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## Disaster Risk Reduction, Climate Change Adaptation

### Capacity Building and Awareness Raising



**Donor:** global Change SysTem for Analysis, Research and Training (START), Climate & Development Knowledge Network

**Duration:** April 2013 – November 2014

**Project Title:** Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion

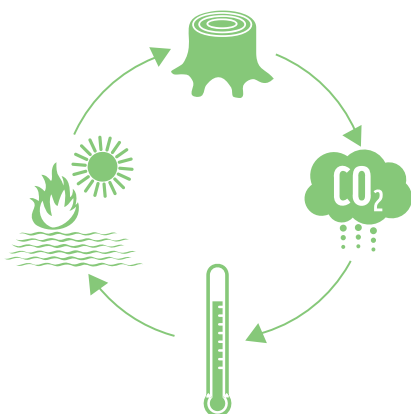
The impact of climate change on Pakistan has been severe, which is particularly exemplified by the country being consistently ranked as the most vulnerable nation by German Watch in its annual Climate Risk Index since 2010. The province of Sindh, in particular, has been largely affected by recent episodes of disasters and climate change due to several factors such as low adaptive capacity of communities, weak institutional and policy setup, and local dependency on natural resources.

In response, WWF-Pakistan, through the support of global change SysTems for Analysis, Research and Training (START) and Climate and Development Knowledge Network (CDKN) carried out a project on *Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion*. The project primarily focused on identifying ecosystem resilient measures and livelihood recommendations in the livestock and fisheries sectors of Sindh. Capacity building of communities and key line agencies was a key component of the project.

### Project Objectives

The objectives of the project are to:

1. Identify priority scientific information and analytical policy information needed to implement integrated disaster risk reduction and climate change adaptive measures in livestock and fisheries sectors of Sindh.
2. Outline to planners and policy makers the viability of new climate-resilient ecosystem-based livelihoods measures in the livestock and fisheries sector in Sindh.
3. Build the adaptive capacity of vulnerable communities in selected villages of Sindh, with an emphasis on women.



4. Recommend innovative ecosystem-based climate-resilient livelihoods to the government of Sindh and entry points for mainstreaming these as a part of integrated disaster risk reduction and adaptation policies with a focus on gender mainstreaming.

## Achievements

Experience during the 2010 and 2011 floods showed that the respective provincial governments and their specific agencies designated to carry out disaster risk management activities failed to provide early warning about possible heavy rains and floods in Jacobabad and Kashmore districts of Sindh, and the Naseerabad and Jaffarabad districts, Balochistan. This was largely due to limited capacity of disaster agencies to manage such situations and/or not having adequate budgetary allocations for disaster risk reduction. As a result, the local communities were suddenly caught between rains and floods, facing serious human and livelihood losses.

In order to address this need, WWF-Pakistan under the project held capacity building workshops at community and policy levels.

Two community level trainings were held in Kenjhar and Chotiari through which 500 heads of households, including 250 women, were trained in aquaculture methods. Twenty master trainers, who were previously trained in aquaculture methods, were mobilized to hold trainings in clusters. Each master trainer trained a cluster of 25 community members for two days.

In addition, two policy level workshops were held in the month of June 2014 in Karachi. The aim of the workshops was to build the capacity of planners and policy makers on mainstreaming disaster risk reduction (DRR) and climate change adaptation (CCA) measures into livestock and fisheries sectors policies.



## WWF-Pakistan Climate Change Goal

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## Disaster Risk Reduction, Climate Change Adaptation, Fisheries and Livestock

### Gender Roles and Vulnerability in the face of Climate Change



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**Duration:** May 2013 – November 2014

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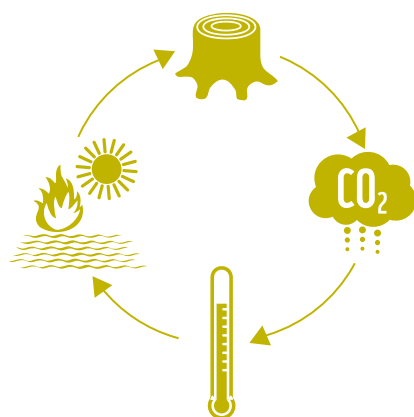
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### Project Objectives

In view of these issues, the objectives of the project are to:

1. Identify priority scientific information and analytical policy information needed to implement integrated disaster risk reduction and climate change adaptive measures in livestock and fisheries sectors of Sindh.
2. Outline to planners and policy makers the viability of new climate-resilient ecosystem-based livelihoods measures in the livestock and fisheries sector in Sindh.
3. Build the adaptive capacity of vulnerable communities in selected villages of Sindh, with an emphasis on women.





4. Recommend innovative ecosystem-based climate-resilient livelihoods to the government of Sindh and entry points for mainstreaming these as a part of integrated disaster risk reduction and adaptation policies with a focus on gender mainstreaming.

## Achievements and Recommendations

The project developed a policy brief on the issue of gender vulnerability and the need for gender mainstreaming in policy. Based on the project findings, the recommendation put forth in the brief are aimed at incentive-based regulatory instruments, and focuses on:

- 1) Adjustments needed for activities that are likely to remain on what may be described as “business as usual” trajectories; and,
- 2) New value added initiatives that arise in and of themselves as adjustments to climatic factors.

The recommendations given in the policy brief are as follow:

1. Establish community level gender-responsive resource management bodies and small groups to ensure access to resources needed for livestock and fisheries development.
2. Provide marginalized groups of fishers and livestock breeders with new and improved access to markets and improve working conditions in existing labor markets that are largely unregulated.
3. Provision of gender responsive advisory services providing essential information and skills to ensure the competitiveness of small-scale family production systems.
4. Extension of alternative livelihoods to marginalized groups, including poor women, to reduce their reliance on fragile and constricted natural resources.

A paper on *Building Resilience of Women through Integrated Disaster Risk Reduction and Climate Change Adaptation* was prepared that argued how innovative livelihood measures such as ornamental fish breeding, dairy farming, and integrated livestock fish farming, as well as, participatory processes such as establishing women led community based organizations and linking women with local buyers so that they can sell their outputs directly at higher returns and can help build their resilience to disasters and climate change.



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## Disaster Risk Reduction, Climate Change Adaptation, Fisheries and Livestock

### Policy Matters: How to Effectively Mainstream Disaster Risk Reduction and Climate Adaptation into Sectoral Policies?



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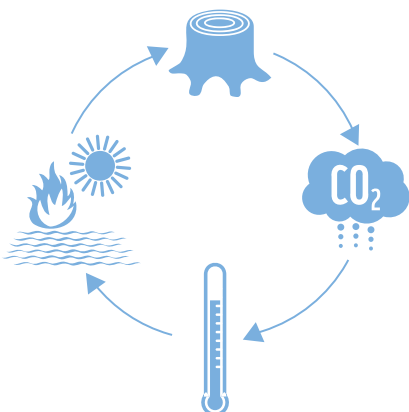
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Mainstreaming is an iterative process that involves a range of stakeholders working at multiple levels to integrate disaster risk reduction (DRR) and climate change adaptation (CCA) measures into official government planning and development documents such as sectoral policies, national and provincial budgets, and PC-Is. As such, the process of mainstreaming DRR and CCA into planning and policy is still in its infancy stages in Pakistan, where the issue has just started to be discussed among planners and policy makers.



#### Project Objectives

In view of these issues, the objectives of the project are to:

1. Identify priority scientific information and analytical policy information needed to implement integrated disaster risk reduction and climate change adaptive measures in livestock and fisheries sectors of Sindh.
2. Outline to planners and policy makers the viability of new climate-resilient ecosystem-based livelihoods measures in the livestock and fisheries sector in Sindh.
3. Build the adaptive capacity of vulnerable communities in selected villages of Sindh, with an emphasis on women.
4. Recommend innovative ecosystem-based climate-resilient livelihoods to the government of Sindh and entry points for mainstreaming these as a part of integrated disaster risk reduction and adaptation policies with a focus on gender mainstreaming.



## Recommendations

As concerns mainstreaming, following recommendations are useful for planners and policy makers to help them successfully integrate ecosystem based livelihood measures into planning and policy documents in relation to climate change adaptation and disaster risk reduction:

### Identify Pakistan-specific Priorities

In order to ensure climate/disaster resilient sectors, agreement on priority measures and locations or jurisdictions must be established.

### Consult Stakeholders on Policy Issues

Stakeholder engagement, especially among those responsible for fiscal planning in a first instance, is needed to assure years ahead that money is set aside to improve spending on replacement and regeneration of ecosystems such as rangelands, forests, and lakes.

### Identify Possible Entry Points for Mainstreaming

In order to position livelihood issues well within the public agenda, entry points for mainstreaming ecosystem based livelihood measures into development planning need to be effectively identified. In Pakistan, these entry points can be: Vision 2025, annual development plans, sectoral budgets and policies, and district and provincial plans.

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## Disaster Risk Reduction, Climate Change Adaptation, Fisheries and Livestock

### Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion



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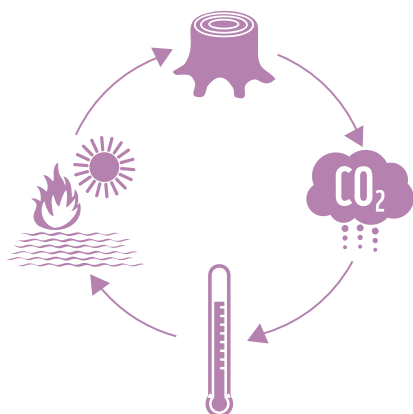
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#### Project Objectives

In view of these issues, the objectives of the project are, therefore, to:

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the government of Sindh and entry points for mainstreaming these as a part of integrated disaster risk reduction and adaptation policies with a focus on gender mainstreaming.

## Achievements

In recent years, as throughout its history, there have been a number of large-scale flooding events on the Indus River in Pakistan. These have been disastrous for those located in the vicinity: farming livelihoods were affected via loss of land and/or livestock, fisheries activities were hindered, particularly in the Indus delta area, and household capital such as housing and machinery were often destroyed. Therefore, as a first step, the project aimed at addressing questions concerning loss of well-being, coping strategies and recovery in the context of Pakistan.

Another issue that the project worked on related to the capacity of vulnerable groups, who often face social, economic, and political barriers that limit their capacity to cope with natural hazards and climate change impacts. In this respect, gender-sensitive strategies such as community based aquaculture were identified through a feasibility study. More than 500 heads of households, including 250 women, were trained in sustainable aquaculture methods to respond to the environmental crises caused by climate change and to pay special attention to the need to enhance women's capacity to manage risks, reduce their vulnerability and increase their opportunities for development.

At the policy level, workshops were held to develop the capacity of line officials on integrating disaster risk reduction and climate change adaptation into sectoral policies.



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## Disaster Risk Reduction, Climate Change Adaptation, Fisheries and Livestock

### Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion - Research



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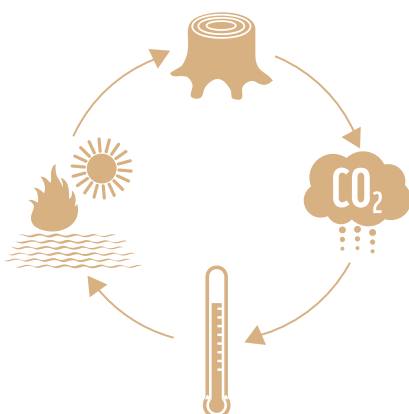
Research studies on estimating loss of well-being due to floods and other disasters are scant in Pakistan. In particular, the role of institutions, markets and social networks and their arrangements in determining the immediate outcomes and recovery have not been researched in any kind of detail. In order to fill in the research gaps and to assist planners and policy make informed policy decisions, the project, *Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion* produced unprecedented research outputs to understand the impacts of floods and disasters on livestock and fisheries sectors, to investigate the strategies that households undertake to maintain their well-being, and to place adaptation and climate change policy in the political, historical and economic context in Pakistan.

*Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in the Indus Ecoregion*, funded by global change SysTems for Analysis, Research & Training (START) and Climate and Development Knowledge Network (CDKN), focused on identifying ecosystem resilient measures and livelihood recommendations in the livestock and fisheries sectors of Sindh.

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## Research Studies

Following three research studies were conducted, as part of the project:

### Survey Assessment of Floods of 2010, 2011 and 2012

The study used a survey dataset of around 500 households at two sites of Chotiari and Keenjhar to evaluate the nature and value of the immediate loss of some of the chief determinants of household well-being following the flooding in 2009-2010 such as assets, income and consumption. Using graphical analysis, results reveals how the distribution of these outcomes has changed over time for the various income groups and for those hit by the flood, as well as, a control group who quite by chance were not. The immediate and medium-term effect of the natural disaster on these determinants of well-being was then evaluated by looking at the impact immediately post-flood and later on in the 'recovery period'.

The results indicate that on average the impact of the flood has had no long-lasting effect on consumption, income or assets in either Chotiari or Manchar, but consumption smoothing seems to be a common coping strategy for communities to cushion themselves after a disaster.

### Feasibility Study

The aim of the feasibility study was to identify climate resilient ecosystem-based livelihoods that were suitable for communities in Sindh, and, that were climate friendly in nature and take disaster risk into account.

The study identified aquaculture as a new climate resilient ecosystem based livelihood that can be introduced in Sindh to enable communities to withstand some of the impacts of climate change and natural hazards. However, in absence of appropriate disaster risk reduction (DRR) measures, aquaculture infrastructure such as ponds and cages are also vulnerable to disasters.

### Political Economy of Climate Change Adaptation in Pakistan

The objective of the study is to place adaptation and climate change policy in the political, historical and economic context in Pakistan. It examines:

- 1) The causal roles of absent policies and policy failures in the extent of losses suffered in the 2010 floods and the 2011 rains;
- 2) Institutional and thematic policies, coordination mechanisms, and scientific and economic information requirements for functional integrated DRR and adaptation measures in the fisheries and livestock sectors; and,
- 3) Realistic and time-bound entry points available for mainstreaming of DRR and adaptation measures such as ecosystem-based livelihoods in the fisheries and livestock sector.



### Poverty-Environment Linkages Goal

The establishment of poverty-environment linkages for the economic uplift of the people.