



## Resilience of Social-Ecological System to changes in Water-Energy-Food Nexus

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## Enhance Resilience of Social and Ecological system given changes in WEF nexus

Food Security  
Continuous water availability  
Energy availability

Climate change  
Water shortage  
Resilience and short, medium and long-term shock absorption

## OBJECTIVE

The aim of this project is to understand the inter-linkages between the social and ecological systems and how communities in these systems adapt to changes in WEF. We will use case studies in many different countries to explore linkages and adaptation strategies.

## Why policy now? Justification

Unpredictable circumstances  
Slow response mechanisms  
Interconnected sectors- many unknown interactions in the nexus  
Resistance to certain actions (e.g. Social values)  
Population trends- Anthropocene  
Need to understand the bigger picture  
To reduce vulnerability and enhance resilience

## Policy Interventions options social systems

Education and Awareness strategies  
Increase diagnostic capacity of government to identify vulnerabilities  
Capacity building  
Subsidies cash transfer  
Database infrastructure  
water supply for the communities

## Policy action options for ecosystems

Ecosystem protection  
Sustainable natural resource use and efficiency  
Limited Land cover and land use changes

## Evidence needed

Livelihood Strategies- use of natural resources  
Other evidence (e.g. value systems)- spiritual values  
Patterns of Ecosystem services (e.g. mapping)  
Future WEF trends and associated economic costs  
Social ecological systems interactions  
Demographics trends,  
WEF supply and demands  
Fuel efficiency and substitutes  
Connections between WEF and how changes in the supply of any of the three components impact the other  
Alternatives to the supply of W-E-F  
Possible technologies

## Evidence needed

Evidence gap map  
Gap Analysis of Nexus Policies  
Case studies in vulnerable regions  
Hazards –natural and man-made  
Coping mechanisms  
Inter-linkages in the social ecological systems in WEF

## Policy Application and expected outcome

Selection of policy options based on evidence  
Application of selected policies

Expected Outcome  
Increase resilience suggest options for communities for both people and the environment