Jakarta Research Council

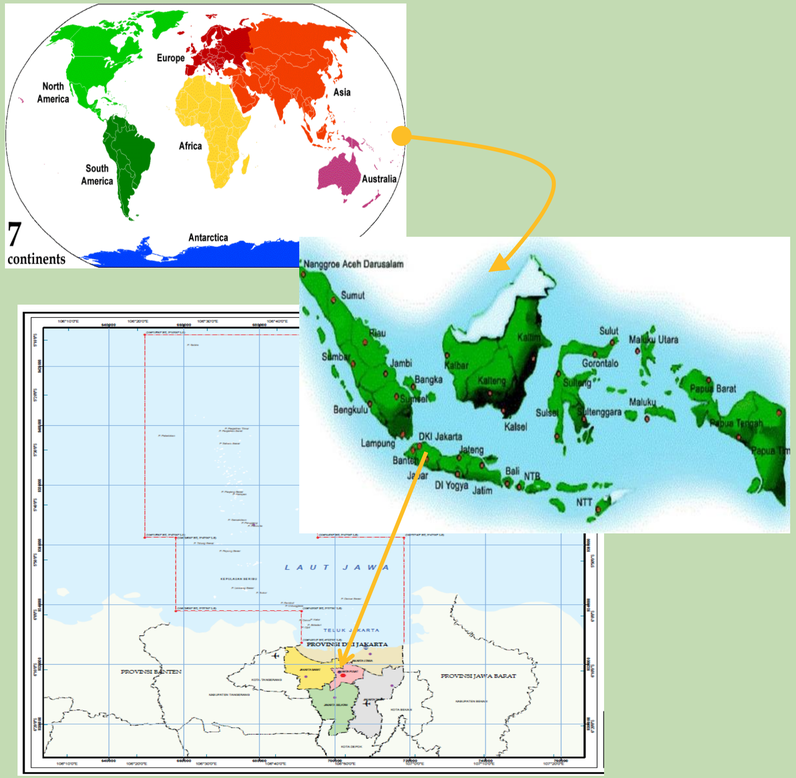
Jakarta Capital City Government

Toward Sustainable Green Growth Jakarta

Aisa Tobing
Senior Adviser for Environmental and Urban Management
Jakarta Research Council, Jakarta Provincial Government

Japan-OECD Policy Forum on Urban Development and Green Growth
October 15, 2014

Jakarta Megacity

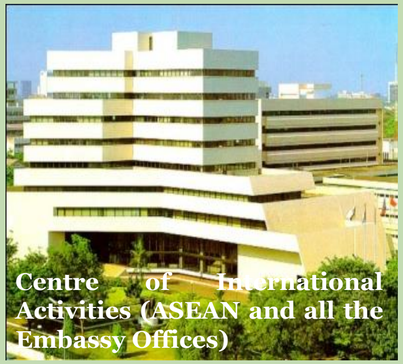


- Land area of 662 km^2
- Total population almost 10 million (Greater Jakarta 28 million)
- Commuters : 2 million, predicted to be 2.5 million in 2030
- Population Density: 13,000 to 15,000 per km2, in certain areas 20,000 to 30,000 per km2
- Population growth 1.39%
- GRDP USD 34,5 Billion


Center of financial and national economic activity


Gate of Global and International Hubs


Capital City of Indonesia


Centre of International Activities (ASEAN and all the Embassy Offices)

Center of ICT, Science, and Intellectual

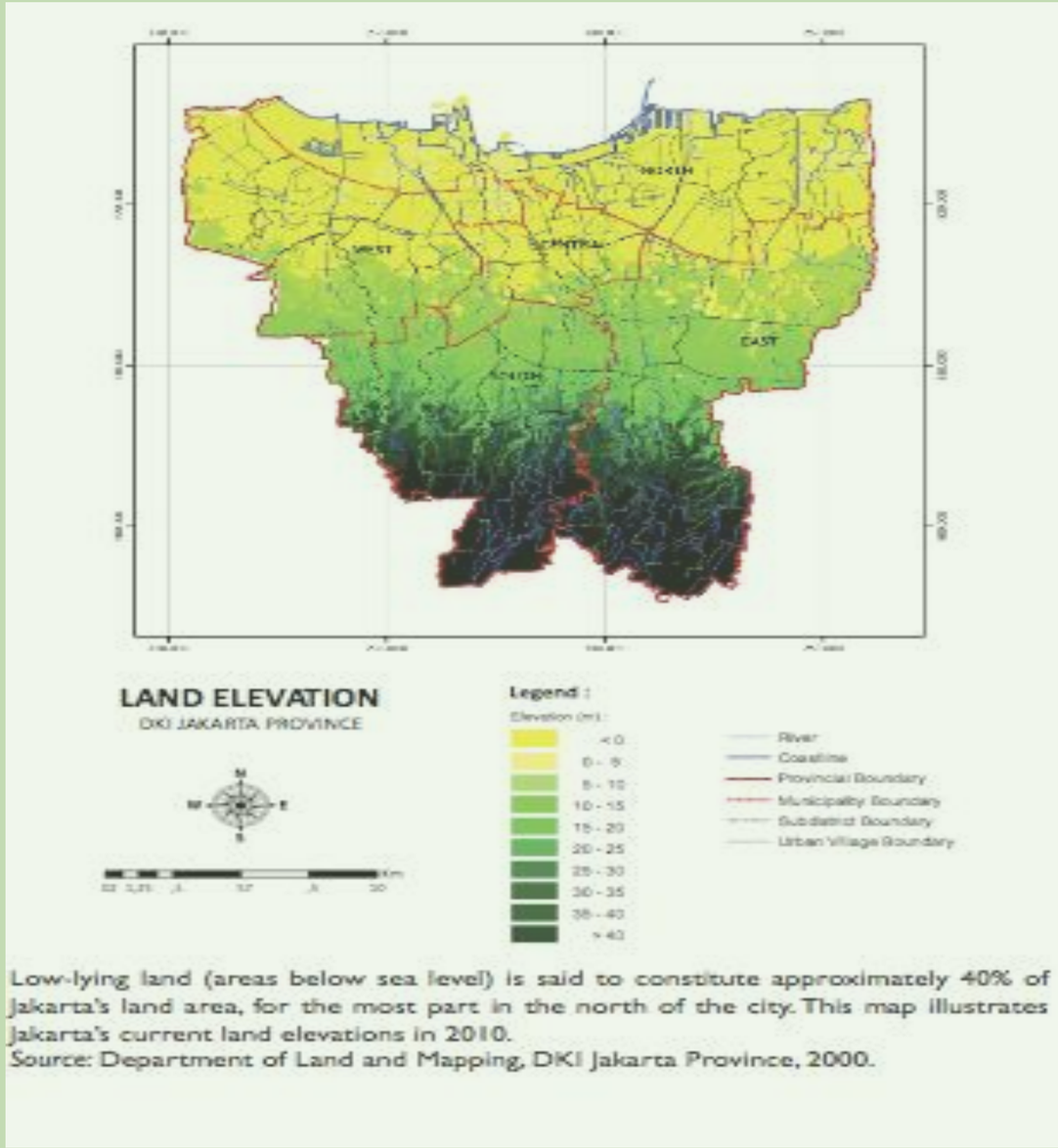

Center of culture and social activities


Centre of tourism and Recreation


National Monument

Topographic Characteristics

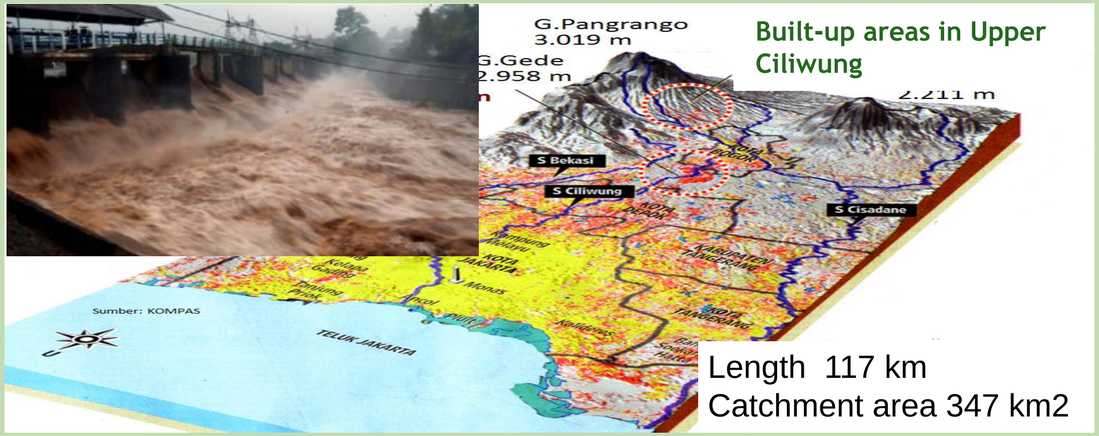
Situated in a delta of 13 rivers, which 40 percent of the land lies below Mean Sea Level, Jakarta is vulnerable to urban floods and other environmental issues



Low-lying land (areas below sea level) is said to constitute approximately 40% of Jakarta's land area, for the most part in the north of the city. This map illustrates Jakarta's current land elevations in 2010.
Source: Department of Land and Mapping, DKI Jakarta Province, 2000.

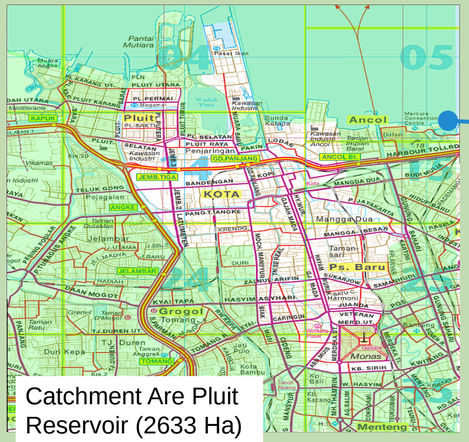
Topographic Characteristics

Situated in a delta of 13 rivers, which 40 percent of the land lies below Mean Sea Level, Jakarta is vulnerable to urban floods and other environmental issues.



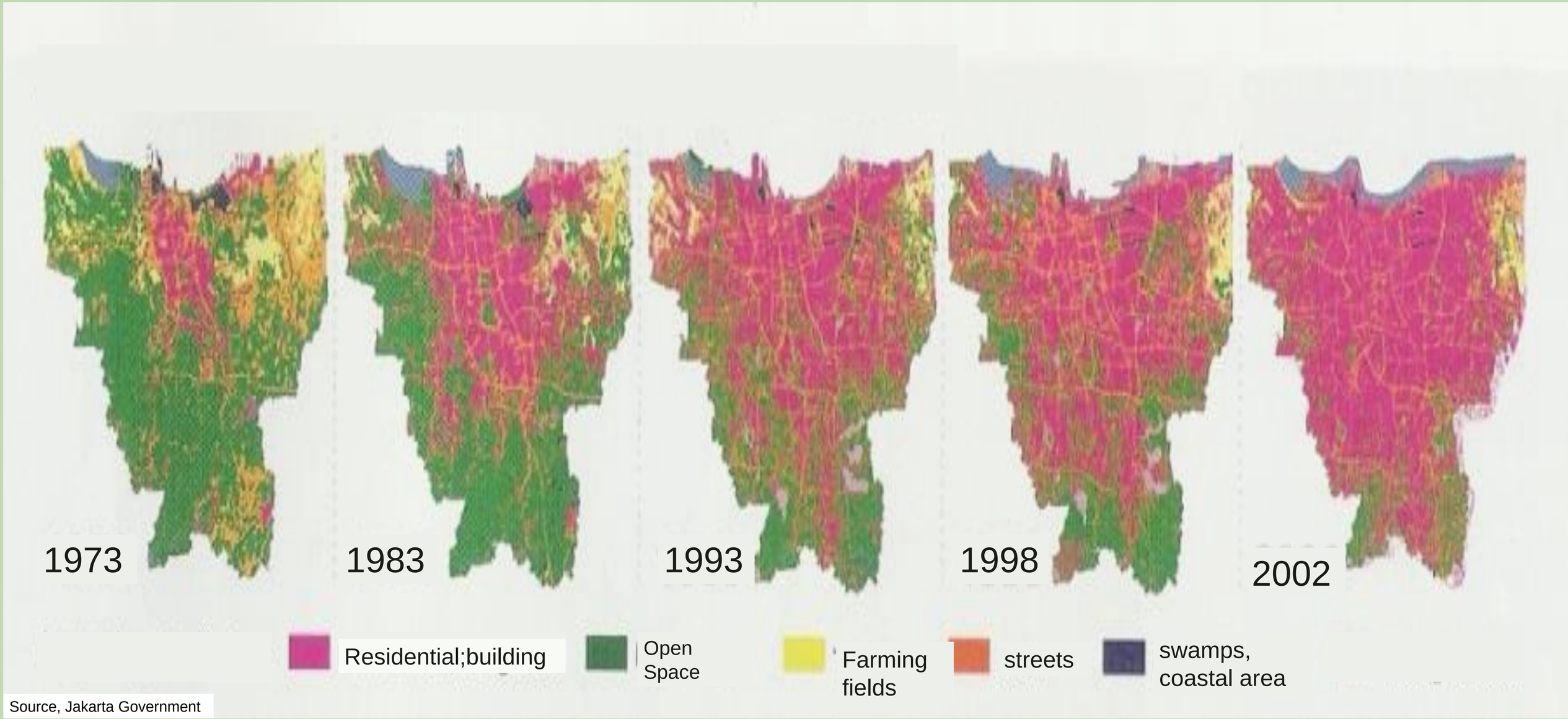
Pluit Pump Station	1989-2007	2007-2025	Total
Sea Level Rise	4-6 cm	4-6cm	8-12 cm
Land Subsidence	100-200 cm		200-400 cm

Source, Tempo 2013



Catchment Are Pluit Reservoir (2633 Ha)

Built-up Areas in Jakarta



Source, Jakarta Government

Challenges




Level of vulnerability of Jakarta City has increased due to the land subsidence, population density, waste, lack of drainage, decreasing of open space, squatters (370.000), traffic congestion, air pollution.




Estimated Economic Lost, due to :

- **Traffic congestion about 1.28 billion USD/year**
- **Unmanaged waste: 80 million USD/year.**
- **Flood hazards (2013): 3.0 billion USD.**

Adaptation Strategies

Integrated Flood Management and Urban Spatial Planning

a. Waterfront Urban Development
b. Multi-function Development

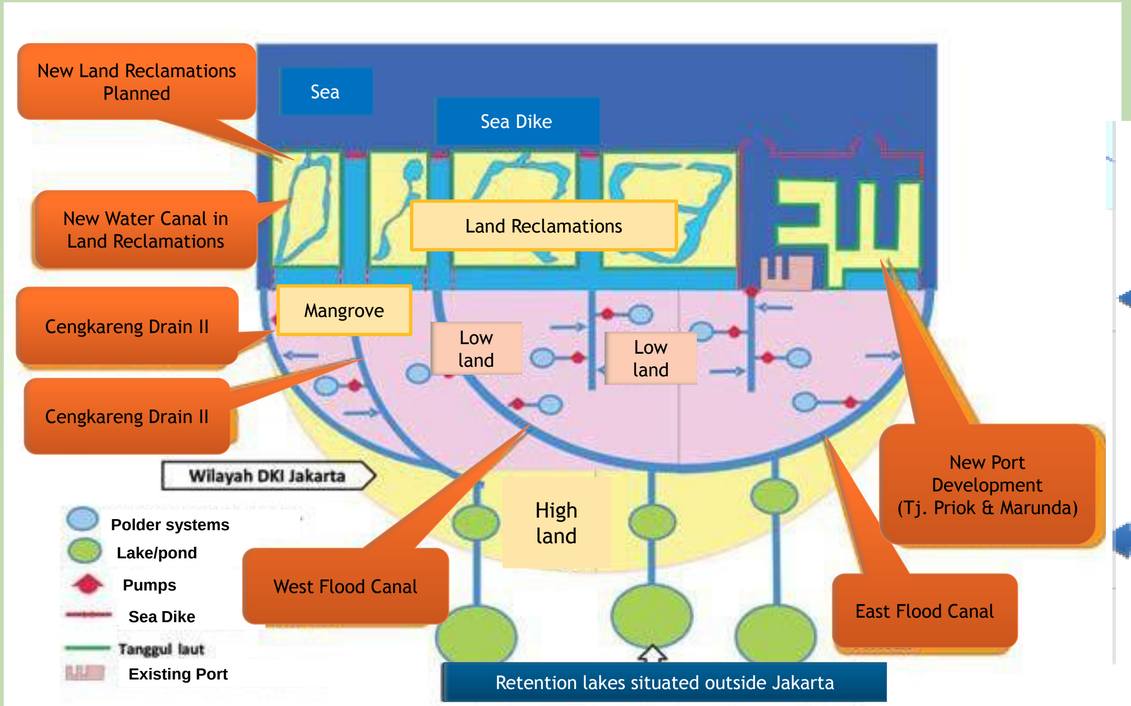
Integrated Planning of Green and Blue Open Space

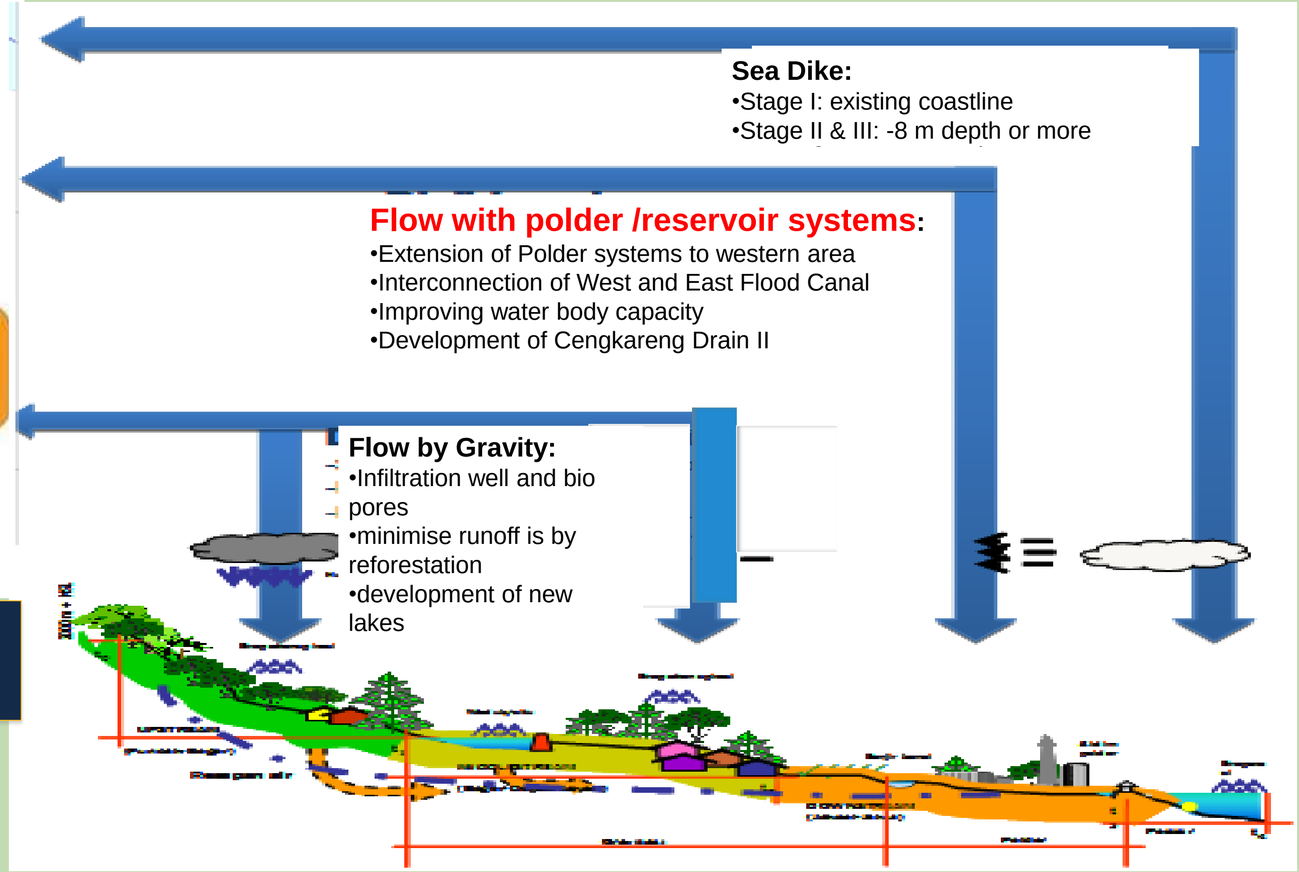
a. River Normalisation + Green Belt
b. Integrated Green and Blue Infrastructure

Integrated with the Port

a. increase the port capacity (rehabilitation (dredging the canals)and develop a new port
b. Improve an accessibility to the port (Develop a new lane toll road that connecting the industrial area to the port, Re-organize land use around the port districts)
c. Innovative logistics chain (Establish a JICT (Jakata International Cargo Terminal) a biggest cargo operator in Indonesia.

Jakarta Integrated Water Management for Adaptation and Resilience





ONE RIVER, ONE PLAN,ONE MANAGEMENT

Integrated Flood Management and Urban Spatial Planning

a. Waterfront Urban Development
b. Multi-function Development

Integrated Planning of Green and Blue Open Space

a. Polder Revitalization and River Normalisation + Green Belt
b. Integrated Green and Blue Infrastructure

Integrated port revitalization project (adaptation and mitigation strategies)

Short and Medium Term Adaptation

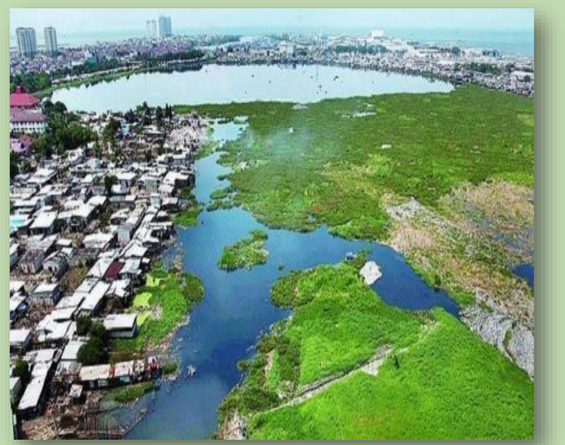
Ciliwung River Normalization

Goal: Restoring River Capacity and relocating people to proper housing

Challenge: Land Acquisition is a lengthy process, involuntary resettlement,

Opportunity: Safer living environment for people, and a more sustainable environment; Private Company's participation through CSR Program in provision of low-cost apartment

Pluit Reservoir Revitalisation



Goals: Enlarging capacity of reservoir and relocating squatters to proper social housing

Challenges: Reluctant to resettlement, Communication and negotiation strategy, Land Acquisition

Opportunities: Safer living environment for people, sustainable environment; multi-function development, PPP, community participation, and CSR in provision of low cost apartment

Ria Rio Lake, Park Space and Wetland Development

- **Goal**: Integrating high quality and diverse landscape development with flood control infrastructure
- **Challenges**: Land Acquisition is a lengthy process, involuntary resettlement
- **Opportunity**: Urban Redevelopment with Private sector involvement, a new landmark and tourist destination that combines cultural and natural experience with environmental sustainability

Mitigation Strategies

- Improvement public transportation/mass transit system
- Increasing energy efficiency and energy alternatives
- Eco-friendly Building (green building)- the city hall building retrofit
- Green and Blue infrastructure- Protected areas and conserve water resources, open space for ecological balance of the town green
- Sustainable waste management



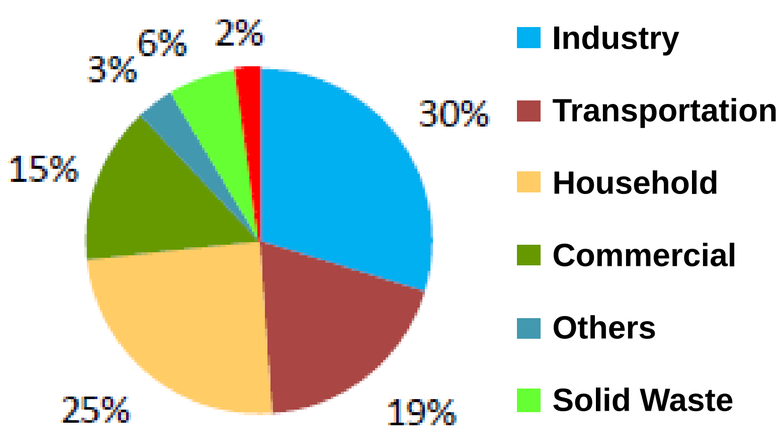




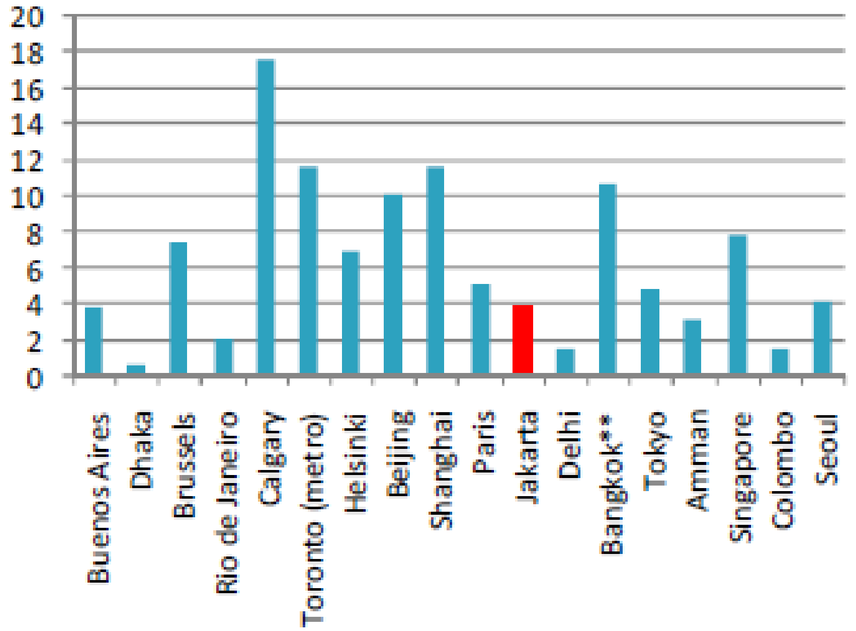
Road Map for Developing Low Carbon and Climate Resilience

1. Developing baseline as reference
2. Designing strategies
3. Developing action plans
4. Implementing actions with the improvement of policies, institution and governances
5. Measuring/monitoring, reporting and verifying the achievement
6. Improving strategies, policies, institutions and governance

2005 GHG Emission of DKI Jakarta compare to other Cities



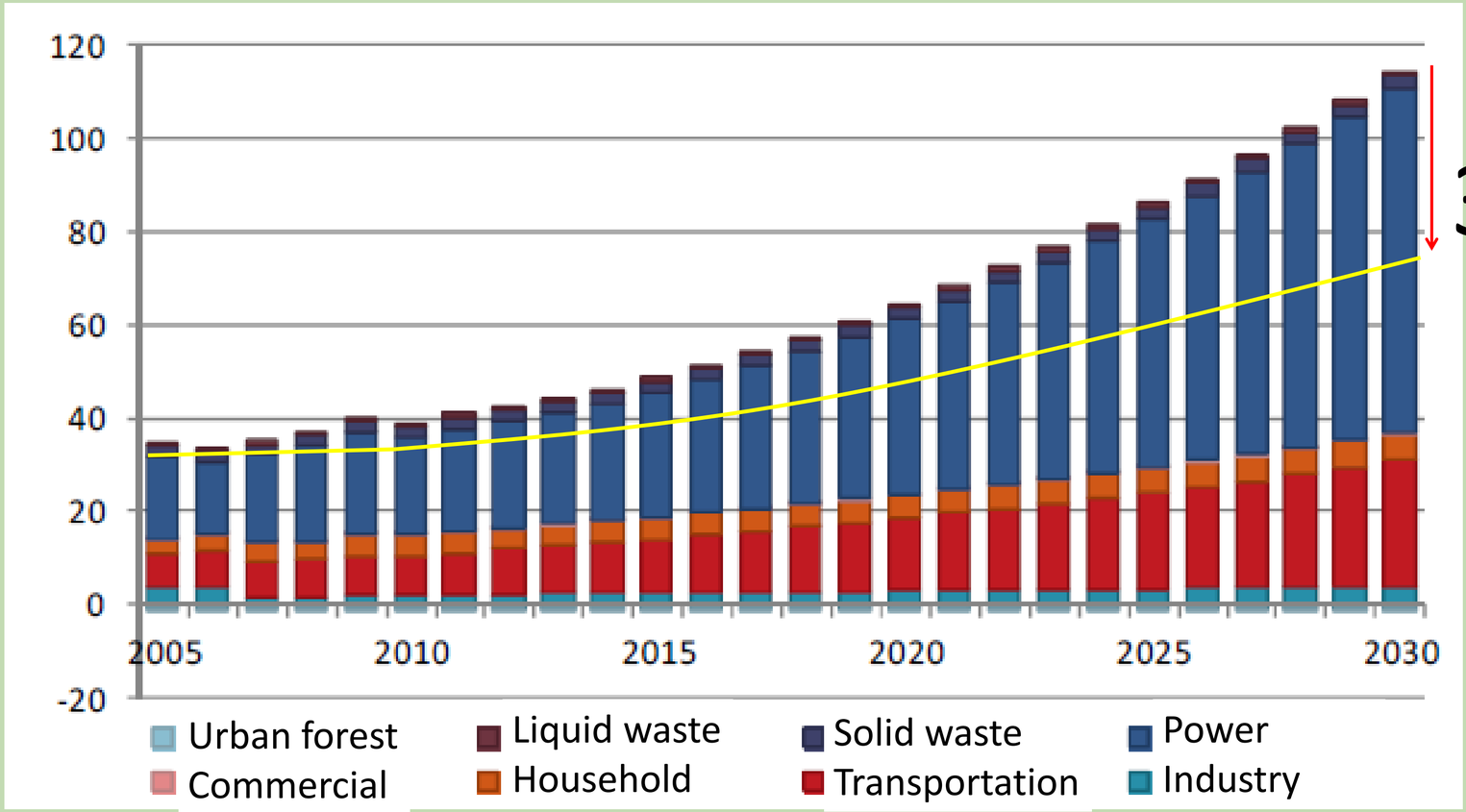
36.67 Million ton CO_2e



Source, BPLHD, Jakarta Government

Total emission of DKI Jakarta in 2005 without LULUCF was 36.67 Mt CO_2e, with per capita emission of about 3.84 tCO_2e or 25% above the national average

Projection of Emission to 2030



Source, BPLHD, Jakarta Government

Main sources of emission of DKI Jakarta are form transportation and power sector. Emission reduction target is 30% of the BAU emission by 2030

Conclusion

Towards Sustainable Green Growth Jakarta needs:

- Mitigation and adaptation strategies, to minimize the economic loss due to inefficiency and climate hazards

- Development of policies, strategies, action plan (road map) and implementation of green growth and climate resilience and more science works for developing scenarios/pathway toward green growth and resilient cities with the appropriate actions taking into account climate change – *putting current actions into long-term context*

- Financing policies to support implementation of integrated mitigation and adaptation program, *cross subsidy* and system for measuring the achievement which is measurable, reportable and verifiable.

- Social Engineering such Communication with the project affected people, voluntary resettlement (social engineering) and increasing the mechanism for synergizing across sectors and multi-stakeholder as well as **Networking and collaboration**

Networking and Collaboration

Developing a Network, Built a Relationship, Share a Best Practices, Capacity Building; and Collaborate for supporting:

Integrating International, National, Local and Other Stakeholders to Global Challenges and share for local actions

Creating local capability and capacity harmonizing local efforts to global standards to increase local awareness and ensuring the next generation is involved

Encouraging community participation, including the Involvement of politicians and political means to overcome resistance- positive support from the legislative and local citizen

Accurate financial arrangement and secured sources of funding by involvement of private sector and financial institution