



Sea inundation diminishing residential and food security, health and livelihoods across Badin District at Sindh, Pakistan. Photo: Asim Saqlain

## Enhancing the evidence base for Vulnerability and Risk Assessment in Badin, Pakistan

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**In Pakistan, thousands of people are affected by the impacts of climate change. District Badin (Sindh) is one of the most vulnerable areas, where coastal communities are affected by sea intrusion which has damaged both natural resources and productive assets, such as water resources, cultivable land and associated livelihood opportunities. Insufficient investment in district annual development plans, alongside a lack of information, services and knowledge of adaptation at community level have all contributed to heightening vulnerabilities and exacerbating existing poverty patterns. In summary, natural and human-made hazards and the subsequent risks have made it much harder for the coastal communities of Badin district, especially women, to withstand the impacts of disasters and external shocks.**

# 1 INTRODUCTION

## What is the situation in District Badin?

In District Badin, sea intrusion has inundated more than 0.5 million hectares of farmland in the coastal areas, and seawater has intruded as far as 85km up the sweet-water channels downstream. Some of the inundated land has been seriously damaged, and this is having a significant impact on the local population, the majority of whom (65 percent) depend for their livelihoods on catching and drying fish (especially women), and work in small-scale businesses such as fish processing for poultry food. This income source has not only been affected by natural resource degradation but also by changes in fishing regulations and a decrease in fish species over the past decade, due to a rise in temperatures and the cutting of mangroves, meaning that fishing has become an unreliable livelihood source.

**Map 1: Area of Badin, Pakistan affected by sea intrusion, cyclones and tornadoes**



As a result of the land degradation caused by sea intrusion, cyclone and tornadoes, the area being used for agricultural production has reduced from 82,200 ha in 2001–2002 to 61,900 ha in 2016, resulting in a decrease in food crops. The population are thus totally dependent on imports of wheat and rice from neighbouring areas. This dependency, and associated issues such as the added cost of transportation, price exploitation and the difficulty preserving stock at household level increases their food insecurity and ultimately their overall vulnerability. Communities are also suffering from extreme shortages of safe drinking water, which increases the care burden for women (they have to walk long distances to fetch water for household consumption and for work) and has resulted in the migration of thousands of people away from the area. One current coping strategy is to engage in informal loan agreements with landlords known as ‘Haris’ for agricultural inputs, food consumption needs, social events and emergencies through monetary advances; however these process are not properly recorded and vulnerable communities risk being trapped in an exploitative, bonded contract.

The Oxfam programme in Pakistan has been working in this area on a climate change adaptation project. As part of this programme, they decided to run a vulnerability and risk analysis assessment (VRA) to further their understanding of the hazards and social issues impacting the community. They generated initial information through focus group discussions (FGD) with communities and then conducted key informant interviews with independent professionals and relevant officials in the district-level government for comparison and verification.

## 2 PUTTING THE VRA INTO PRACTICE



Oxfam in Pakistan's programme<sup>1</sup> did a vulnerability and risk assessment in the coastal areas of Badin district and discovered that the priority concerns were: erratic precipitation patterns causing pluvial floods during the monsoon season, large-scale cutting of mangrove due to its use for charcoal, land degradation due to sea intrusion (up to 25km inland) which is leading to food, income and residential insecurity and water salination caused by the incursion of saltwater into fresh water bodies, thus decreasing the availability of safe drinking water. Some communities were also resorting to climate-related migration when they no longer had enough land for residential and livelihood purposes.

The VRA was done in stages, with the initial vulnerability assessment done through community group meetings involving stakeholders such as male and female fisherfolk, farmers from both sea intrusion areas and flood-affected areas, share-croppers, daily wage labours and livestock farmers, who identified the critical risks and hazards along with other social issues for themselves and their livelihoods. These were then validated through discussions with relevant authorities and key informants: district department of agriculture (fisheries, livestock, crop extension officers), district metrological department, district disaster management authorities (DDMA), district social and welfare department (labour department) and district department of land and revenue (land revenue officers). The different stakeholders then came together to undertake the remaining VRA steps (impact chain exercise and adaptive capacity analysis).



During the workshop, the following areas of critical concern were raised:

1. The major livelihood source, fishing, is being severely impacted and becoming increasingly more unreliable, with a much lower fish catch and lower returns as a result of hazards associated with climate change, e.g. sea intrusion and mangrove cutting. As a result, men have moved towards deep sea fishing for long periods which has increased the burden on women for both domestic duties and livelihood labour (women's livelihood activities are predominately processing and sorting of fish and shrimps, sewing and embroidery and timber collection). The lack of viable livelihoods is also forcing people to enter into increased debt on unequal terms, resulting in long-term bonded servitude. Overall, as a result of decreases in water availability and increased salinity, a variety of livelihoods are under pressure and households are increasingly becoming dependent on one or two sources of income, weakening their overall absorptive and adaptive capacity.
2. Livestock ownership (which was used to supplement household consumption needs and as a source of saleable assets) is also under threat because water inundation and logging have resulted in the loss of large areas of grazing land. The loss of this livelihood source has forced people to resort to casual labour which is insecure, often has exploitative working conditions and the added burden of travelling further and further in search of work.

### 3 RECOMMENDATIONS AND KEY ACTIONS

The findings from the VRA contributed to both internal and external activities, including programme design, advocacy messages and staff and partner capacity building. Key actions included:

1. Embedding the findings in the current climate change adaptation project as part of the data for the baseline study and to guide the design of one year adaptation action plans at community level. This included activities such as: embankment construction to protect from sea intrusion; climate youth clubs; household kitchen gardens; community awareness raising and mobilization; plantation and nursery farming of mangroves and seasonal vegetables and land reclamation.
2. Building the capacity of local government officials via participation in the VRA and collaborating with them through the shared local adaptation plans to help implement the activities at scale in their local development planning process. However, resource allocation and delivery have limited this success. This work has continued via follow-up meetings and further capacity building of government staff at district and provincial levels.
3. Using the information from Badin district alongside the Oxfam GROW campaign programming to advocate for the adoption of a climate change policy in Sindh and Punjab. This subsequently helped to influence provincial government to improve their consideration of climate change issues.

## 4 REFLECTIONS

Implemented as part of a climate change adaptation project funded by Asia Disaster Preparedness Centre (ADPC), the VRA represented a unique opportunity to bring different stakeholders together and build collaborative understanding and action around climate change. The team in Badin specifically noted the value of validating NGO-led risk analysis via discussions with officials and community members. This helped to build shared understanding and community buy-in for subsequent programming. Likewise, the participatory process helped to build shared ownership, provided validation for the action plan and helped with future advocacy.

The four steps of the VRA were accessible and clear to the participants and the prioritization exercise in the Initial vulnerability assessment was particularly useful to focus the discussions and ensure our subsequent activities were relevant and responded to the priorities of the affected population. Particularly interesting findings from the adaptive capacity analysis was the range of current coping strategies which were built on social capital and shared risk management e.g. evacuation together to a designated safe place, work together to dry fish for food preservation and starting new businesses. The process of undertaking joint assessment activities with communities and government officials for the impact chain and the analysis of existing adaptive capacities steps further enhanced the impact of the VRA, because the district government was then able to endorse the findings and use them to inform the development of their annual plans.

Going forwards, Oxfam and partners need to continue to work with communities in Badin so as to support them to understand and advocate for their rights around climate and weather-related risks e.g. community-led campaigning to ensure that local government officials implement the measures outlined in the planning and development plans. Oxfam will also seek to use the experience and learning from this exercise to launch further climate change programming in other climate zones of Pakistan and influence broader policy-level activities. The VRA will therefore remain a useful and relevant tool to guide our understanding of vulnerabilities in Pakistan and the findings can inform the design of both community-led DRR and livelihoods-based programming.

## NOTES

1 Livelihoods and Adaptation Programme

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