ACCCRN
Asian Cities Climate Change Resilience Network

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Building UCCR in Coastal Areas of Indonesia

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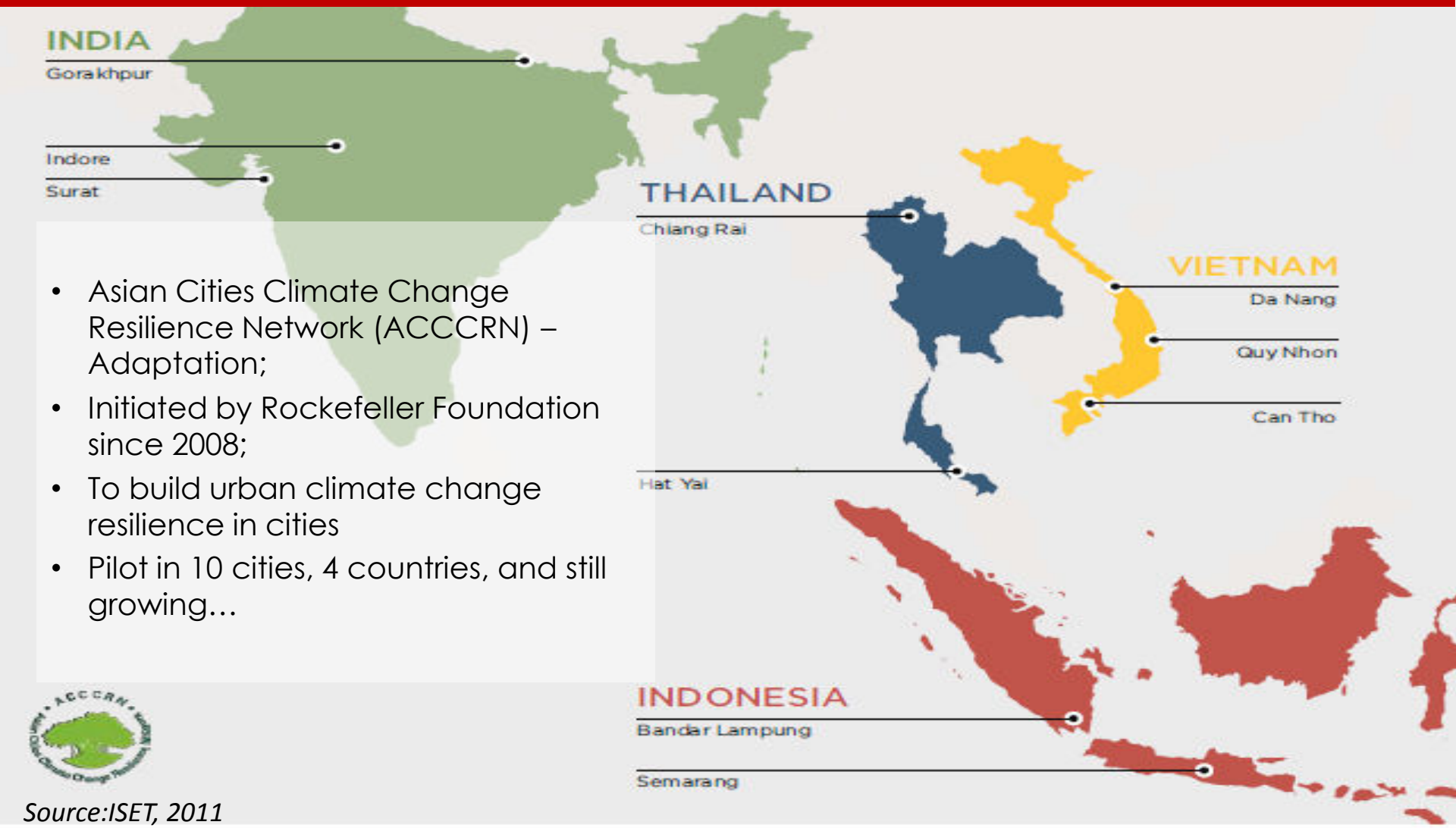
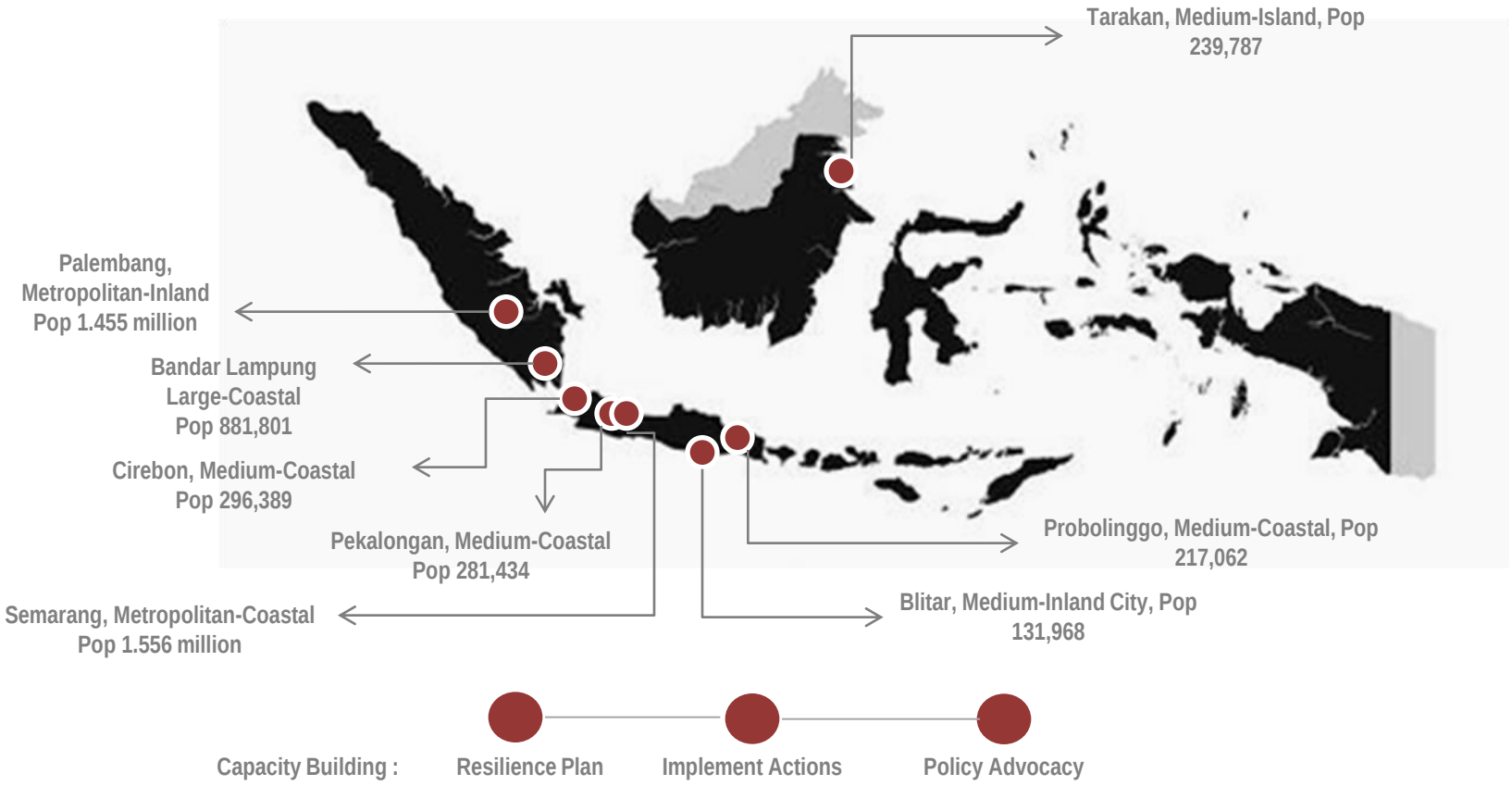
What is ACCCRN?

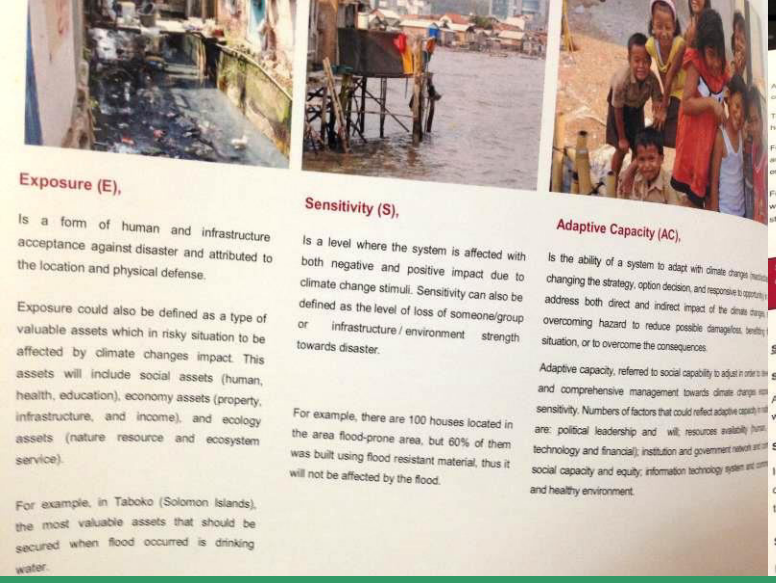


- Asian Cities Climate Change Resilience Network (ACCCRN) – Adaptation;
- Initiated by Rockefeller Foundation since 2008;
- To build urban climate change resilience in cities
- Pilot in 10 cities, 4 countries, and still growing…

Source:ISET, 2011

ACCCRN in Indonesia





Exposure (E),

Is a form of human and infrastructure acceptance against disaster and attributed to the location and physical defense.

Exposure could also be defined as a type of valuable assets which in risky situation to be affected by climate changes impact. This assets will include social assets (human, health, education), economy assets (property, infrastructure, and income), and ecology assets (nature resource and ecosystem service).

For example, in Taboko (Solomon Islands), the most valuable assets that should be secured when flood occurred is drinking water.

Sensitivity (S),

Is a level where the system is affected with both negative and positive impact due to climate change stimuli. Sensitivity can also be defined as the level of loss of someone/group or infrastructure / environment strength towards disaster.

For example, there are 100 houses located in the area flood-prone area, but 60% of them was built using flood resistant material, thus it will not be affected by the flood.

Adaptive Capacity (AC),

Is the ability of a system to adapt with climate changes [illegible] changing the strategy, option decision, and responsive to opportunity address both direct and indirect impact of the climate change overcoming hazard to reduce possible damage/loss, benefits situation, or to overcome the consequences.

Adaptive capacity, referred to social capability to adjust in order to [illegible] and comprehensive management towards climate change sensitivity. Numbers of factors that could reflect adaptive capacity in [illegible] are: political leadership and will; resources availability (human technology and financial); institution and government network and [illegible] social capacity and equity; information technology system and [illegible] and healthy environment.

After completion of the above four steps, we can startthe development of VA which consist of six steps.

To develop VA at least (a minimum) of three3 steps must be completed, which are: hazard analysis, vulnerability and risk.

For the other three steps, which are scientific base of climate change, community and policy analysis, are not obligatory, but recommended to be conducted if there is enough fund to create better results of VA.

Following is flow cart of the main process of developing VA. The results of the VA will later be used as an input in strategy planning/adaptation action for precise strategy results.

SCIENTIFIC BASE ON CLIMATE CHANGES

HAZARD ANALYSIS

VULNERABILITY ASSESMENT

CLIMATE CHANGES RISK ANALYSIS

ADAPTATION-COMMUNITY ANALYSIS

ADAPTATION-POLICY ANALYSIS

STEP BY STEP PROCEDURES ON VULNERABILITY ASSESSMENT

STEP 1: CITY CLIMATE ANALYSIS (OPTIONAL)

An analysis of current and future climate condition to generate issue statement, which was potential hazard of climate changes condition

STEP 2: HAZARD ANALYSIS (MUST)

In this steps, character, magnitude, rate and hazard will be analyzed based on output hazard on issue statement of Step 1 (if applied). If it is not applied, it refers to disaster history or based on primary survey with the local community

STEP 3: VULNERABILITY ASSESMENT (MUST)

In this step, factor, indicator and vulnerable component are analyzed.

STEP 4: RISK ANALYSIS (MUST)

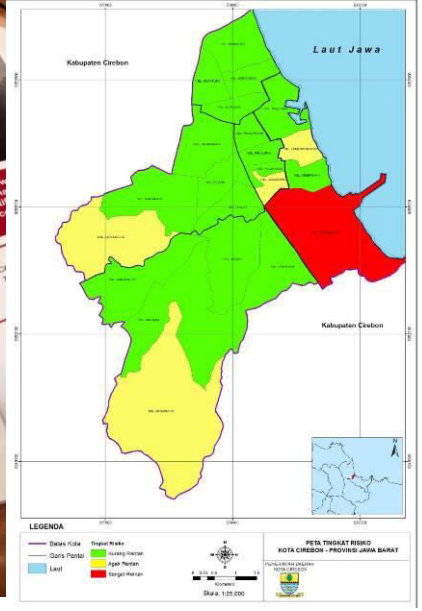
Risk is an overlay results between hazard and vulnerability [illegible]
Thus an overlay of step 2 and step 3 are applied.

STEP 5: COMMUNITY'S ADAPTATION AND ACTION ANALYSIS (OPTIONAL)

This part will explain the adaptive capacity of community using [illegible]

STEP 6: ADAPTATION-POLICY ANALYSIS (OPTIONAL)

This part will explain the adaptive capacity of the government using [illegible]



BUILDING UCCR IN CITY

Climate Change Working Group

Accessing Funding Opportunity

Vulnerability/ Climate Risk Assessment

City Resilience Strategy

Implementation of City Resilience Strategy

Monitoring and Evaluation, Dissemination, Public Consultation

Capacity Building

ACCCRN
Asian Cities Climate Change Resilience Network

Why Coastal Area Vulnerable?

Sea Level Rise (Permanent Water Inundation)

Sea water come up from rivers and canals and low land surfaces,

Ristek, DKP, UNDIP, IPB, 2009

Sea Level Rise 15,5 cm (20 years SLR simulation model)
Sea water come up from rivers and canals and low land surfaces,

Ristek, DKP, UNDIP, IPB, 2009

Sea Level Rise 46,5 cm (60 years SLR simulation model)

Sea water come up from rivers and canals and low land surfaces,

Ristek, DKP, UNDIP, IPB, 2009

Sea Level Rise 62 cm (80 years SLR simulation model)
Sea water come up from rivers and canals and low land surfaces,

Ristek, DKP, UNDIP, IPB, 2009

Sea Level Rise 77,5 cm (100 years SLR simulation model)

Sea water come up from rivers and canals and low land surfaces,

Ristek, DKP, UNDIP, IPB, 2009

Intervention Project in Semarang City

Flood Early Warning System

The project aims to reduce vulnerability to and impact of flood disasters by building preparedness capacity of the most vulnerable communities and local government through the development of an early warning system & evacuation strategies.

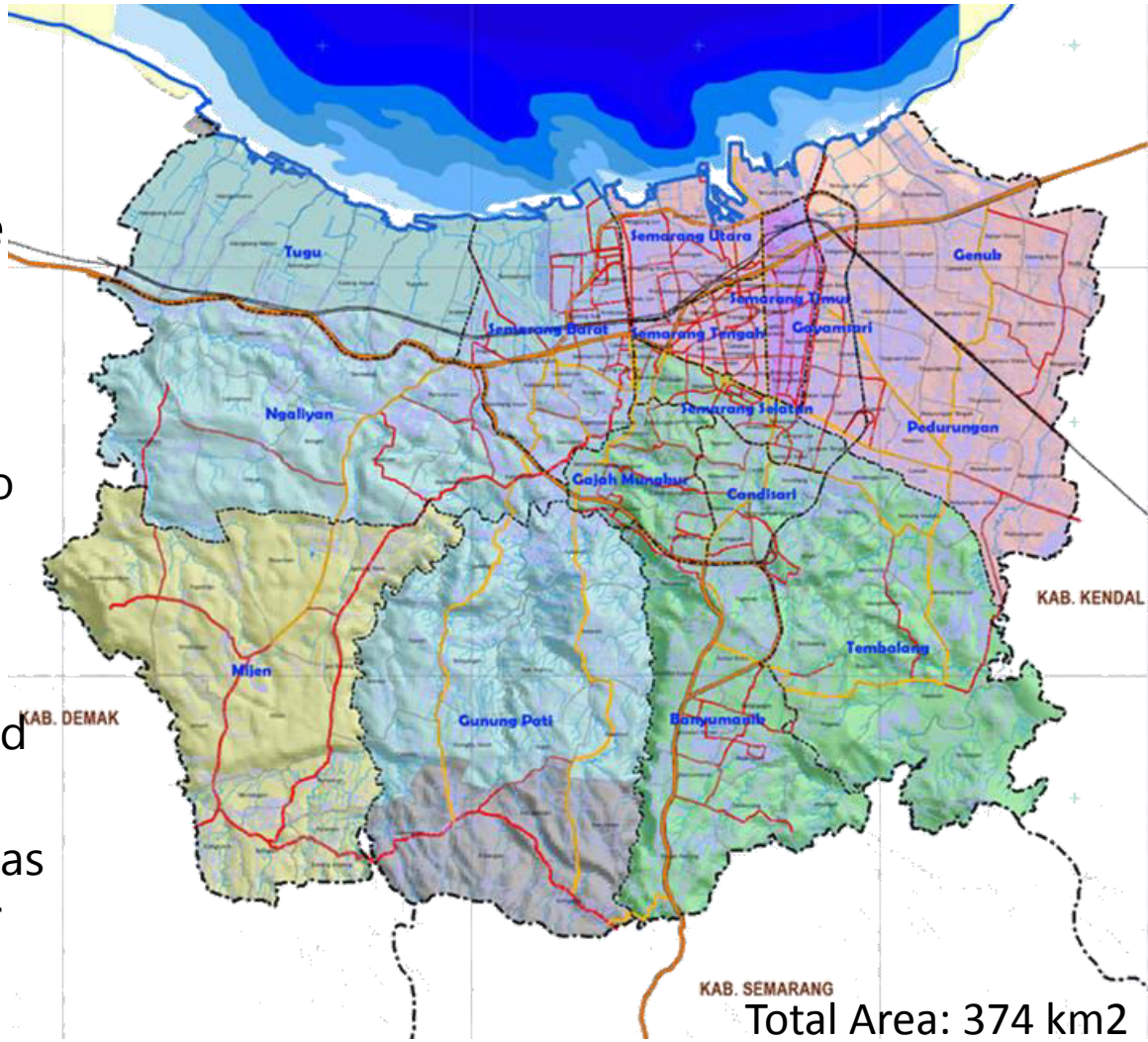
Mangrove Reforestation

The goal is to enhance the climate resilience of vulnerable people living along the coast of Semarang City in two coastal districts by strengthening the mangrove ecosystem and adaptive capacity of coastal community.

Semarang as Coastal City

Vulnerable characteristics in Semarang:

1. Lowland regions which are exposed to coastal flood and sea level rise
2. Settlement areas located in riverbed which are exposed to flooding
3. Hilly areas which are exposed to high winds
4. Areas which is exposed to land movement and landslides
5. Neighborhood residential areas on the city outskirts which far away from water sources



Total Area: 374 km2

Population: 1.629.924 people

Enhancing Coastal Community Resilience by Strengthening Mangrove Ecosystem Services and Developing Sustainable Livelihoods in Semarang City

During this project period (01/13 - 12/16): **Mangrove nursery are developed** to support seedling for mangrove rehabilitation and species enrichment (coastal biodiversity) in Semarang coastal.

Seawall (*Alat Penahan Ombak*/ APO) is also built **to protect planted mangrove** and to reactivate the broken fishpond.

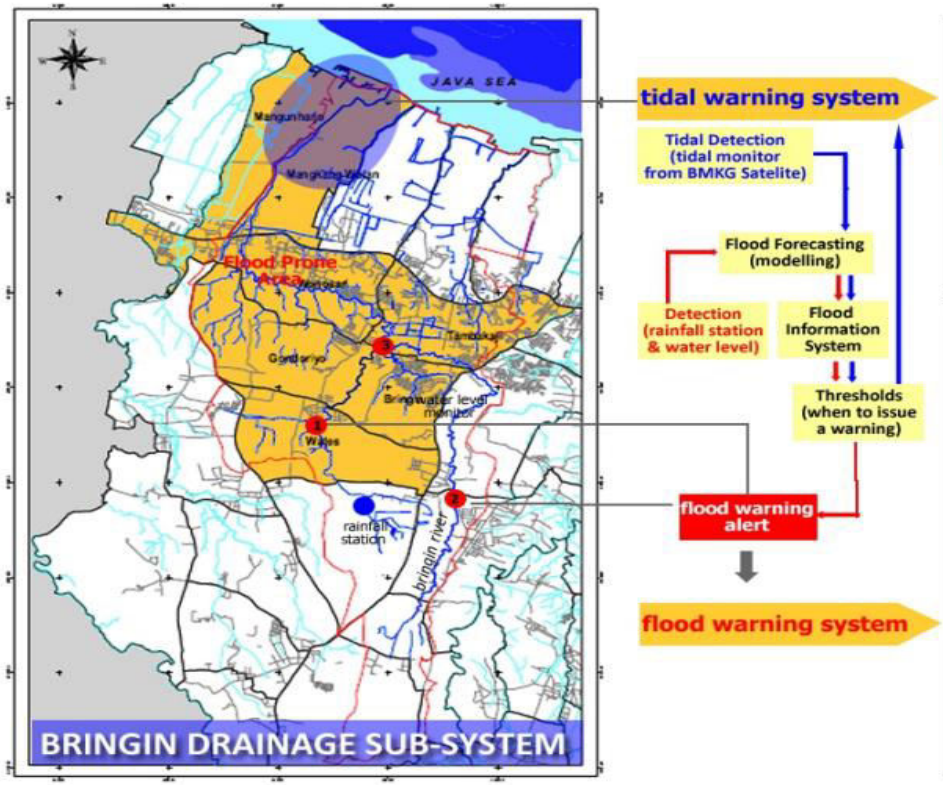
The outcomes to achieve are as follows:

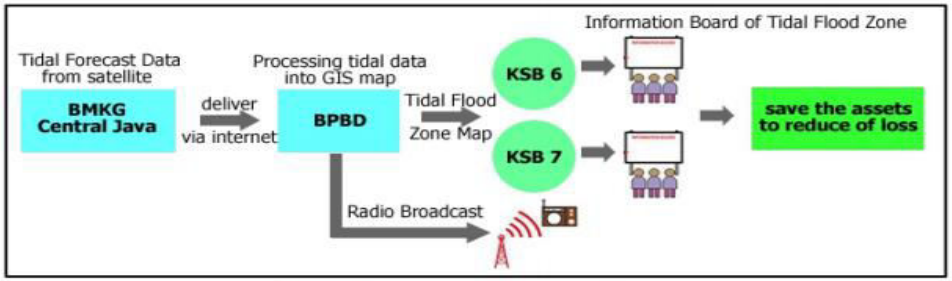
1. Improving ecosystem services & strengthening the coastal protection
2. Strengthening adaptive capacity
3. Encouraging replication, scaling up, mainstreaming lesson learned into existing cross-sector local development plan

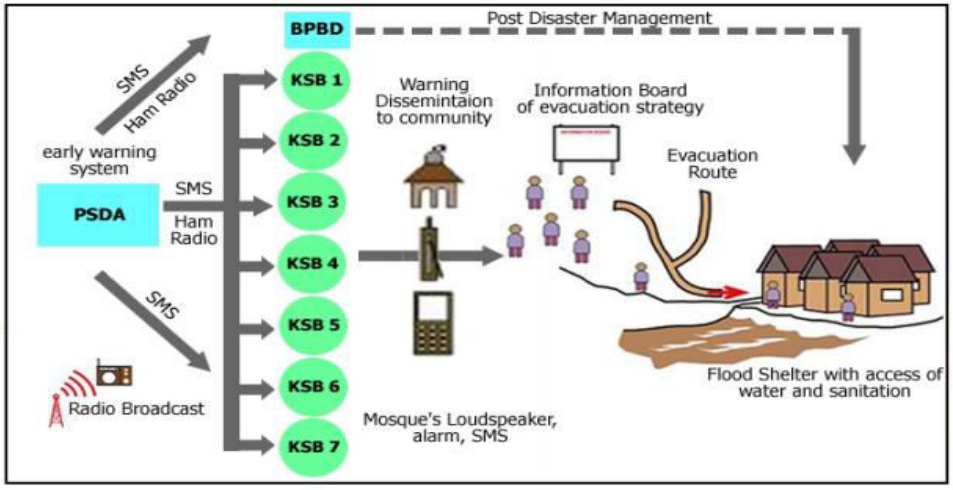
COMMUNITY INVOLVEMENT

Flood Early Warning System (FEWS)

The project aims to reduce vulnerability, loss, and casualties due to floods by strengthening communities and government response and also preparedness through flood information system development, and evacuation strategy, as well as identification of evacuation shelter.







Progress:

- Improved communication and coordination between the stakeholders in the project
- Increased capacity of disaster preparedness group. There are 7 groups, each consists of 13-18 persons.
- Flood early warning system is built, which consists tools such as automatic river water level (AWLR) and automatic rainfall recorder (ARR).

Contributions to Urban Resilience?

Communities (and government) have **more understanding against natural phenomenon** (including climate change) happening around them

Communities (vulnerable groups) have **better ability, access and capacity** regarding their contextual problems around them, such as precautions against disasters; to improve livelihood sustainability

City government able to **build their network** with other cities which joined in climate change national working group, also with donor, local NGO, university, and other institutions

Increased coordination and communication between stakeholders (better engagement)

Community has already their local knowledge to help themselves, but **leveraging support leads to better results**

City government gets **lesson learned to continue and replicate** similar projects to other locations within the city that has similar characteristics, or to improve their planned program.

Challenges

- Community still ask for assistance, but at some extend the project will end
- Land ownership issue
- People perceived differently
- Dynamics change in government's structure
- Technology unfamiliarity as well as the needs to improve
- To maintain the sustainability
- Capturing opportunities to leverage

Terima Kasih

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