Adapting economics to climate change adaptation

International Climate Change Adaptation Conference

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29 June 2010

Introduction: key question

- What is the best use of society's resources given projected climate change impacts?

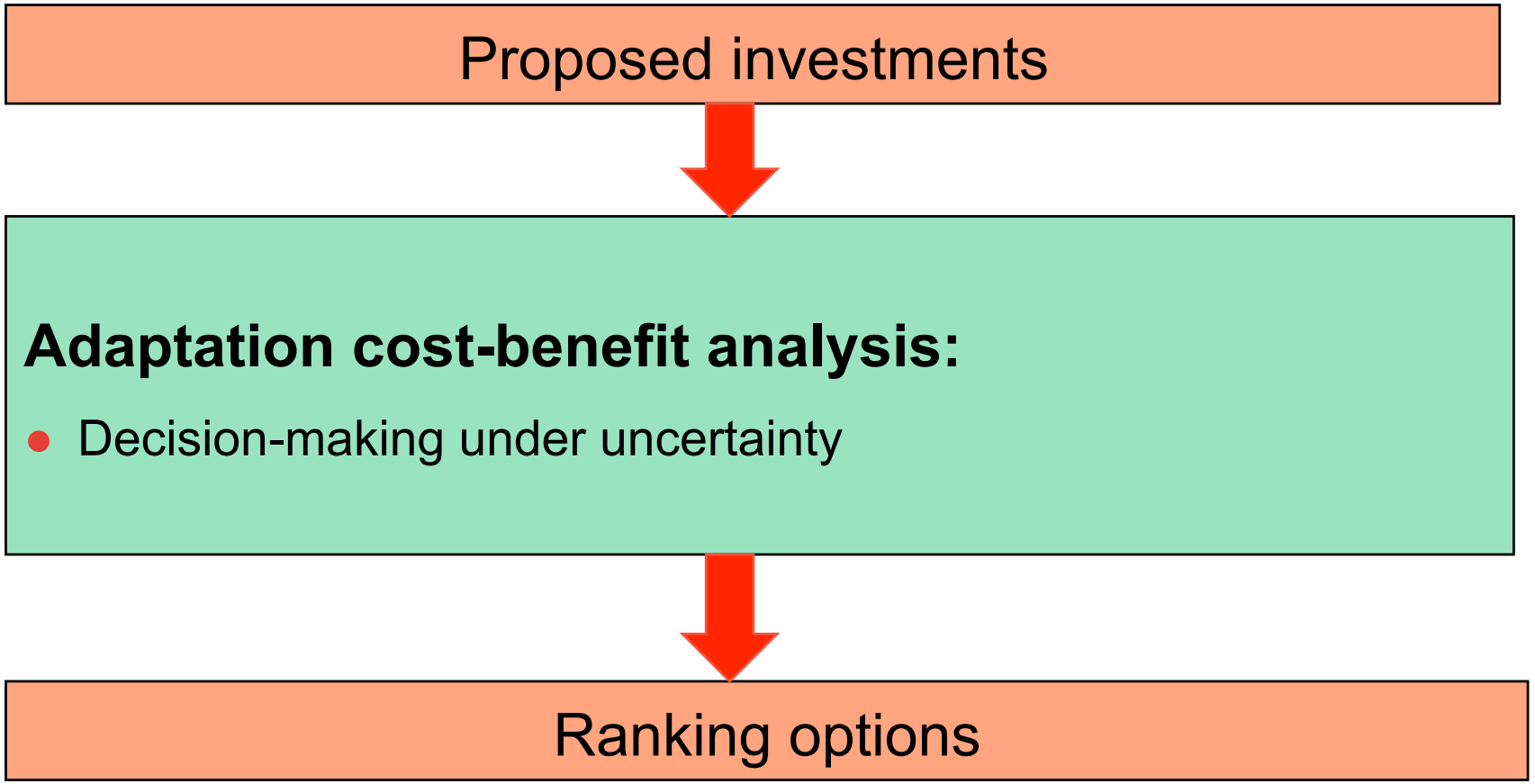
Efficiency

- At the margin, social costs and benefits of adaptation are equal

Equity

- Distributional consequences of impacts and adaptive measures

The standard framework



Drawbacks with the standard approach

Assumed view of adaptation

- Centralised decision maker
  - Influence of project appraisal literature
- "Hard" adaptation options (e.g. climate proofing infrastructure)
  - Easier to cost, especially in negotiating context (e.g. Forthcoming WB study on adaptation costs)

In reality adaptation involves

- Multiple agents interacting
  - Incentives for "autonomous" adaptation
  - Distorted market signals
- Importance of policy to coordinate adaptation activities
  - "Hard" options have incentive effects that affect adaptation decisions (especially where there are public good effects or externalities)

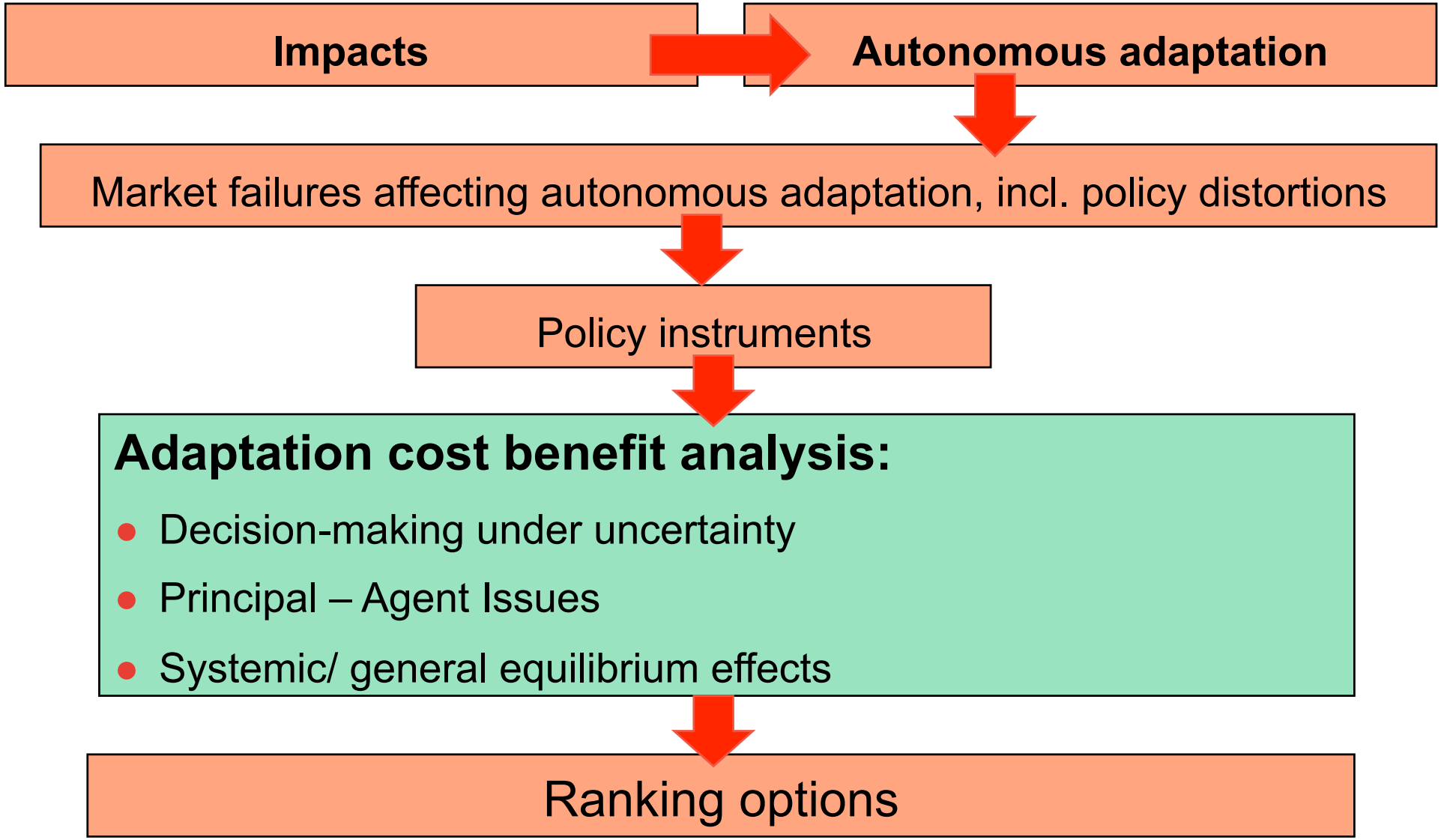
Example: Sea level rises and coastal policy

- **Retreat, Accommodate, Protect?**
  - Land values drive damages and thus optimal mix of policy
- What are **private** incentives for adaptation?
  - Pricing of risk – affects location decisions (e.g. “sea change” effects in Australia)
- Market failures
  - Incomplete information; missing markets for risk
  - Externalities, including agglomeration effects
  - **Non excludability and non rivalry (“public goods”) associated with “protect” options**
- Public good effects and “protect” options
  - Moral hazard effects (socially sub-optimal risky behaviour).
  - Potential damages are endogenous (c.f. flood protection in Australia)

Example: Sea level rises and coastal policy (cont)

- Policy framework required to address these “principal-agent” issues
  - Affects analysis of costs and benefits
  - Risks of skewing policy towards protection options, aggravated by institutional factors:
    - Sensitivity to “stranded asset arguments”
    - Inability for government to pre-commit against ex-post compensation
  - Importance of cost-sharing and cost-recovery mechanisms

Building adaptation policy from the bottom-up



Concluding observations

- Many of the suggested elements draw on existing good public policy practice
  - Impacts of climate change will exacerbate impacts of existing market failures and policy-induced distortions
  - Correcting these distortions can represent “no-regrets” options
- Implementation will stretch existing analytical techniques, e.g.
  - Modelling agent responses to incentives under incomplete information
  - Bounded rationality and institutional constraints
- Equity/ distributional effects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