

GOBESHONA 4

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Building local climate knowledge

Climatic Depreciation, Changing Rural Socio-Ecological and Cultural Landscape: A Resilient Development Philosophy? Lessons from Southern Delta



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Southern delta of Bangladesh is confronted with a variety of climate induced depreciation. These changes have multiple dimensions and characters, with variations of cultural and ecological landscape to vast socioeconomic impacts, such as:

- Social disintegration
- Fragile religio-anthropogenic cohesion
- Outraged educational sovereignty
- Losing inheritance
- Food insecurity
- Livelihoods
- Economic catastrophes

Thus they cause serious problems to:

- Rural economic custom
- Largely affect development and prosperities of riverine rural areas

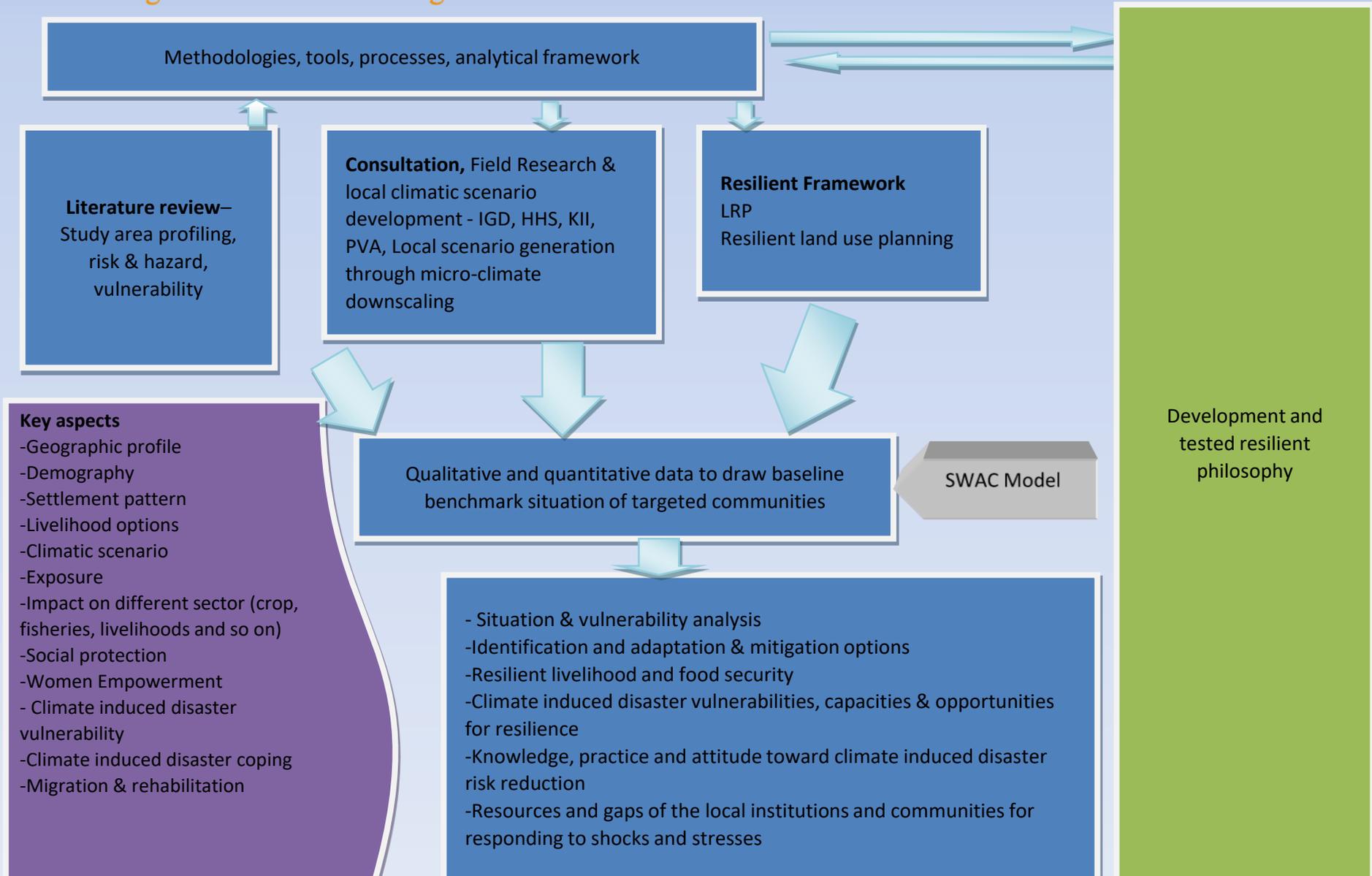
Changing

- Socio-ecological and
- Cultural landscape of rural areas

Adopting resilience interventions is best **philosophy** towards **resilient rural microcosm**.

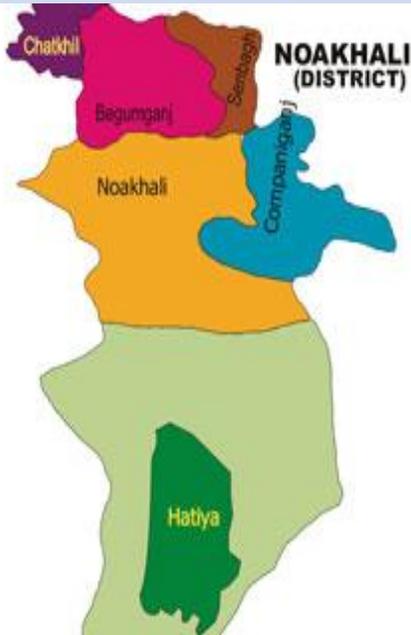
The following multi-dimensional strategic methods were adopted in conducting the research:

- Participatory Vulnerability Assessment (PVA)
- Local Resilient Planning (LRP)
- Local scenario generation through micro-climate downscaling
- Resilient land use planning
- Application of Soil, Water, Agriculture and Climate (SWAC) model.



Study area

The study was conducted in the Hatiya Island of Noakhali district, the part of extreme climate vulnerable southern delta of Bangladesh.



PVA (Participatory vulnerability Analysis)tools:

Transect Walks

- Familiarize with people and area
- Assess changes in land-use patterns within study clusters

Village map development

- Children, women and man will make vision map of their village.
- Later from our side some intervention will be done so it will be easier to make them understand about the importance of CF's.

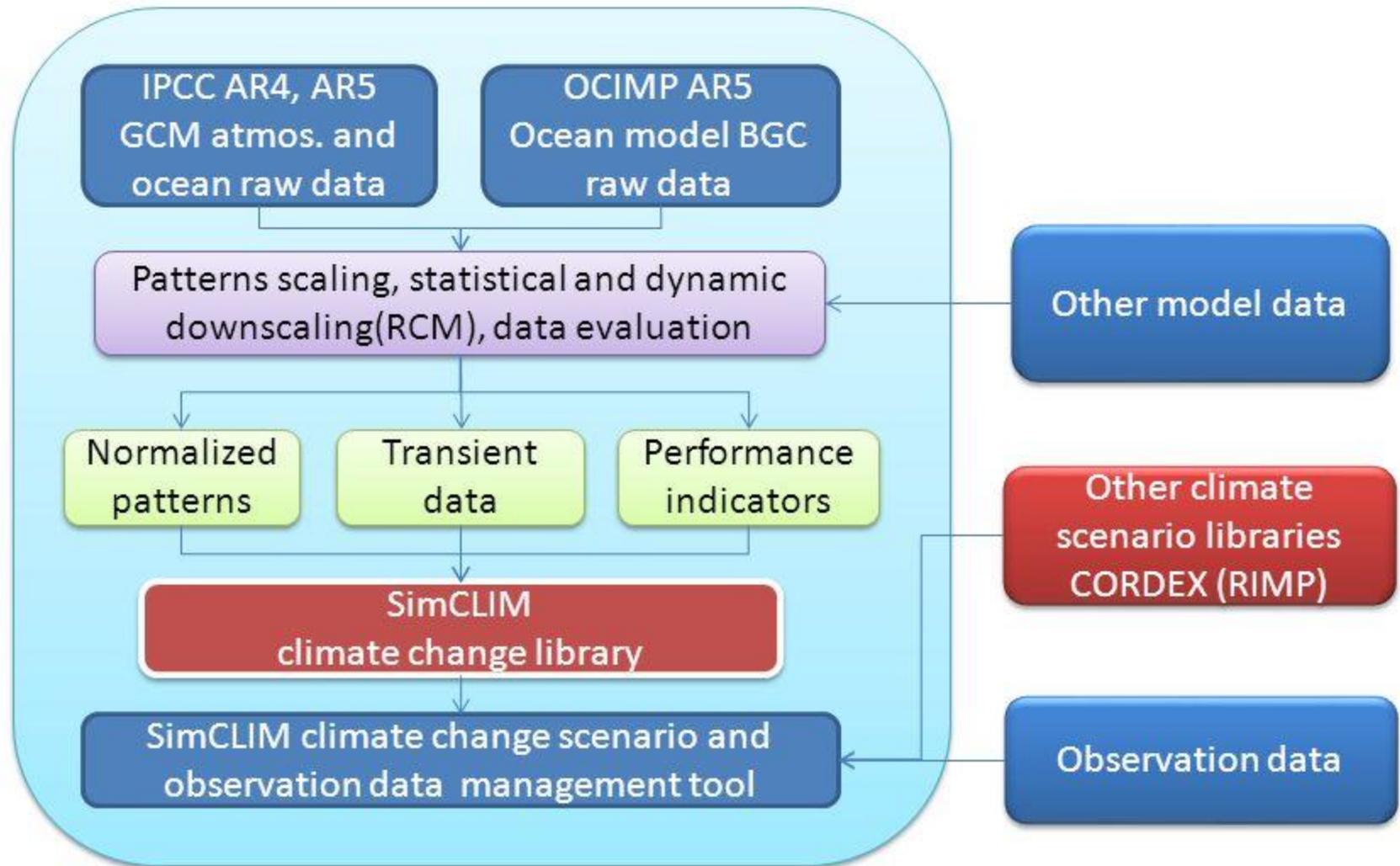
Timeline and Trend Analysis

- Elderly consulted (about major phenomenon, history of occurrence and CC experiences) and verified.
- Helpful in analysing trend and recommending measures.

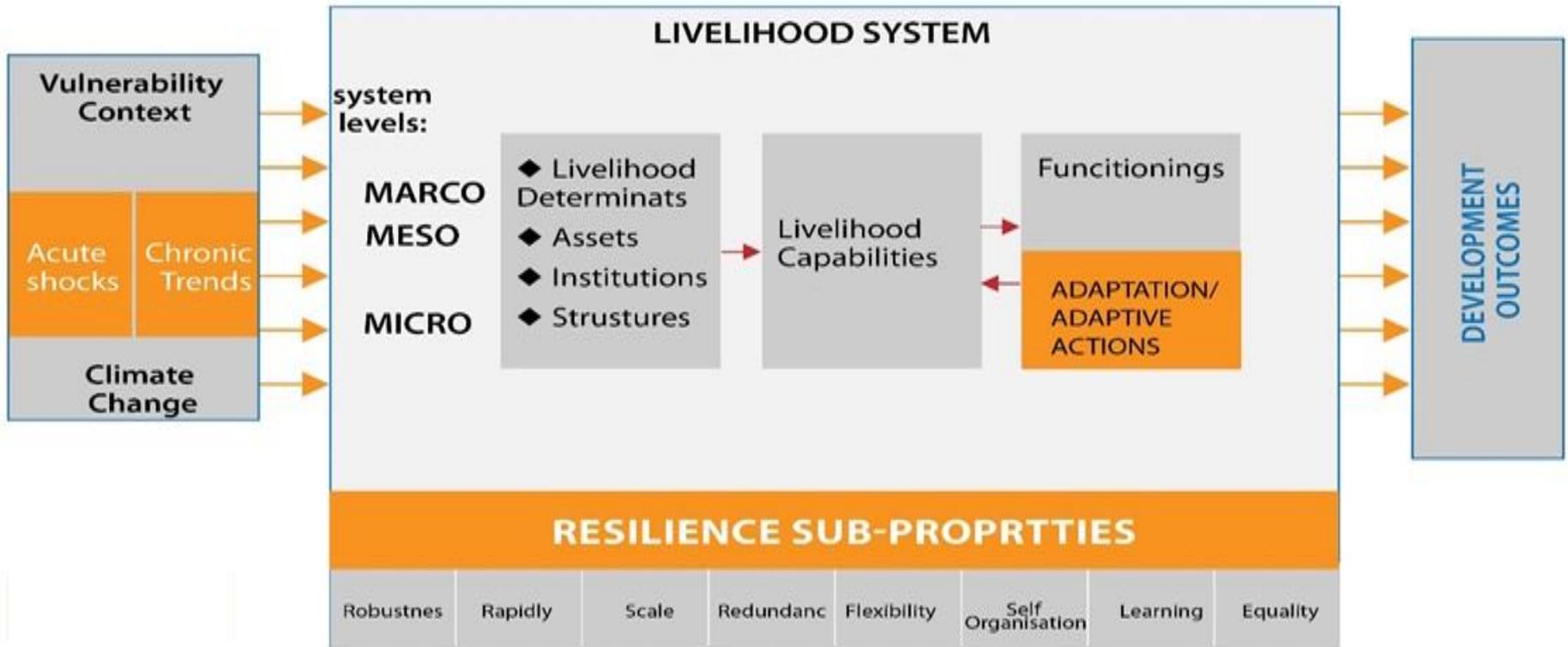
Problem Tree for Causal Analysis

- Problem tree will be drawn.
- Assess awareness, identifies areas needed for interventions and is useful to make questionnaire based on issues

SimCLIM climate change library method



Vulnerability Dimensions



Local Resilient Land Use Planning

Physical infrastructure

stormwater drainage, wastewater, solid waste and water

- Avoid locating facilities in high risk areas.
- Has resistance and redundancy been incorporated in the plans?
- Are at-risk assets climate proofed?
- What are the impacts on local supply, demand and infrastructure networks?



Economic development plans

- Have local economic capacity and exposure issues been identified?
- Have opportunities for the socially and economic vulnerable been identified?
- Are green development opportunities being developed?



Land use planning

development zones and land use policy

- Have local hazardous areas (e.g. flooding areas) been identified?
- Have low development and no-development plans been designated?
- Is there a framework for frequent evaluation of local development and growth patterns?



Public health plans

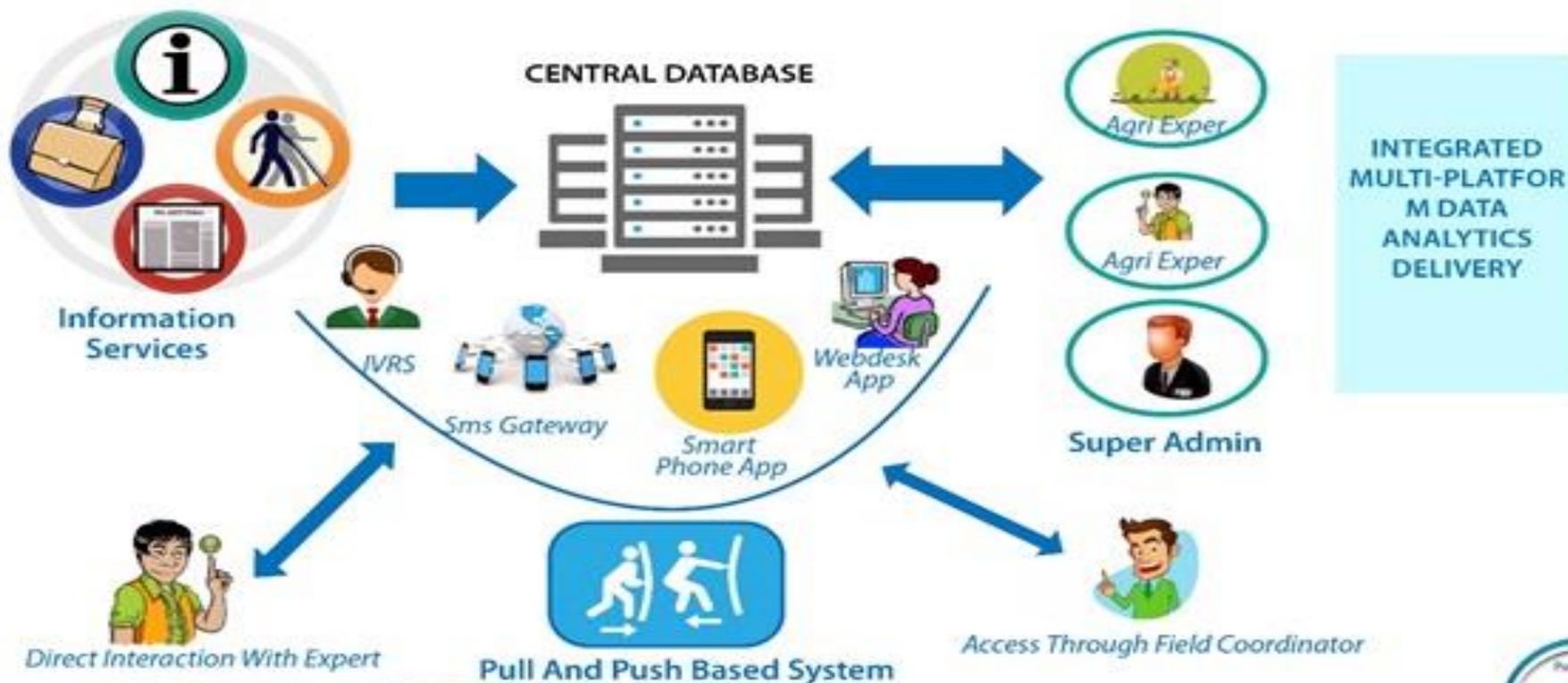
- Are health impacts and socioeconomic risks included?
- What are the health risks (e.g. heatwaves, waterborne disease)?
- Are there local strategies to minimize adverse effects?

Transportation plans

connectivity by road, pedestrian, transit and bicycle infrastructure

- Have weak transportation links been identified?
- Are the emergency transportation networks coordinated?
- Have at-risk assets been identified?

- ◆ Pull and push based system: Data can be transmitted through voice, text, images and videos for both end (Farmers to expert and back)
- ◆ Multi-platform: Web, mobile and ivrs
- ◆ Multilingual web portal and IVRS
- ◆ Personalized agro advisory based on "Farm & Farmer Profile".



SWAC model (software) contains:

The information or data relevant to:

Soil health restoration or conservation

Soil quality management

Plot to plot Crop suitability

Local agro-meteorology

Hydrology

Altitude

Seasonal cropping pattern

Diurnal wind speed

Precipitation

Soil salinity

Day length and sunshine



Fog and cold wave (prediction)

Irrigation scheduling

Daily up to date flood level

Daily up to date storm surge

Crop based diseases and
management

Crop based pest management

Information related to:

Quality seed source

Daily market information on:

Seed

Fertilizer

Pesticides

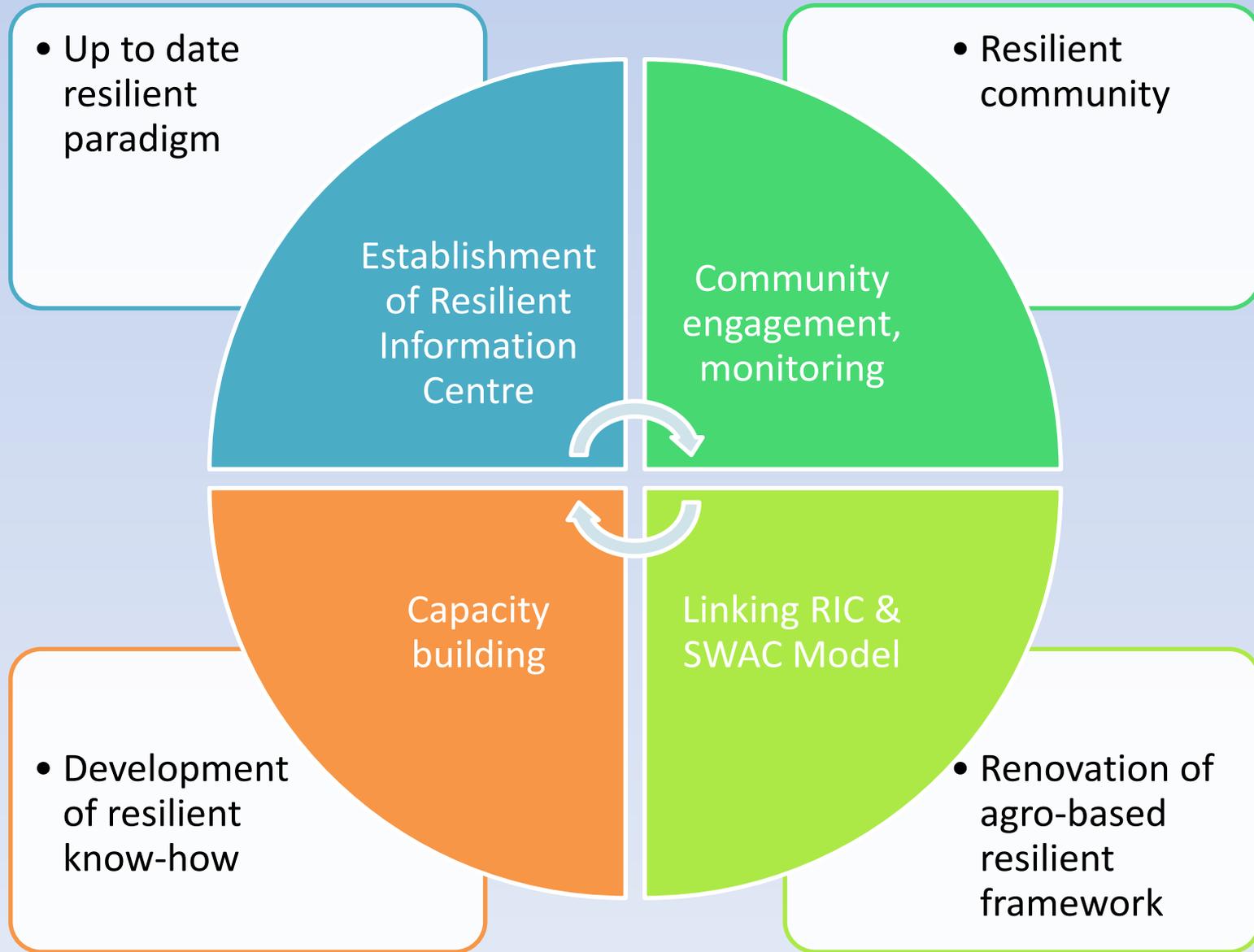
Agro-products



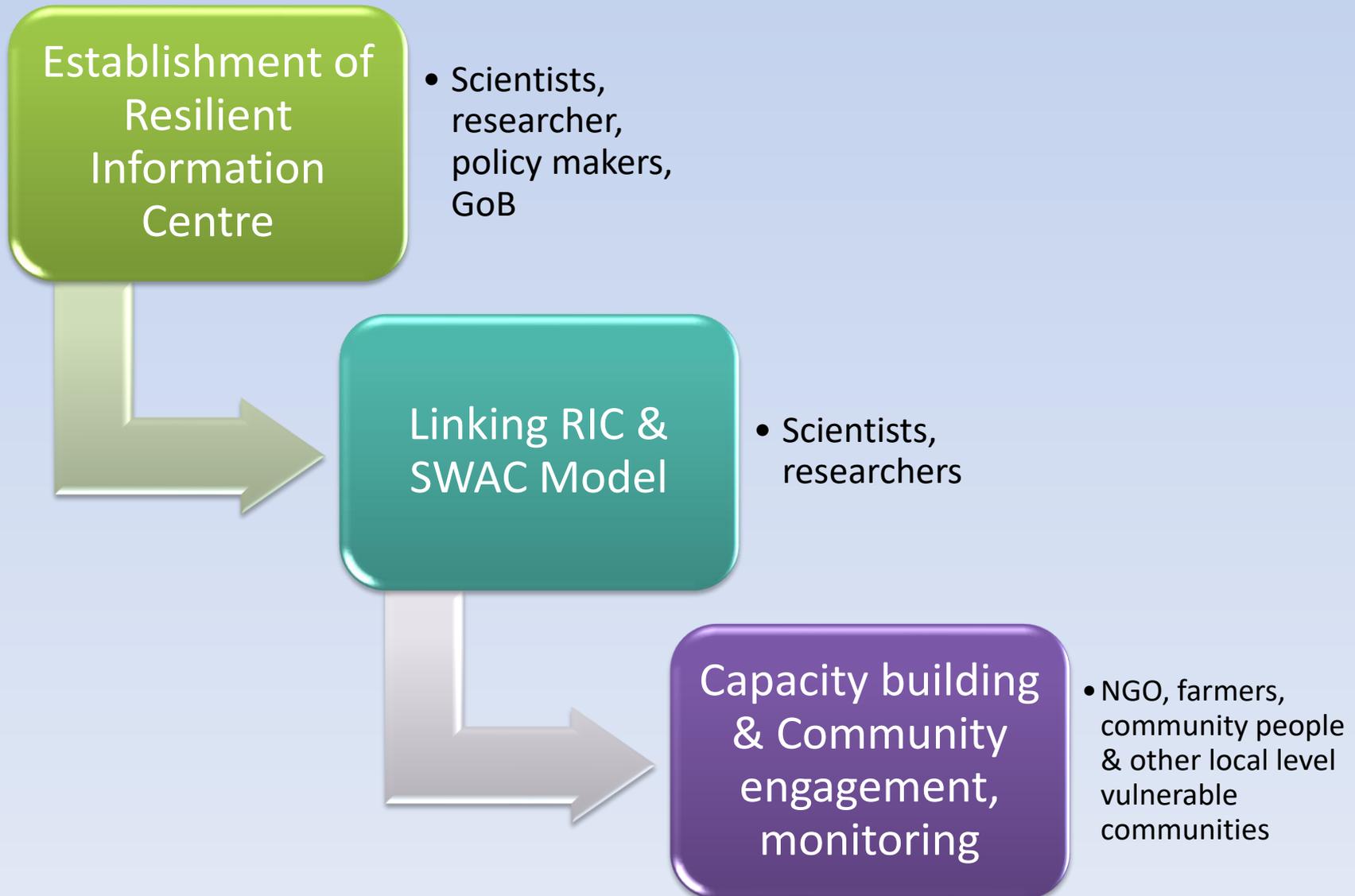
Proposed Local Solution



How the solution would address the problem?



How the Implementing Agency Reach Out the Beneficiaries



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Changing socio-ecological landscape is green introduction towards climate resilient rural development

