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IAdapt

Integrated Rural Urban Water Management for Climate Based Adaptations in Indian Cities

IAdapt Framework for Micro-Catchments

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The IAdapt Framework is a toolkit that supports local governments to develop a Catchment Management Plan (CMP) to plan for and manage water resources catering to both rural and urban areas within the catchment, taking into consideration the different uses of the resource and the climate risks to it. The framework has been developed under the project - Integrated Rural Urban Water Management for Climate Based Adaptations in Indian Cities – funded by International Development Research Centre, Canada by the lead partner ICLEI South Asia, with assistance from the other partners - Athena Infonomics, Indian Institute of Technology Madras and International Water Management Institute.

The framework is being tested in two regions of India – Solapur in Maharashtra and Vijayawada in Andhra Pradesh. The framework is targeted at local authorities, both rural and urban. It is a useful tool to:

1. Engage rural and urban stakeholders for participatory catchment management
2. Provide climate adaptive interventions for management of water resources impacting all urban and rural actors
3. Support water security by transitioning from traditional siloed approaches of water management to an 'Integrated Approach' and institutionalize climate change adaptation measures in water management

Water as a resource is not limited by geographical boundaries. Many times, a source of water for a city lies outside the city boundaries, often catering to more cities and villages. Climate risks in the region that impact water resources will therefore impact all the areas that are dependent on these water resources. As a result, any action on the water resource in the region needs to consider the resource use by all actors in the region. For climate adaptive water resource planning, it is therefore essential to have a broader catchment based outlook, that will consider the impacts of climate change on the water resources for all the areas that depend on it. A catchment based approach will also ensure that maladaptation is avoided as no city or village will be considered in isolation.

The IAdapt Framework



- RURBAN Platform: A Multi-stakeholder platform to bring together stakeholders

- Data acquisition and analysis from the micro-catchment level, regarding the socio-economic, environmental, governance aspects

- Climate scenario assessment, water resource integration scoring, systems assessment, risk assessment and vulnerability assessment

- Resilience interventions and their prioritization
- Decision Support Tool to relook at interventions in an Integrated approach

- Catchment Management Plan
- Implementation and Monitoring

PHASE 1: ENGAGEMENT



This phase includes formation of the Core Team and formation of the RURBAN platform and engaging with both.

1.1 Formation of Core Team

A core team at the rural and urban level, with a Nodal Officer, will be responsible for driving the framework and developing the CMP.

1.2 Formation of RURBAN Platform

A RURBAN platform will consist of representatives from the rural and urban local and provincial governments, to discuss the water related issues together and come up with locally adaptive solutions.

Outcome of Phase 1

- Identification of the nodal officer
- Formulation of the core team
- RURBAN platform formation



PHASE 2: BASELINE ASSESSMENT



This phase involves collection of data from the micro-catchment level, regarding the socio-economic, environmental, governance aspects. It will collect baseline situational information from the micro-catchment area. It will have generic information from the villages and the parts of the city included in the micro-catchment area.

2.1 Micro-Catchment Baseline Questionnaire

A baseline questionnaire to get micro-catchment level information on demographics, water resources, health, land, infrastructure, and governance.

Outcome of Phase 2

- Detailed baseline data for the catchment
- Weakness and Strengths of the catchment
- Prioritized issues



PHASE 3: CLIMATE VULNERABILITY OF WATER RESOURCES



This phase will help select the particular sector/issue which can be focused on for better integration by identifying different climate scenarios impacting fragile systems and conducting water balancing.

3.1 Climate Scenario Assessment

Collate and analyse climate data and generate climate exposure scenario or projections from secondary climate studies.

3.2 Water Balancing

Assess the demand-supply gap and reduce it without any additional water abstraction using IWRM principles.

3.3 Identification of Focus Sectors and Issues

Use Integration Assessment Matrix to assess existing status of integration of different water resources and consumption patterns in the micro-catchment to get the current situation of water balancing.

3.4 Fragile Systems Assessment

Analyse the identified fragile systems, in terms of flexibility and diversity, redundancy and safe failure to develop climate fragility statements based on the climate risks.

3.5 Risk Assessment of Climate Fragility Statements

The climate fragility of the systems is assessed in terms of their likelihood and consequence.

3.6 Vulnerability assessment

Vulnerable areas and actors to the climate risks are identified in terms of their capacity to respond, access to resources and access to information.

Outcome Phase 3

- Water Balance
- Climate scenarios
- Vulnerable sectors, areas and actors

PHASE 4: SOLUTIONS ASSESSMENT



In this phase, the Core Team will use the information and analysis from Phases 2 and 3 to develop a list of climate adaptive interventions for integrated water resource management. These interventions will be screened and prioritised, linked to existing city plans, and assembled into a Catchment Management Plan. This phase includes selection of resilience interventions and their prioritization.

4.1 Identification of interventions

Based on the climate fragility of the systems, the vulnerable areas and the populations impacted, climate adaptive interventions are identified for the micro-catchment.

4.2 Prioritisation of Interventions and Solutions

Selected interventions are assessed for their contribution to climate resilience in terms of redundancy, flexibility, responsiveness and access to information and their contribution to Integrated Water Resource Management (IWRM) considering all parts of the water cycle, various uses of water, local context, and benefits to stakeholders.

Outcome Phase 4

- List of solutions for catchment water resources
- Scoring and Prioritization of the solutions on the basis of resilience, IWRM principles
- Feasibility and impact assessment of the prioritized solutions
- Ratification at the RURBAN platform

PHASE 5: DEVELOPMENT OF CMP



This phase describes the structure of the Catchment Management Plan. The catchment management plan should be developed while keeping the overall fragility and vulnerability of the resources and the community. The plan will also consist of a monitoring and evaluation tool, for regular updation of the plan.

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