Climate Risk Management For A Resilient Asia-pacific

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Climate Risk Management in Planning and Investment Projects
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Outline

- **Why** managing climate risks
- **What** is climate risk management
- **How** to manage climate risks
- ADB Experience and Initial Lessons

- Structure of the Training

Why Managing Climate Risks

- Climate variability and change are a threat to development goals
  - Greater frequency/intensity of extreme weather events
  - Changes to average temperature
  - Changes to precipitation patterns
  - Sea level rise
- Assumptions derived from historical experience may no longer be a reliable basis for evaluating near-term risks
- Climate change can result in economic losses
  - as high as 9% in South Asia by 2100 (assuming a business as usual scenario)

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Multiplier Effect of Weather Events on Rice

- Effect of 2008 weather events[1]
  - Lower Asian rice output due to an El Nino prompted India to restrict exports
  - Global prices sky-rocketed and caused panic measures in importers countries
- Effect of 2016 weather events
  - Droughts brought on by the El Nino affect production in India, Pakistan, Thailand and Vietnam
- Looking ahead[2]
  - Rice yield of up to 15% by 2050
  - Rice prices up to 37%
  - Decline in the improvement in child malnourishment levels gained over the last decades

[1]Source: PwC analysis, http://www.pwc.com/gx/en/governance-risk-compliance-consulting-services/resilience/publications/business-not-as-usual.jhtml

[2]Source: IFPRI. 2009. Climate Change: Impact on Agriculture and Costs of Adaptation

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What is Climate Risk Management

- “Climate risk management is a process for incorporating knowledge and information about climate-related events, trends, forecasts and projections into decision making to increase or maintain benefits and reduce potential harm or losses. It is a multidisciplinary activity that calls for an integrated consideration of socioeconomic and environmental issues.”

Source: Editorial, Climate Risk Management 1 (2014) 1–4

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Climate Risk Management

- Climate risk management is an approach to identify, assess and respond to climate risks
- Managing climate risks aims to ensure that intended outcomes of strategies, policies and investments are achieved despite the threats posed by a changing climate and the uncertainties associated with it
- Managing climate risks is a way of reducing the chances of making the wrong decisions (no- or mal-adaptation), e.g.:
  - Dependency on climate sensitive resources
  - Development in vulnerable coastal areas

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No longer ‘why’ but ‘HOW’

- Individuals, governments, businesses and decision-makers are no strangers to dealing with risks
- Decision-making always requires integrated risk management
  - Financial, social, environmental, regulatory, reputational, political
- There are several tools and approaches
  - Risk analysis
  - Decision analysis

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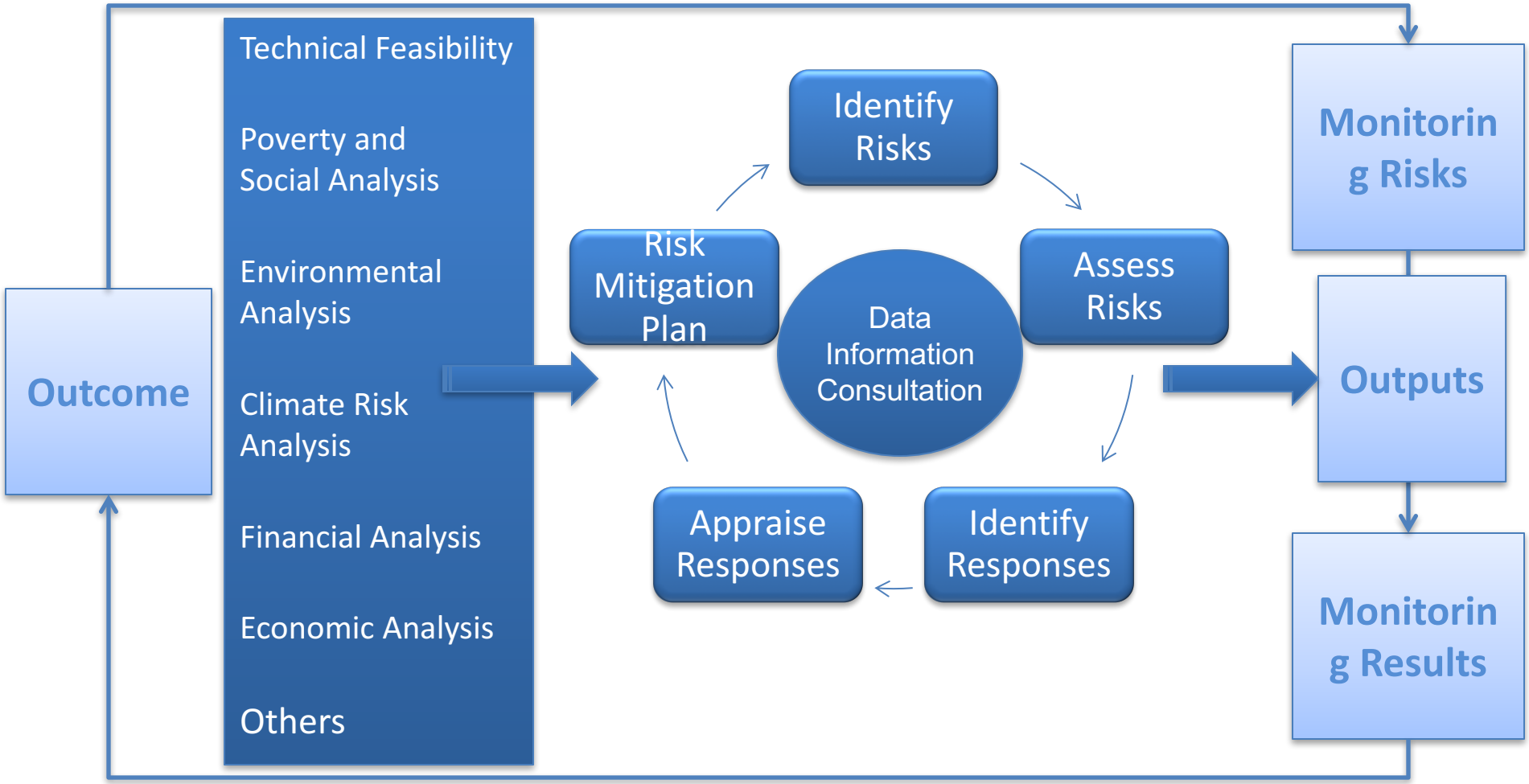
Iterative Risk Analysis for Decision Making



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Different Levels of Risk Analysis

- National planning process
  - National development strategies
  - Poverty reduction strategies
  - Sector plans
- Sub-national development plans
  - Provincial plans
  - Municipalities
  - Community level plans
- Investment projects
  - Projects aimed at addressing climate vulnerabilities
  - Projects with broader development objectives

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The Role of National Institutions

- National Institutions
  - Ministries
  - Hydrometeorological agencies
  - Coordination mechanisms
- Local governments
- Communities
- NGOs
- Private sector
- International institutions

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Main Elements of a Climate Risk Management Framework

- Climate risk screening
  - Filters out activities that are not at risks
  - Risks considered are those resulting from changes in temperature, precipitation, sea level rise, wind speed, solar radiation, and resulting hazards (droughts, water, flooding, landslide, tropical storms, wildfire, permafrost, snow loading, etc.)
  - A multitude of tools (see slides on reference)
- Climate change risk and vulnerability assessment
  - Aimed at quantifying risks
  - Requires analysis of risks resulting from current climate variability and projected climate change
- Adaptation planning
  - Technical and economic evaluation of adaptation options
  - Identification of adaptation options
- Monitoring and reporting

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Some Considerations on Climate Risk Assessment

- Scope and rigor of the climate risk and vulnerability assessment may vary, no “one size fits all” approach
  - expert opinion, desk studies using published literature on regional, sectoral climate risks, detailed model-based study supported by climate projections data for complex or high-risk projects
- Detailed impact modelling (e.g., hydrologic simulation models and crop models) may be required
- Decisions on approach should be guided by nature, complexity and scale of the activity and nature and magnitude of risks
- Cost can vary significantly ($30,000 - $200,000)
- Climate risk management is key to deal with uncertainties associated with future climate change

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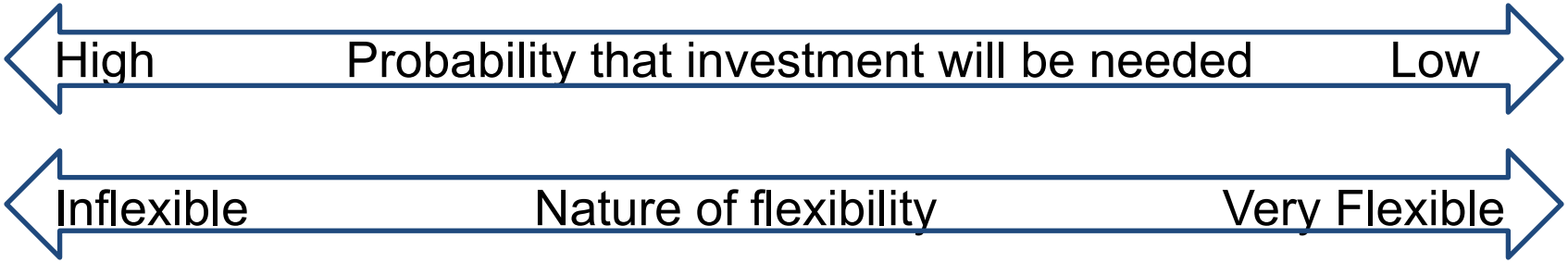
Some Considerations on Adaptation Decisions

Type 1: Invest Now	Type 2: Be ready and invest later if needed	Type 3: Do nothing and invest later if needed

Important determinants



- It is not always necessary to act now, but it is important to assess now!

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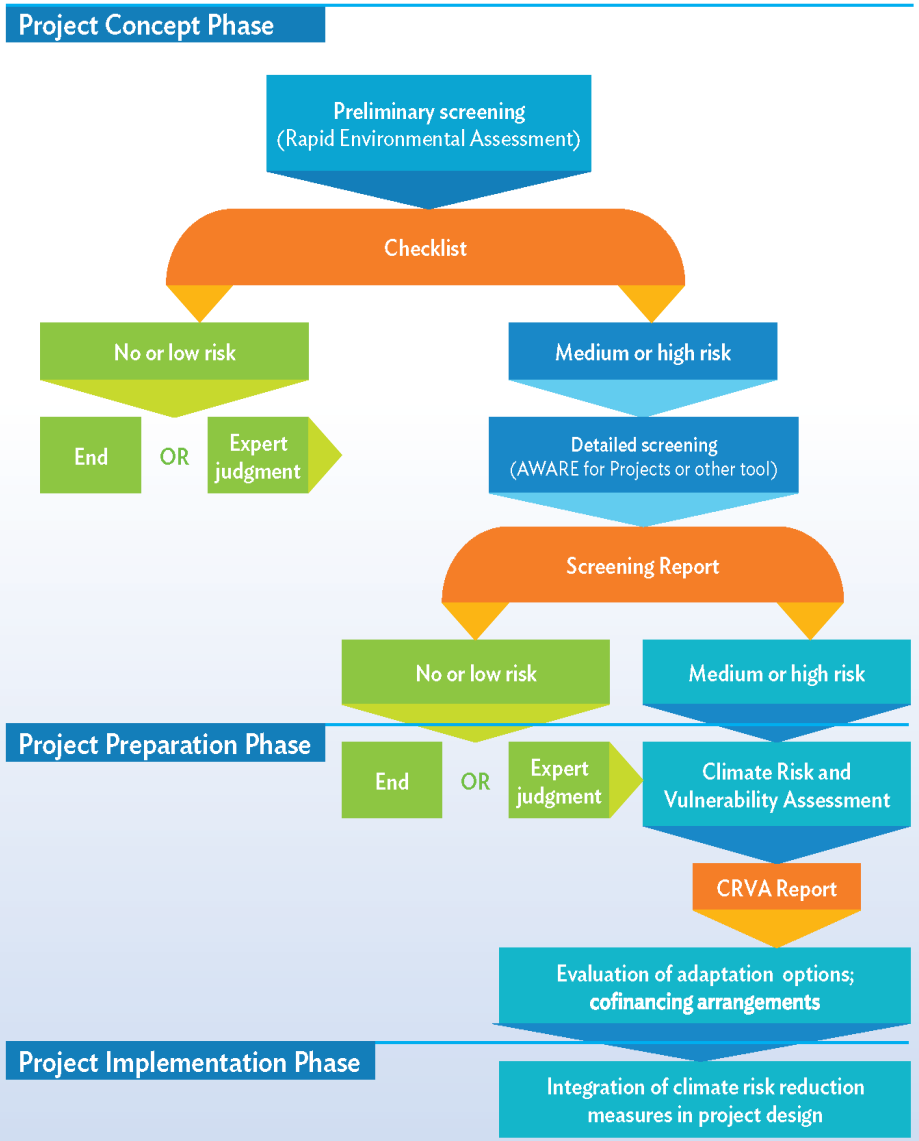
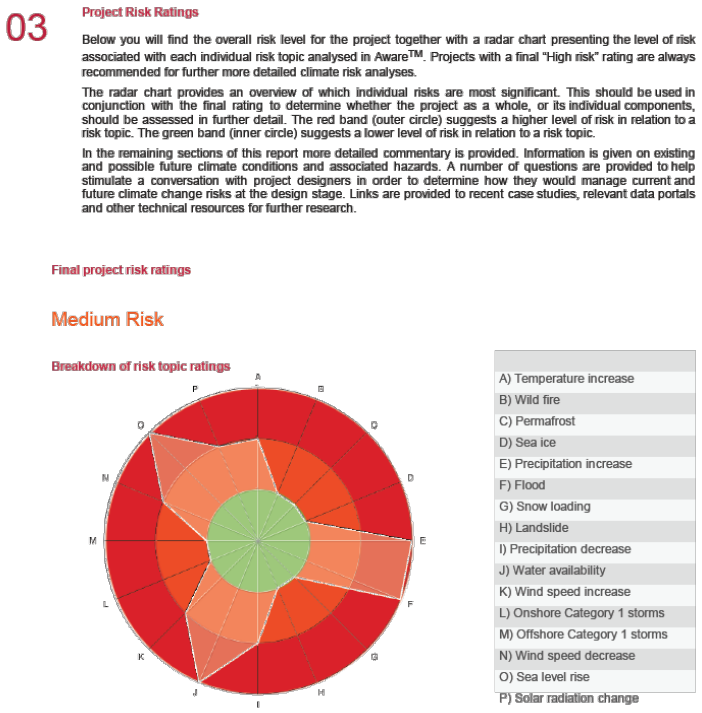
ADB Climate Risks Management Framework

- Climate risk management as one business process:
  - **Climate risk screening** at the concept development stage
  - **Climate risk and vulnerability assessment** in the preparation of projects at risk
  - **Technical and economic evaluation** of adaptation options
  - **Monitoring and reporting** of climate risk ranking and adaptation spending



AWARE for Projects

- Systematic, consistent web-based tool for climate risk screening projects
- Uses data from 16 general circulation models, and several databases on extreme events
- Combines exposure data and sensitivity information for 16 areas of risks to assess risk level
- Provides output report with:
  - Links to more detailed source data
  - Summary notes on model agreement, uncertainty, critical thresholds and robust decision making
  - Further reading guidance



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Project Risk Ratings

Below you will find the overall risk level for the project together with a radar chart presenting the level of risk associated with each individual risk topic analysed in Aware™. Projects with a final "High risk" rating are always recommended for further more detailed climate risk analyses.

The radar chart provides an overview of which individual risks are most significant. This should be used in conjunction with the final rating to determine whether the project as a whole, or its individual components, should be assessed in further detail. The red band (outer circle) suggests a higher level of risk in relation to a risk topic. The green band (inner circle) suggests a lower level of risk in relation to a risk topic.

In the remaining sections of this report more detailed commentary is provided. Information is given on existing and possible future climate conditions and associated hazards. A number of questions are provided to help stimulate a conversation with project designers in order to determine how they would manage current and future climate change risks at the design stage. Links are provided to recent case studies, relevant data portals and other technical resources for further research.

Final project risk ratings

Medium Risk

Breakdown of risk topic ratings

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Resources for Climate Risk Management

- Technical experts to support climate risk screening and assessment
- Financial resources to meet the cost of
  - Climate risk and vulnerability assessments
  - Adaptation of project at risk
  - Strengthening capacity and institutions
  - Developing knowledge and document experience
- Tools and guidance material for consistent and systematic screening and assessment
  - Online resources https://www.climatesmartplanning.org
  - ADB technical reference material available at http://www.adb.org/publications/climate-risk-management-adb-projects

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Initial Lessons from ADB Experience

- Risks need to be identified at the early stage of project development
- **Context of vulnerability** (what is the project vulnerable to and what are we trying to adapt to) is key
- Climate risk and vulnerability assessment can be undertaken within a reasonable timeframe and limited resources
- Adaptation is not cost neutral but may not always expensive
- Adaptation is context specific – no ‘standard cost’
- A large menu of engineering and non-engineering adaptation options are available

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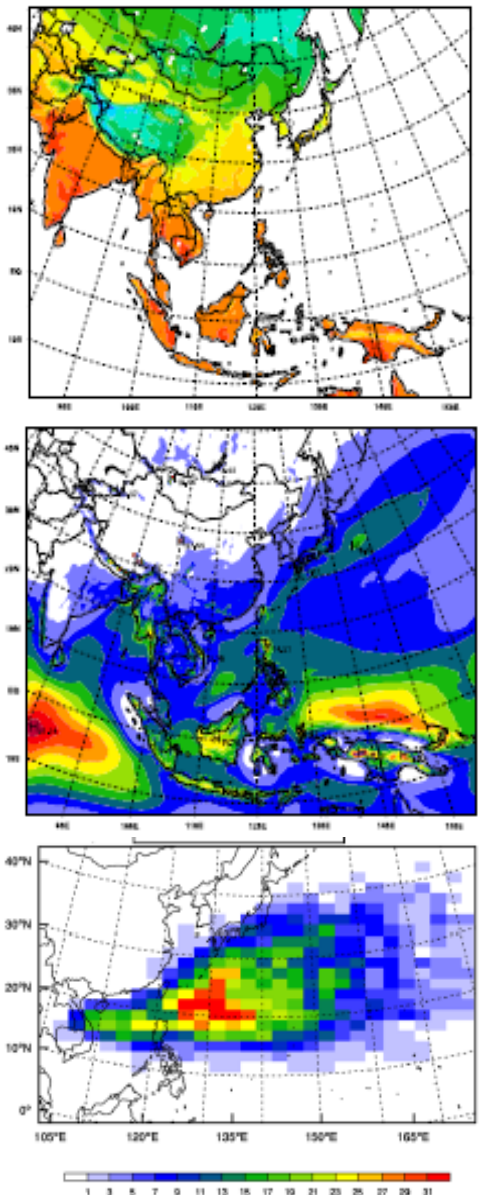
The Importance of Knowledge, Capacity & Partnership

- ***Local knowledge*** provides insight in experienced risks, perceived priorities, management approaches and responses that have been tested for long periods of time
- ***Climate Information and High Resolution Climate Projections*** are the evidence base required to support risk and vulnerability assessments and inform adaptation planning
- ***Institutions*** may need to develop new technical skills and decisions-making support processes to anticipate and manage climate risks
- **Partnership** is crucial to mobilize resources, leverage knowledge and disseminate best practice



Structure of the Workshop

- Day 1
  - The use of evidence and information, uncertainties
  - Vulnerability assessment, adaptation planning and economic analysis
- Day 2
  - Case studies
  - Interactive session
- Day 3
  - Climate Change and Disaster Risk Management
  - Finance – please volunteer to share your experience with climate finance
  - Panel discussion
  - Evaluation Forms

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Your active participation is required throughout the training

- What is your experience in climate risk management?
- Are you familiar with screening tools?
- Do you use climate information in your work activities?
- Do you use sector impact assessment in your work activities
- How do you handle uncertainties about future climate?
- How do you appraise different adaptation options?

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Some References

- Climate risk screening tools
  - https://www.climatesmartplanning.org
  - https://www.iisd.org/cristaltool/
  - http://www.fs.fed.us/psw/publications/documents/psw_rp263/psw_rp263.pdf
  - http://preview.grid.unep.ch/
  - https://climatescreeningtools.worldbank.org/
- Climate risk management
  - http://www.sciencedirect.com/science/journal/22120963
- Climate risk and vulnerability assessment
  - http://www.adb.org/publications/climate-risk-management-adb-projects

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