



# Climate Finance in Urban Sector

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# Presentation Outline

- Overview of Urban sector
- MDB approach and principles
- ADB Urban and Water Climate Finance Guidance note
- Mitigation and Adaptation finance tracking
- ADA Methodological Discussion
- Monitoring and reporting CF VS climate outcomes
- Climate Finance in Project DMF indicators
- Practical and illustrative ADB Urban examples
- CRM processes in ADB

# Urban Sector

- Priorities from ADB's Urban Sector Strategy (1999) and Urban Operational Plan 2012-2020.
- Integrated 3E approach: Livable Cities Vision (green growth) – balancing Env. Sustainability, Economic competitiveness and equity
- ADB will identify the key environmental issues of a city and prioritize infrastructure investments-integrated to achieve a green city.
- Support DMCs in integration of livability and resilience in Urban operations
- Urban infra: robust to climate/disaster shocks and stresses and build flexibility to adapt to changes.

# JOINT MDB APPROACH

- Application of the joint MDB approach in the urban sector, and relate this approach to ADB's internal approach and guidelines.
- Focus on Adaptation finance tracking
- Greater complexity and challenges
- Overall Urban and water contribute about 1 Billion to CF ADA target of 2 B/year.

# Joint MDB Approach-Climate Finance Tracking

## Key Principles

- **Scope** – Climate activities can be stand alone projects or components of project.
- **Conservativeness**-where data is unavailable, take conservative approach where under reporting rather than over reporting is preferable
- **Granularity**-Only climate activities that are to be disaggregated from non-climate activities are covered:
  - If disaggregation is not possible using project-specific data, more qualitative/experience/expert based assessment
  - to identify the proportion of the project that covers climate activities, consistent with the conservativeness principles.

# ADB Mitigation Finance Estimating Methodology

1. Identify ADB projects that fit the typology of eligible mitigation activities
2. Identify in those projects the mitigation sub-project or component funded by ADB assistance (loans, grants, equities, guarantees, ADB-administered climate funds).
3. Estimate the cost of the mitigation component funded by ADB (base cost, financial charges, contingencies, etc.)
  - **this is ADB's mitigation finance**

# Mitigation Finance Tracking

- Provide List of Eligible Urban Mitigation Activities:
- Wind or solar-driven pumping systems;
- Treatment of wastewater if not a compliance requirement (e.g. performance standard or safeguard) to reduce methane emissions **(if net emission reductions can be demonstrated)**;
- Waste management and waste-to-energy projects that demonstrably reduce methane emissions and/or generate energy (waste incineration, landfill gas capture/combustion);
- Demand-side energy efficiency projects;
- Waste-recycling projects that recover/reuse materials and waste as inputs into new products- **if net emission reductions can be demonstrated**;
- Retrofit of existing industrial & residential infrastructure to switch to cooling agent with lower GW potential.

## Mitigation Finance Tracking

- The financing for an activity included in the list above can be counted towards climate finance as the activity (and not the whole project) supports reduced GHG emissions.
- E.g. waste to energy component (climate finance) of SWM project
- E.g. modal shift to low-carbon modes of urban transport development.



# Adaptation Finance Tracking

## Joint MDB Approach: 3 Criteria to Qualify as “Adaptation”:

- **CV context:** statement of project’s risks from and vulnerability to climate change
- **Statement of purpose:** (RRP) addresses vulnerability to climate change impacts
- **Clear and direct link:** between climate vulnerability context and project activities

# Adaptation Finance Tracking

## Guiding Principles

- Context and location specific (wrt MIT)
- Ex ante classification
- Conservative approach
- Granular approach
- Additionality- “subproject” or “project element” level
- Beyond the BAU

# ADB Adaptation Finance Estimating Methodology

1. Identify ADB projects with eligible adaptation activities or components (using the 3 criteria-context, intent, linkage) funded by ADB assistance (loans, grants, equities, guarantees, ADB-administered climate funds)
2. Provide/develop specifications of the adaptation components (description, sizes or capacities, materials, etc.) detailed enough to enable cost estimation.
3. Estimate the cost of the adaptation components— **this is ADB's adaptation finance**

3 Step Criteria	Climate-Resilient Municipal Infrastructure
1. Climate Vulnerability Context	Project is located in a low-lying coastal area. Roads, bridges, water supply and sanitation systems are at risk of being damaged or rendered ineffective by more frequent and intense cyclones and storm surges.
2. Statement of Intent	Increase climate and disaster resilience in coastal towns through climate resilient infrastructure and capacity building support
3. Link Between Project Activities and Identified Climate Vulnerability	(i) “Climate-proofed” designs for infrastructure e.g. raising road level), raising base level of cyclone shelters, and water supply and sanitation, bigger drainage capacity, flood control systems; (ii) Non-structural interventions, such as urban planning, community awareness raising, flood monitoring and mapping’; (iii) Capacity-building support on preparing and responding to climate risks

# Estimating Adaptation Finance

- **Incremental cost approach:** Adaptation finance is the difference in cost of the project with and without the adaptation component.
- **Proportional approach:**
  - (i) Adaptation finance is proportional to the ratio of adaptation-related outputs/indicators to the total outputs/indicators of a project
  - (ii) Adaptation finance is taken percentage of adaptation finance in the total cost of similar projects or components implemented in similar situation.
- Strong justification or basis for choosing a specific percentage.
- **Incremental is the preferred approach**
- Use proportional approach only when you are sure, based on the 3 criteria, that there is adaptation component in the project but there is no clear description of it to enable cost estimation by incremental approach.

# Adaptation Activity-Urban Sector

- List of Eligible Urban Adaptation Activities:
- Type1: Incremental - those associated with climate-proofing & managing climate risks
- These account for most ADB-financed adaptation activities
- Type 2: Proportional- activities predicated solely on the need to address climate change risks.

# Counting Adaptation Finance

- Estimated Costs of Climate Proofing Investment Projects (type 1):
- Costs of improved solid water management and collection for increased risk of flooding;
- For FI loans or PBL: not possible to estimate incremental cost of climate proofing, a proportion of the loan on adaptation activities may be used to represent the incremental amount (type 2);
- E.g. climate resilient design standards in buildings;
- E.g. Supporting local government urban planning.
- E.g. Non Revenue Water-SCADA, DMA
- E.g. Water harvesting and IWRM

# Urban sector activities for CF

- Urban Infrastructure and Services: urban water supply, urban sewerage, urban sanitation, urban flood protection, urban solid waste management, urban hazardous waste management, urban housing, urban slum development,
- Other urban interventions: urban policy, strategy, institutional and capacity development, renovation and protection of cultural heritage, .
- Emphasize cross-sectoral links: e.g. urban services with water, energy, and transport sectors
- RE and EE technologies.



# PRC: Qinghai Haidong Urban-Rural Eco Development Project

- The adaptation measures that were considered necessary to address risks and vulnerabilities are:
- - Adjusting additional 0.1m increase in design flood height for the river rehabilitation component;
- - Adjusting additional 0.2m increase in design flood height for the river rehabilitation component;
- - Enlarging the storm water outlet size by 8% based on design storm discharge; and
- - Adjusting the runoff depth in solid waste disposal (landfill) design due to an expected increase in the 50-year return storm from 32mm to 34mm; and adjusting the 100-year storm from 39 mm to 42mm.
- Source: CRVA for TA 8846

# Monitoring and Reporting of CF vs. Climate outcomes

- ADB approach for monitoring and reporting climate finance (components) within eligible urban activities and investments.
- Monitoring and Reporting on CF -3 levels:
- Project level (Project officers)
- Sector level (Secretariat of Sector groups)
- Corporate level (SDCC/SPD)
- Need for Climate outcomes reporting based on climate and ADA indicators

# Example of Adaptation Indicators

## **VIE: Urban Environment and Climate Change Adaptation Project**

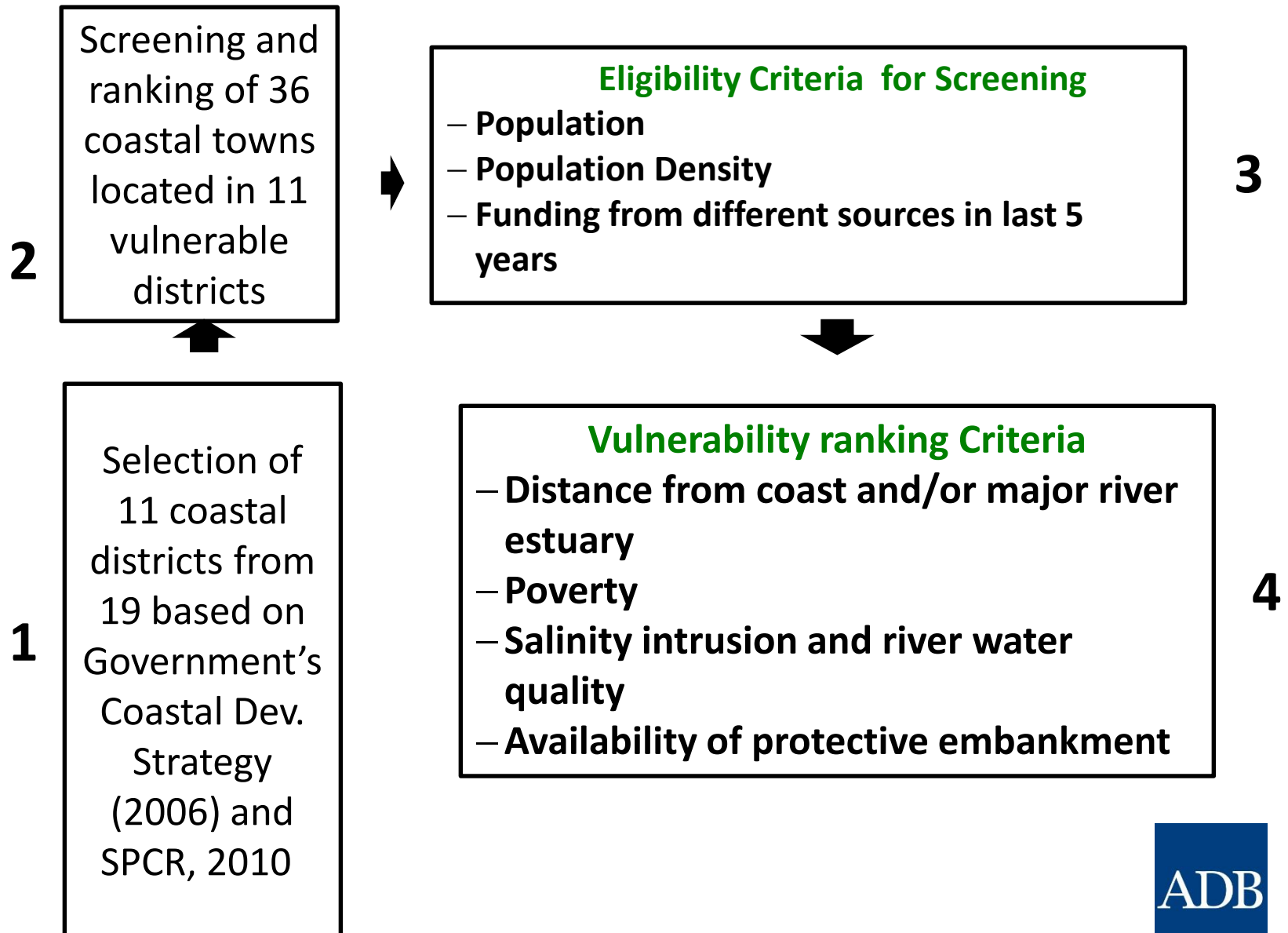
- Outcome: “People’s access to climate change resilient urban infrastructure in Dong Hoi and Hoi An improved”
- Selected output indicators: “Hoi An: Damages by coastal flooding reduced by \$2.0 million per year (2009–2013 average: \$2.5 million) benefiting 15,600 urban households “;
- “New urban area development plan is finalized incorporating climate change resilience consideration”;
- “Measures to protect coastal dune complex from erosion are implemented”
- (Source: PAM for 43237-013, DMF)

Subsector	Adaptation indicators
All/ cross-sectors	<ul style="list-style-type: none"> <li>• Reduction of climate related damages reduced by at least xx%</li> <li>• Newly built infrastructure integrate green/resilient design</li> <li>• No. community-led initiatives that improve climate resilience</li> <li>• Maintenance and emergency plans in cooperation with other involved institutions prepared</li> </ul>
Drainage	<ul style="list-style-type: none"> <li>• Incidence of flood reduced in xx% of coverage areas</li> <li>• New Drainage canals xx ha where (no drainage facilities)</li> </ul>
Flood management	<ul style="list-style-type: none"> <li>• Storage capacity of <math>xxm^3</math> reservoir is increased by <math>xx m^3</math></li> <li>• Flood embankments elevation increased from <math>xxm</math> to <math>xxm</math></li> <li>• Area of land protected from flood inundation inc. from <math>xx</math> to <math>xx</math></li> <li>• <math>xx</math> km porous paving constructed to reduce storm water runoff</li> <li>• Diameters of pipes increased by xx% to better cope with increased precipitation and extreme weather events</li> </ul>
Coastal flood management	<ul style="list-style-type: none"> <li>• Measures to protect coastal dune complex from erosion</li> <li>• <math>xx km^2</math> of mangrove forests have been restored</li> </ul>
Institutional development	<ul style="list-style-type: none"> <li>• CC Knowledge and skills of at least <math>xx</math> staff are strengthened</li> <li>• Early warning system for flood risk management designed, installed and implemented.</li> </ul>

# *Case study: Adaptation Finance Estimates*

- **Example of incremental cost of adaptation (Type1) – BAN: Coastal Towns Environmental Infrastructure Program**
- Only specific measures incorporated in the project design to address identified future climate risks. Cost of adaptation- \$46.6 million:
- \$36.75 million for civil works,
- \$1.15 million for equipment,
- \$3.46 million for institutional capacity building and awareness
- \$5.24 million for contingencies.
- Included increasing drainage capacity and raising levels for roads.
- ADB provided \$6.2 million of its own resources to meet the incremental cost of adaptation,- Adaptation finance in RRP.
- Other fund-Pilot Program from Climate Resilience of CIF
- Source: Project Climate Risk Assessment and Management Report, Climate Risk Management Responses within the Project (excerpt)

# Stage 1: CRVA Screening and Selection of Towns



# Estimating Incremental Costs of Adaptation

- Engineers and climate experts worked closely together on engineering designs considering climate change impacts.
- Depending on the type of infrastructure, the incremental adaptation costs ranged from around 15%-30%.
- Climate proofing of infrastructure vs. building resilience of poor and vulnerable

## VII-B. BAN: Coastal Towns Environmental Infrastructure Project (CTEIP)

ADB lending \$117M plus additional financing \$100M



**ADB  
Project**



Climate  
Change  
Screening



Climate  
Assessments

Criteria for Screening

- Distance from coast and/or major river estuary
- Salinity intrusion and river water quality
- Availability of protective embankment, canals and roads



**Step 1. Climate Scenarios** based on regional modelling e.g. general observed trends on in creased temperature and rainfall, sea level rise and changes cyclone occurrences.



**Step 2. Hydraulic Modelling** e.g. storm surges and tidal impacts for sizing of roads, drains, sewers.



**Step 3. Climate Proofing of Infrastructure** and additional cost of climate change adaptation measures.



**Step 4. Climate Change Options** in dimension of pipes and roads to address current and future rainfall scenarios.



## VII-C. BAN: Coastal Towns Environmental Infrastructure Project (CTEIP)



**URF  
Support**

Rapid Urban  
Climate Change  
Assessments  
(RUCCAs)

Climate Resilient  
Integrated Urban  
Plans (CRIUPs)

Actionable  
Priorities for  
Implementation  
of the CRIUPs  
(5 years)

Implementation of  
Infrastructure projects  
critical for  
strengthening Urban  
Resilience

**Step 1. Vulnerability Assessments** visualizing how towns and communities respond and cope to/with climate shocks and stresses, how the livelihoods of communities are affected.

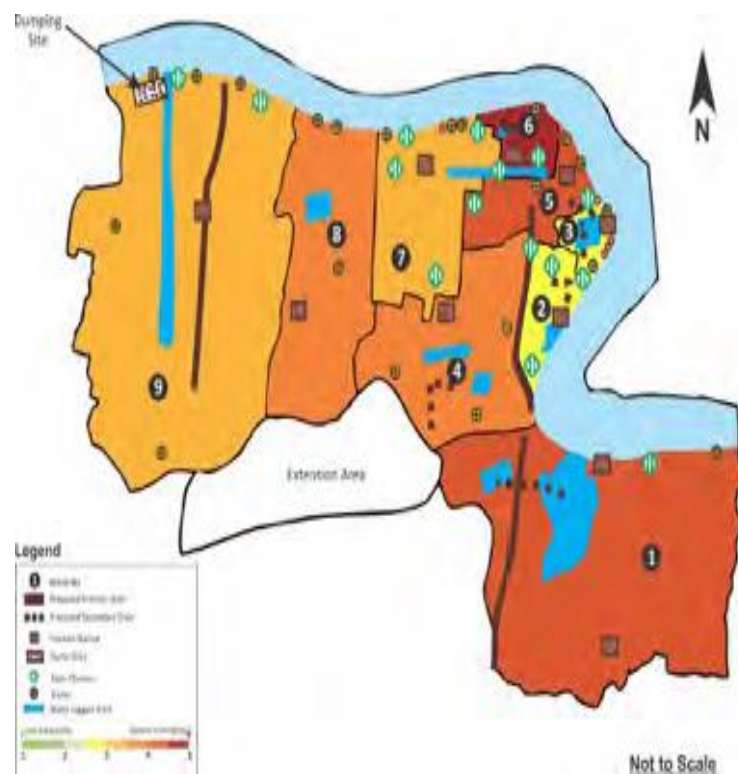
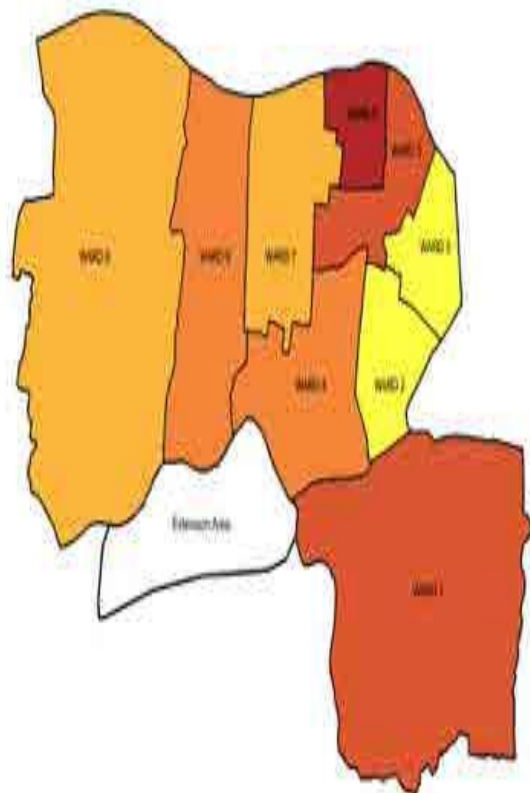
**Step 2. Sensitivity Assessments** overlay critical infrastructure on the vulnerability maps to assess deficiencies and climate impacts.

**Step 3. Identification of Infrastructure projects critical for strengthening Urban Resilience.**

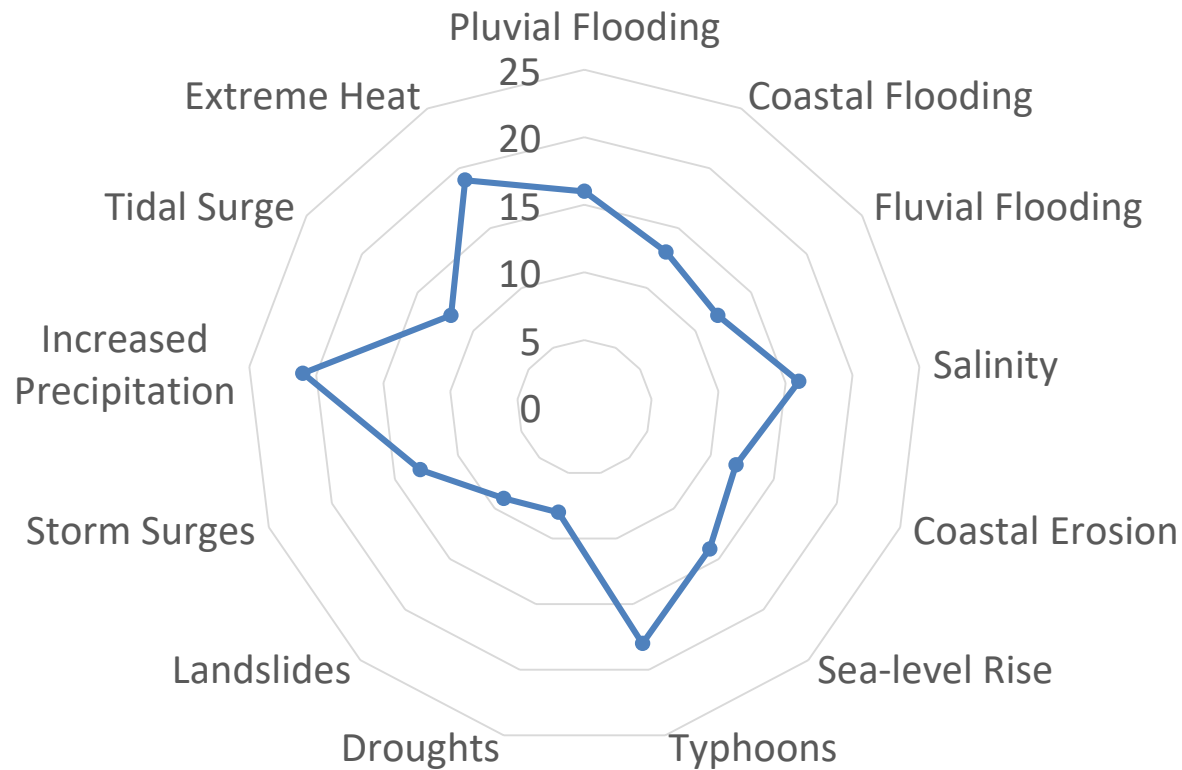
**Step 4. Implementation of Infrastructure projects critical for strengthening Urban Resilience.**

## VII-D. BAN: Coastal Towns Environmental Infrastructure Project (CTEIP)

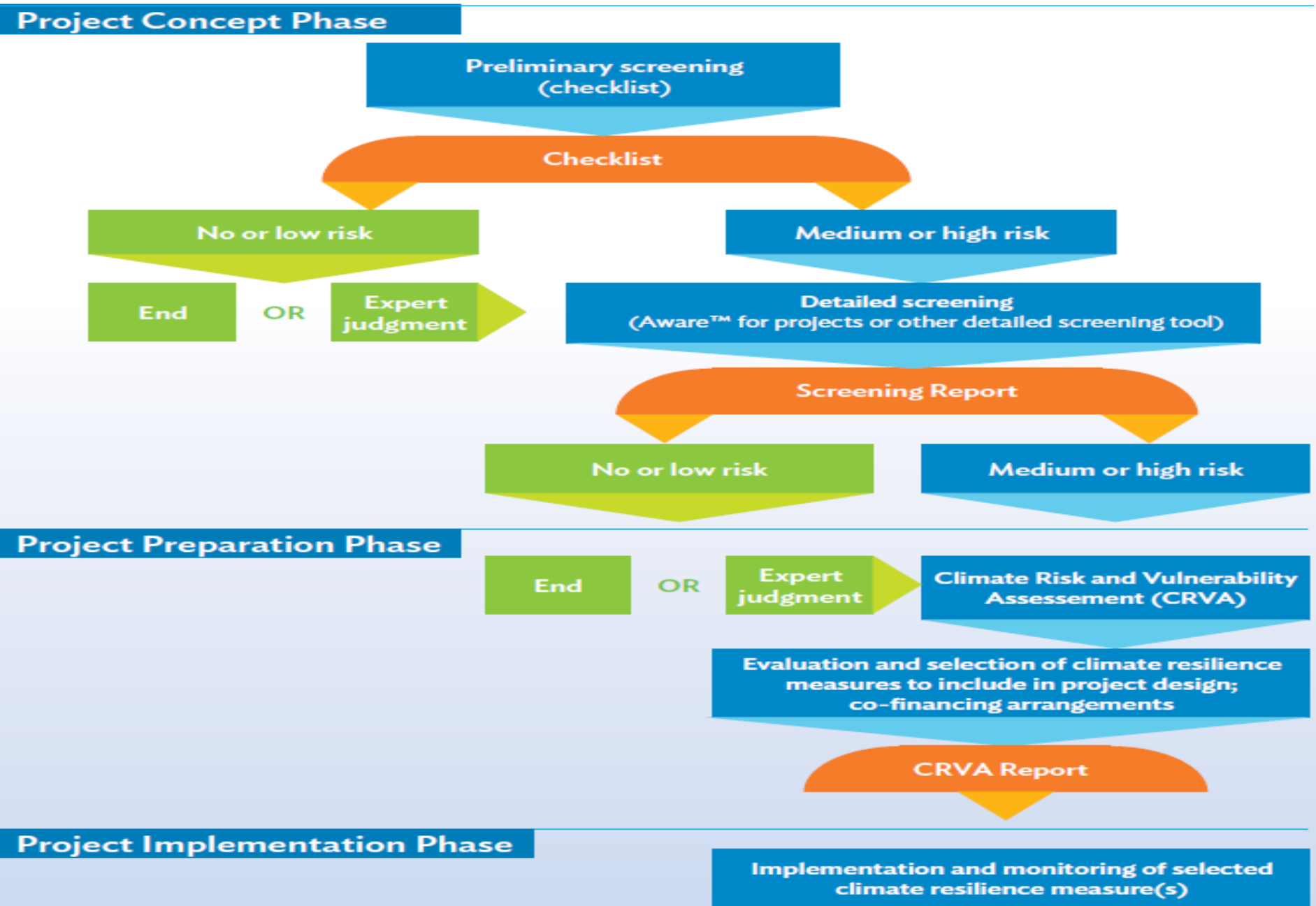
## Patuakhali Vulnerability Mapping



# Diverse Climate Risks Faced by UCCRTF Cities



# Flow Chart for Climate Risk Management of Investment Projects



# Summary and where do we go from here!

- Challenges in the ADA CF tracking and reporting
- Evidence based decision making
- Robust CRM processes upstream at CPS/COBP and concept level
- CRVA as basis to set the vulnerability context
- Need for Climate outcomes reporting based on Climate and ADA indicators

## Type 1: Decision Tree for Business as Usual (BAU) Projects

What level of CC risk was identified by the CC screening?

Project  
Concept  
Stage

low

medium

high

0%

Project  
Development  
Stage

Did incorporating the  
recommendations  
increase the project or  
output costs?

The CRVA is the basis to **set out the vulnerability context of the project** and to identify specific actions that can be taken to mitigate the location specific risks. The CRVA is the backbone of all climate adaptation finance accounting.

Yes, but  
Incremental  
costs was not  
calculated

Yes, and  
incremental  
cost has been  
calculated

If recommendations from the CRVA has been incorporated into the project design and the project is claiming adaption finance, there need to a **statement of intent to address climate vulnerability in the RRP** as well as a table in the annex of the PAM **articulating a clear and direct link between the climate vulnerability context and the specific project components** and the relevant percentage of each component that is being considered as climate adaptation finance.

5%

Incremental  
cost

Min. 2  
activities  
related to CCA

Min. 1 CCA  
output  
indicator

Example:  
increase in  
freeboard  
for irrigation  
canal

Example:  
land  
acquisition  
for new  
intake site  
for water  
supply plant

## Type 2: Decision Tree for Projects Predicated on Climate Chance Adaptation

Project  
Concept  
Stage

Project selected as a basis of a climate  
assessment

Project  
Development  
Stage

Would the output be required even without the expected impacts of climate change?

yes

Does the project have more  
than one output and linked  
indicator related to CCA?

no

25%

One output  
and 1  
indicator  
related to  
CCA

Examples:  
irrigation,  
rural roads,  
markets

yes

75%

At least two  
outputs and  
two indicators  
CCA outcomes  
and indicators

Examples:  
better  
management  
water  
resources

no

100%

CCA impact  
and only CCA  
outcomes  
and  
indicators

Examples:  
SCADA, DMA,  
retention wall,  
water  
harvesting