

OPTIMAL CLIMATE ADAPTATION POLICIES UNDER UNCERTAINTY AND IRREVERSIBILITY FOR REDUCING THE RISK OF FLOODING

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OUTLINE

- Problem Definition
- Research Objectives
- Research Questions
- Methodological Design
- Schedule



PROBLEM DEFINITION

- Big economic losses from floods in Jakarta
- Flooding occurs due to the natural and human activities
 - High Precipitation, Sea level Rise
 - Population, Ground Water Extraction, Land Subsidence
- Adaptations have been done by Private and Public (Government)

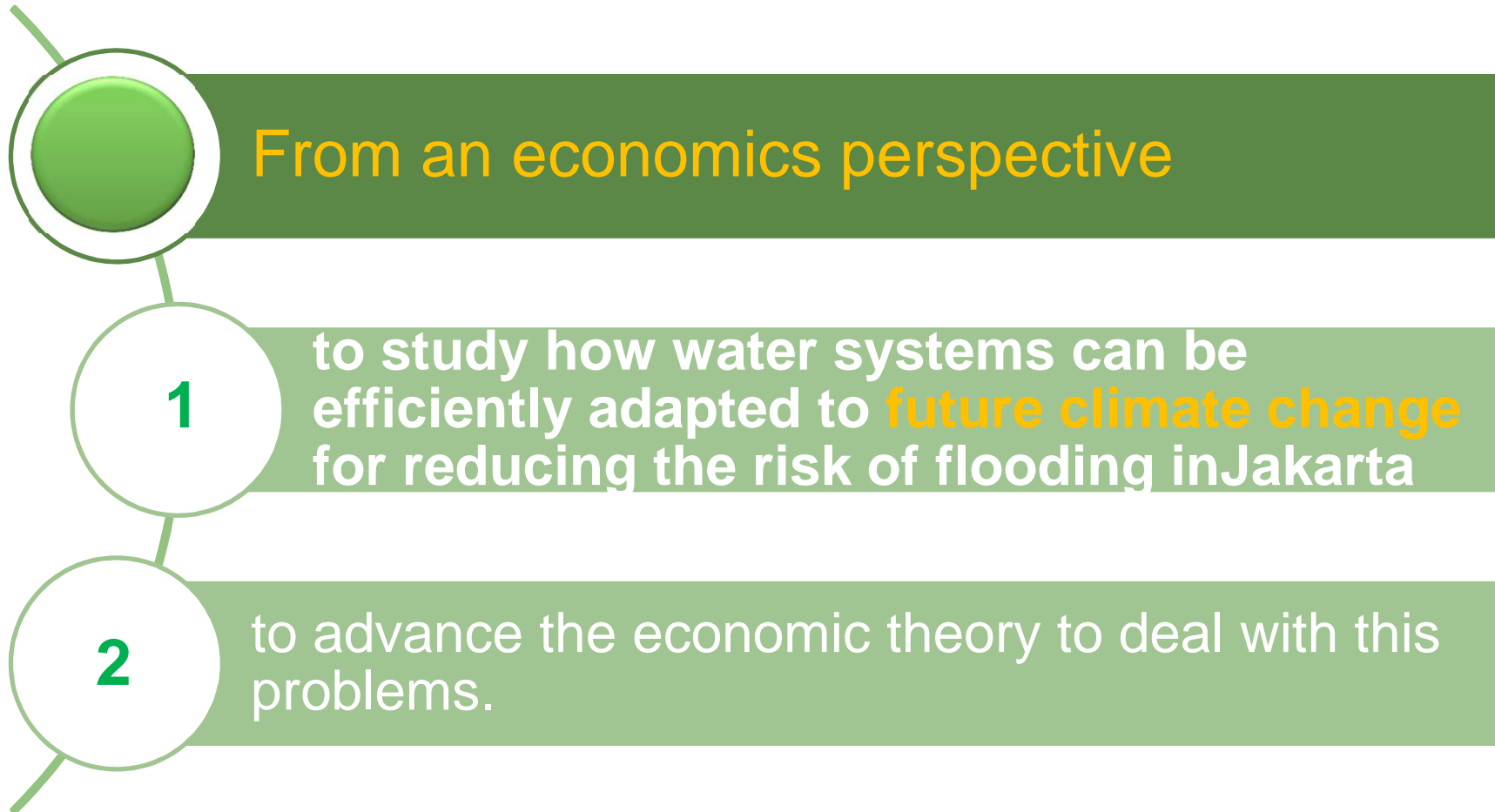


PROBLEM DEFINITION (CONT)

- Jakarta Government has a **future plan** for reducing floods, and it spends **a huge budget**
- Investment in Flood control programs face **uncertainty** and **irreversibility**
- There is limited information about **the best policy** from economic perspective
- Uncertainties and irreversibilities affect the best timing to adapt with future climate change
- Development planning in **Northern part of Jakarta**



RESEARCH OBJECTIVES



RESEARCH QUESTIONS

1

- What is the value of economic losses due to climate changes in Jakarta in 30-40 years ahead?

2

- What are the **most prioritized** policies in Jakarta from **stakeholder** perspective?

3

- Based on general assessment of adaptation options, what should be the priorities? (**upstream, middlestream, or downstream**)

4

- What are the cost and benefit of alternative adaptations in the presence of uncertainty, and what is **the most efficient** adaptation?



METHODOLOGICAL DESIGN

RQ-1

What is the value of economic losses due to climate changes in Jakarta in 30-40 years ahead?

- Assessment of direct and indirect economic losses combined with geographical information analysis of population and asset exposure

RQ-2

What are the most prioritized policies in Jakarta from stakeholder perspective?

- Multi-Criteria Analysis (MCA)
- Workshop with stakeholders



METHODOLOGICAL DESIGN (CONT)

RQ-3

Based on general assessment of adaptation options, what should be the priorities?

- Modelling approach

RQ-4

What are the cost and benefit of alternative adaptations in the presence of uncertainty, and what is the most effective adaptation?

- Advanced Cost Benefit Analysis (CBA) under uncertainty
- Cost Effectiveness Analysis (CEA)



SCHEDULE

Objectives	2012			2013			2012			2013			2014		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
valuing of economic losses			█	█											
prioritized policies						█	█								
General inventory assessment									█	█					
the most effective adaptation												█	█	█	



Thank You

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