Work Package 3 – Climate Change Adaptation

Lead institute: The Energy and Resource Institute (TERI)

Other collaborating partners:

India: University of Kashmir, IGNOU, JNU, SKAUST

Pakistan: PMD, WAPDA

China: NCC, NUIST

Afghanistan

Specific Objectives

- To analyse water-energy-food interconnections across different ecosystems (mountains, humid, arid, coastal and rural, urban) in different sub-basins of Indus basin, their competitive stress with other sectors of the regional economy, and project their interdependence into future for near and long term developmental scenarios.
- To create robust understanding of potential approaches and practices to harmonize the stress among water, energy and food requirements in the basin, develop an Integrated River Basin Management Plan for Indus basin, and provide guidance for informed decision making at different domains to achieve specific SDGs.

Approach

To achieve the desired objectives, work under the Work Package 3 will be distributed into two sub work packages:

WP 3.1: Assessing potential impacts of plausible future scenarios of cryosphere and climate on water, energy and food

WP 3.2: Utilizing insights from the observations and simulations from all the activities to construct a sophisticated modelling framework for developing robust adaptation strategies

WP 3.1: Assessing potential impacts of plausible future scenarios of cryosphere and climate on water, energy and food

To sustainably manage the water resources of the Indus basin, this WP will assess the needs of water, energy and food in the basin and conduct scenario-mapping of river basin processes and interactions based on potential future climate and cryosphere scenarios.

Work Package 3.1

Assessing potential impacts

Biophysical System

- Demand Modelling
- Food demand modelling
- Energy Demand Modelling

Socio-economic System

- Socio-economic survey
- Traditional practices
- Socio-economic modelling
- Consultation

Regulatory System

Policies, Laws, Programs

Output

- Socio-economic scenario of the basin countries;
- Water demand and supply in various basins;
- Water, food and energy scenarios under changing climate and demography in the basin; and
- Scenarios related to water variability in specific context to water based industries like hydropower producers, beverage industries, food processing industries etc.

WP 3.2 Utilizing insights from the observations and simulations from all the activities to construct an integrated modelling framework and develop robust adaptation strategies

- A set of scenarios produced from work package 3.1, will provide an understanding about the present conditions of socio-economic status and projected impacts on local livelihood due to climate change impacts.
- To best utilize this understanding for the sustainable water resources management in the Indus basin, a matrix of adaptation measures best suited for the basin, will be developed which can be used by decision makers of the region to reduce livelihood vulnerability of the local population as well as for other business interests.

Approach

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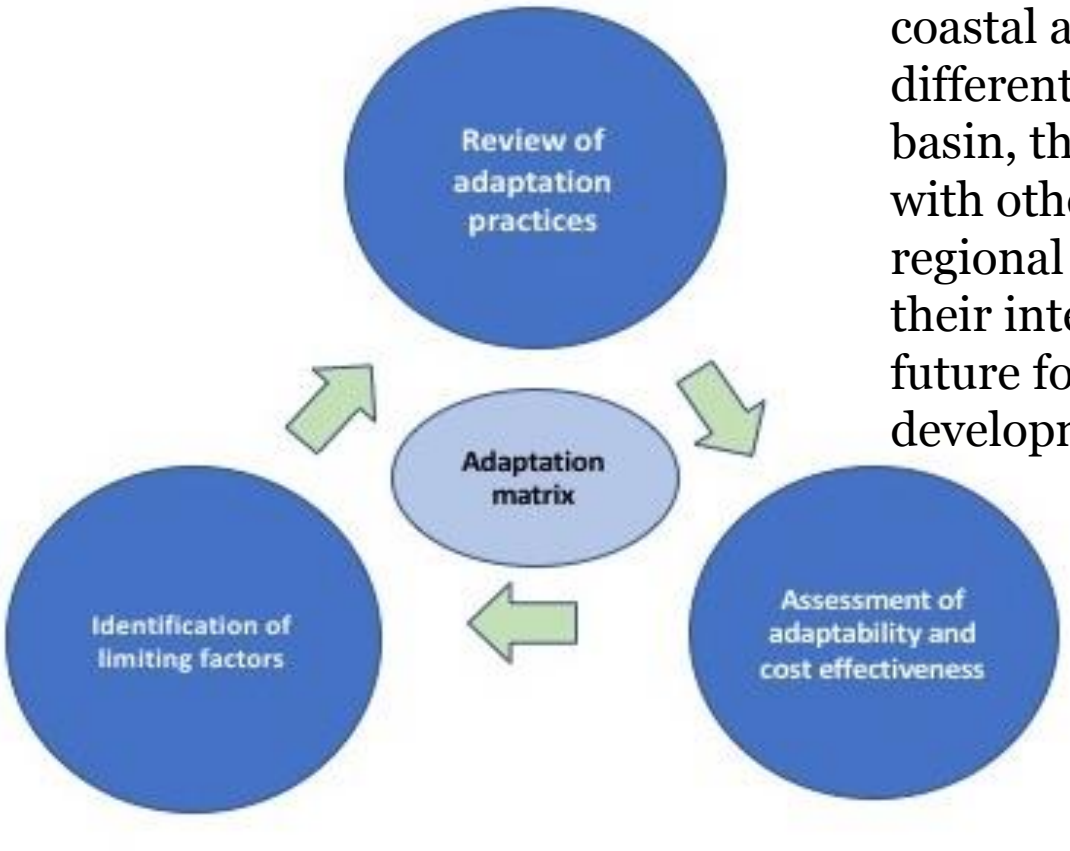
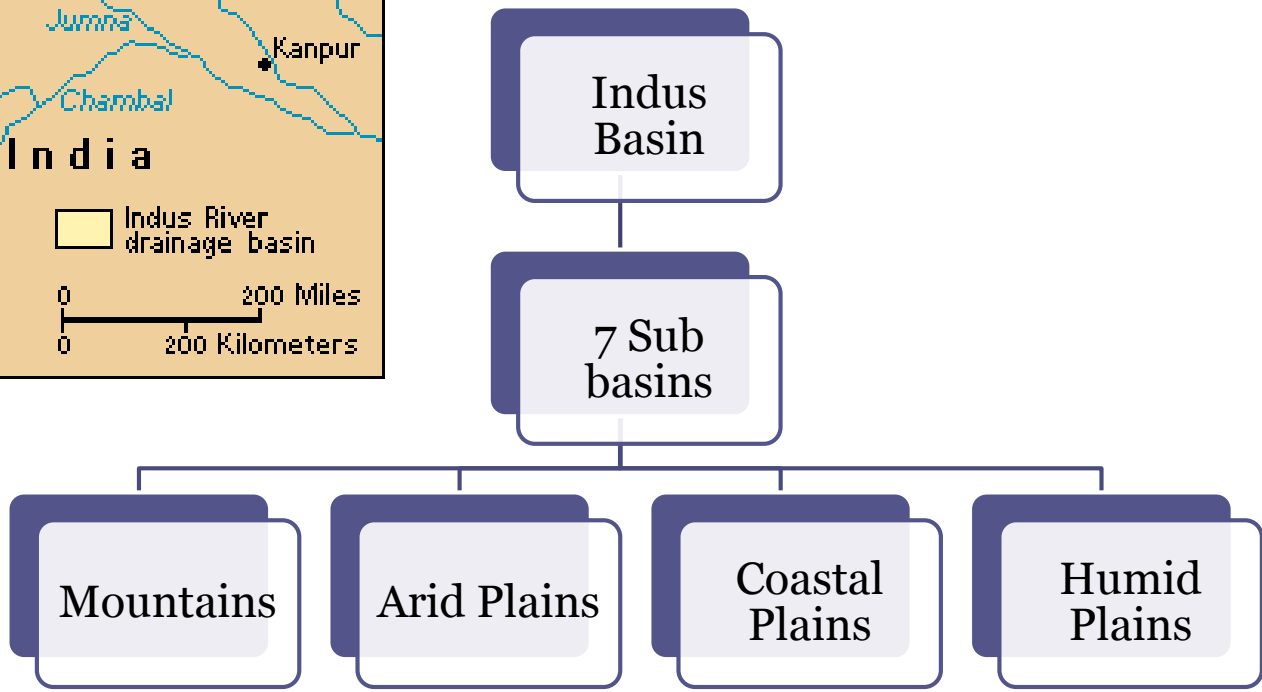


STUDY DOMAINS

A total of 12-15 sites may be selected depending on practicality and manageability



KEY OUTPUT

A framework for Integrated River Basin Management (IRBM) including various adaptation strategies that streamline socio-economic, governance and gender perspectives in the basin leading to achievement of sustainable development goals.

THANKS