
MODULE 3 Building coping strategies

This module seeks to increase the understanding on issues and opportunities that policy-makers need to address to enhance coping strategies of communities in dealing effectively with extreme climatic events such as droughts, floods etc. This module helps in identifying issues and opportunities that enhance coping strategies of communities in dealing effectively with extreme climatic events such as droughts and floods. It encompasses a review of current coping responses and measures adopted by communities to cope with and adapt to climatic extremes; an assessment of the efficacy of these measures; identification of lacunae, and suggestions for enhancement of adaptive capacities.

Geographical focus and site selection

The geographical focus of the study includes three river sub-basins: Pennar basin in Andhra Pradesh (districts of Chittoor and Anantpur); Mahanadi in Orissa (districts of Jagatsinghpur and Puri); and Godavari in Maharashtra (districts of Ahmednagar and Nasik). Selection of these basins is congruent with locations of drought- and flood-affected regions in the country—Andhra Pradesh and Maharashtra experiencing drought conditions and Orissa being plagued by floods. Districts in each of the states were selected by integrating spatial and non spatial information utilizing secondary data pertaining to biophysical characteristics, sociological, and technological indicators in the GIS (geographical information system) domain.

Data collection

Field surveys were conducted for the collection of primary data in 17 villages spread across the above-mentioned districts. The villages were selected on the basis of two indexes—irrigation and infrastructure. The institutional and field-based surveys provided a harvest of information on these factors.

- Intensity of the problem of droughts and floods
- Change in climatic conditions (rainfall, temperature) over a period of time
- Crops grown in the region
- Change in cropping patterns
- Irrigation

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- Livelihood options and migration
- Infrastructural development
- Availability of financial services and schemes
- Importance of insurance

Integrating the results

A critical review of policy- and community-oriented interventions that enhance the capacities of communities to cope during extreme climate situations is essential part of the exercise. This process integrates the results on impacts with the underlying adaptive potentials, seeks to assess the extent of vulnerability across these regions. Also, the options that can help enhance coping abilities should be evaluated by carrying out a cost–benefits analysis. This includes considering expansion of insurance, credits/ loans, income diversification, and crop diversification measures.

Salient findings

The salient findings from the surveys done for the case study include the following.

- Greater dependence on agriculture was found in each of the study regions surveyed. Nearly 70% of the main workers were found to be engaged in agriculture in Andhra Pradesh and 50% and above in Orissa.
- Those dependent on agriculture showed higher vulnerability in terms of higher relative losses in income. On the other hand those dependent on non-agricultural occupations were observed to be less impacted on a relative basis.
- A large percentage of farmers were found in the less than 1 and 1–4 acre categories. Landholdings were seen to have a positive relation with the incomes; therefore, there are reasons to be concerned with. The cropping intensity was found to be drastically affected in the event of drought/flood.
- Production showed a drastic reduction.
- Farm employment showed an overall decrease.
- The overall percentage of people resorting to the use of insurance as a measure to cope with drought/ flood was very low. However, credit loans were reported to be availed widely amongst the surveyed villages.
- Overall household savings have been reported as a major measure of coping. Distress sale of land and jewellery in Andhra Pradesh and cattle in Orissa were observed.
- Expenditure on health was found to increase during drought and flood occurrence. Reduction in consumption patterns has also been observed in some cases.

- About 10 % of the households reported impact on education in case of Andhra Pradesh.

Case study: Orissa

The geographical focus of the study includes the districts of Jagatsinghpur and Puri, located in the Mahanadi River Basin. Six villages were chosen: Tarasahi, Naugaon and Sunadiakandha in Jagatsinghpur, and Gadasampat, Deipur and Raibidhar in Puri. About 70% of the working population in Orissa is engaged in agriculture, and it contributes to about 60% of the state domestic product. Rice, groundnut, soyabean, pulses, and turmeric are some of the major crops grown. About 75% of cultivable land is rainfed. In Jagatsinghpur, 63% of the total geographical area is cultivated; 7% is waterlogged; and 5% is saline area

The survey revealed that

- During floods, relief camps are crucial, as 40.6% and 50.3% of people in Jagatsinghpur and Puri shift to these during floods.
- Insurance is not popular among rural households. Group discussions showed that there was much confusion among the people vis-à-vis definition of a unit, which declares a particular year as a calamity year.
- About 31.5% in Jagatsinghpur and 1.2% in Puri are involved in aquaculture business, inundation of fresh water into the land being cited as the singular reason.
- Jewellery and land are not usually items of distress sale. The reason being that the registration fees of land is sometimes more than the selling price. Selling cattle is the preferred option.
- 54% of the study households in Jagatsinghpur and 51.8% in Puri indicated that the major factor influencing coping mechanism was the flood forecast and warning information.
- Community organizations (NGOs) are another important factor.
- About 40% of study households were understood the significance of maintaining proper embankments.

Adaptation measures, hence, ought to be in the area of infrastructure (construction of embankment, flood shelter for people, and livestock), government schemes (insurance sector interventions, credit/loans), agriculture (agricultural extension), and disaster training programmes.

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