



# CLIMATE PROOFING ADB INVESTMENT IN THE TRANSPORT SECTOR INITIAL EXPERIENCE

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## ADB TRANSPORT

### CROSS-CUTTING KNOWLEDGE INITIATIVE:

Transport Sector Group  
Environment Thematic Group  
and  
RSES Climate Change Adaptation  
Team



# Aim and Objectives

## **Aim:**

Review ADB transport operations approaches to and experience of climate risk management

## **Objectives:**

1. Document experience
2. Review progress
3. Strengthen future efforts

# Format

**Section 1:** Climate Risk Management in ADB

**Section 2:** Experience with Climate Risk and Vulnerability Assessment (CRVA) in Transport Projects - case studies

**Section 3:** Experience and Opportunities

# Section 1 : Climate Risk Management in ADB

## Flowchart for Assessing Climate Risk of Projects

### Project Concept Phase

Preliminary screening  
(Rapid Environmental Assessment)

Checklist

No or low risk

End

OR

Expert  
judgment

Medium or high risk

Detailed screening  
(AWARE for Projects or other tool)

Screening Report

No or low risk

End

OR

Expert  
judgment

Medium or high risk

Climate Risk and  
Vulnerability Assessment

CRVA Report

Evaluation of adaptation options;  
cofinancing arrangements

### Project Implementation Phase

Integration of climate risk reduction  
measures in project design

## Section 2 – 11 Case Studies

Subsector	Case Studies
Main Roads & Bridges	<b>Bhutan:</b> SASEC Road Connectivity Project <b>Papua New Guinea:</b> Bridge Replacement for Improved Rural Access Project <b>Uzbekistan:</b> CAREC Corridor 2 Road Investment Program <b>Viet Nam:</b> Central Mekong Delta Region Connectivity Project
Remote Rural Roads	<b>Cambodia:</b> Rural Roads Improvement Project <b>PRC:</b> Inner Mongolia Road Development Project <b>Solomon Islands:</b> Second Road Improvement Project <b>Timor-Leste:</b> Road Network Development Project
Urban	<b>Viet Nam:</b> Sustainable Urban Transport for Ho Chi Minh City Mass Rapid Transit Line 2
Waterways and Ports	<b>Cook Islands:</b> Avatiu Port Development Project <b>PRC:</b> Anhui Intermodal Sustainable Transport Project

CAREC: Central Asia Regional Economic Cooperation , PRC: People's Republic of China, SASEC: South Asia Subregional Economic Cooperation

# Case Study: Bhutan SASEC Road Connectivity Project



Increased number and capacity of cross drainage structure with use of larger box/slab culverts instead of smaller Hume pipes



# Case Study: Cambodia Rural Roads



Before



After

Engineering measures: elevating roads in areas which are increasingly flood-prone, and change in construction materials

# Case Study: Solomon Islands

Adapting to climate change in the Solomon Islands



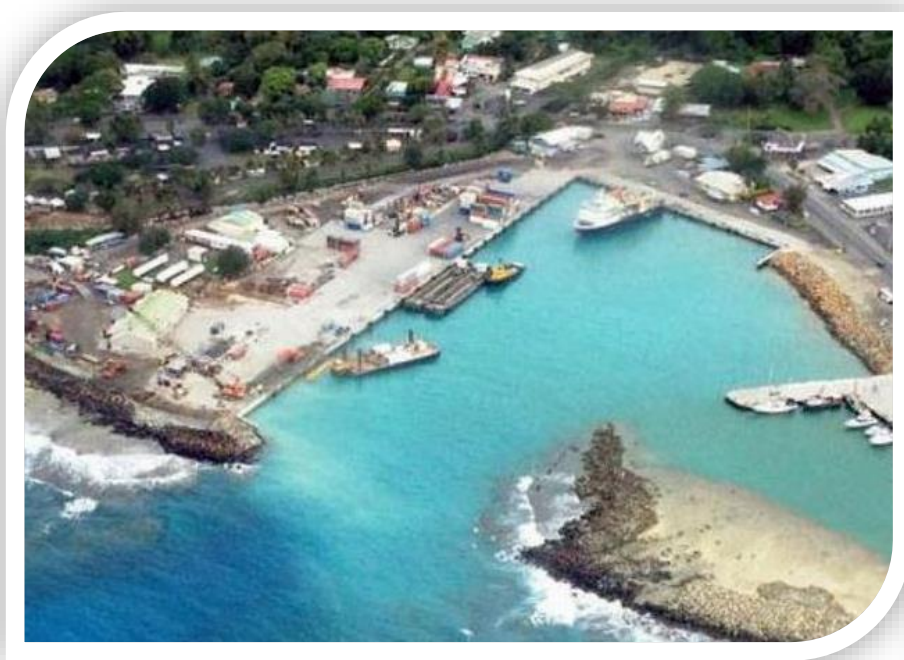
Traditional bridge design



Bridge constructed for higher flood and river debris load



# Case Studies



**Cook Islands' Upgraded Avatiu Port** – built to be ready for future wharf level raise by 0.5 m



**PRC: Inland Waterway**  
Rubber Dam to maintain water level (photo for illustrative purpose)

# Section 3: Experience and Opportunities

## Challenges

- Uncertainty
- Lack of high resolution climate projection data
- Lack of capacity ADB/DMCs
- Time and resources for complex studies
- Lack of quantification of economic benefits of adaptation

## Opportunities

- Regional data sharing initiatives
- ADB Climate Change Fund
- Training program on climate risk and vulnerability analyses for ADB and DMCs
- Green Climate Fund
- New guidelines on economic analysis of climate proofing

## In Summary

- Transport sector is making progress in mainstreaming climate adaptation
- Capacity and resource challenges to overcome
- New opportunities ahead
- Next steps...

