the city. Despite its popularity, the process of the green mussel industry left several environmental issues due to the accumulation of shell waste, which has become one of the primary concerns in Kalibaru.



Project: Green Mussels Shell Waste Upcycling in Kalibaru

Innovation to address waste and livelihood challenges in coastal community.



# THANK YOU

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