

**POLICY
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Disaster Management in Agriculture



NAAS

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Introduction

Human vulnerability to disasters is an age-old phenomenon. Disasters play havoc with people's lives. Their aftermath results in death, destruction, misery and trauma. The unique geoclimatic conditions of our country make this region vulnerable to natural disasters. There are varied reasons for occurrence of disasters. Modernisation and industrialisation have disrupted the natural resource balance. This, alongwith alarming increase in population, depletion of resources, lack of knowledge and skills and rising economic disparities are considered to be mainly responsible for the vulnerability of society to these catastrophies. The situation, though more or less similar globally, is quite distressing in countries of South Asia, such as India. The long history of disasters, and the resulting sufferings, are reasons enough to ponder over their manageability.

One of the major repercussions that disasters have, is on agriculture. A substantial part of the population depends on agriculture for its livelihood. Agricultural activity is adversely affected by any unforeseen weather changes or variations in physical conditions. This gets accentuated in case of cyclones, floods and droughts resulting in disruption of people's livelihood and adding to the risk, damage and stress of disasters. Drought is a perennial feature, 16 per cent of India's total area is drought prone and approximately, 50 million people are annually affected by droughts. About 68 per cent of total sown area of the country is susceptible to drought at one time or other. Under this latest dispensation, another 'sub-humid' category, having an adverse water balance, has been added to arid and semi-arid category. The drought of 1987-88 was one of the worst in India. Drought situations had also affected about 11 states, in 1999-2000.

Food losses due to pests, disease, wild animals, insects and weeds are considerable, about 35 per cent of world crop production is lost in spite of pesticide and control programmes. Insect outbreaks are generally the result of a combination of temperature, monoculture of crops, introduction of plants to new locations, weather pattern, and migration (ecological factors). In India, locust infestation-prone areas are—Rajasthan, Gujarat, Punjab, Haryana, Andhra Pradesh, Karnataka and Maharashtra.

Some lessons learnt from drought of 2000 in Rajasthan:

- There should be a specific policy for drought prone areas.
- Disaster Management Policy has to be area-specific and forecasting should be dependable and timely.
- Relief must be timely.
- Proper crop planning/land use planning should be done.
- Fodder banks should be created.
- Occupational diversification should be made available.

Disaster management has presently evoked a methodological approach that focuses on systematic observations, their analysis and dissemination of likely events to

structure informed application of resources in time. The most critical goal of disaster management activity is to reach out to the people promptly in the remotest areas and reduce vulnerability to disasters. This calls for a multipronged strategy involving the government at various levels, international agencies, non-governmental organisations, community based organisations, and the panchayati raj institutions to put together resources and efforts in managing disasters.

The world over, any measure, be it preparedness, mitigation, relief or rehabilitation in the wake of disasters, is primarily regarded as the responsibility of the government. But despite the vast resources at its command and the power to take necessary steps, due to the range of activities involved, the government needs to involve other key stakeholders in this exercise. While long-term preventive and preparedness measures are taken up, the unprecedented nature of the disasters calls for nationwide response mechanisms with clear-cut assignment of roles and functions by various institutions at the central, state and district levels. This, alongwith other initiatives, forging efforts with international agencies, non-governmental organisations, panchayati raj institutions with emphasis on education and training, can go a long way in making a dent in disaster management in agriculture. To discuss issues of development in the area of disaster management in agriculture, National Academy of Agricultural Sciences (NAAS) organised a one day brain-storming session.* The role of the following was deliberated upon:

- a) Government of India;
- b) International agencies;
- c) Non-governmental organisations;
- d) Panchayati raj institutions and
- e) Education and training in disaster management.

Given below are the major recommendations which emerged from deliberations at this meeting.

Recommendations

- The importance of disaster management in agriculture was recognised and its further strengthening through a comprehensive disaster management policy by the Government of India providing a renewed focus on anticipatory preparedness, prevention and rehabilitation was strongly recommended.
- State government needs to be more proactive in handling disaster related issues leading to effective management in agriculture.

* NAAS organised a one day session on Disaster Management in Agriculture at New Delhi, on February 27, 2004 under the convenership of Dr. Panjab Singh, Director, School of Agriculture Sciences, Indira Gandhi National Open University (IGNOU), to critically examine all the pertinent issues comprehensively. The meeting was attended by concerned subject matter specialists, agriculture planners and administrators, social scientists, educationists, grassroot-level workers and representatives from international agencies and NGOs.

- In the context of National Calamity Contingency Fund (NCCF), the existing process of preparing a memorandum of state government, sending a team from central government, etc., should be reviewed, and made quicker and more convincing.
- The cropped area throughout the country is vulnerable to one or the other pest disease, insects and weeds, therefore development and implementation of an effective and regular pest surveillance system was recommended, which would continuously monitor pest activity through an exclusive network.
- A national plan for pest control should be established for development of regulations, regarding imports and exports of plant material, pest forecasting and damage assessment components, adoption of international pest management strategies, extension services to engage farmers' support and provide pest control supplies, and a training component to update and discover new methods of control. In affected areas, the contingency plan prepared by the Department of Agriculture to face any natural calamity should be put into action to bring relief to the farmers.
- Natural calamities and disasters have transborder causative factors and impacts, demanding collective and international preparedness and action.
- It was felt that networking of international agencies would go a long way for channelling multifaceted assistance ranging from pre-disaster, response, recovery and rehabilitation. The forging partnership should ensure immediate, medium-term and long-term livelihood interventions.
- Effective interagency and intercommunity communication and educating the stakeholders, help in facing and mitigating the calamity effects. Hence, linkages for experience sharing, database transfers, action plans and strategies should be put in place. It would also make the initiative cost-effective and timely.
- It was strongly felt that in addition to the technical and managerial skills in relation to disaster and related activities importance should be given to disaster management education also to provide knowledge to the learners on disasters preparedness, mitigation and rehabilitation; create awareness about effective disaster response in various emergency situations; equip the learners with tools for meeting emergency medical requirements; incorporate gender sensitive, empathy-based disaster management approach; and inculcate new skills and sharpen the existing skills of government officials, voluntary activists, professionals and elected representatives for effective management.
- Role of disaster management education and training have been emphasised in planning and implementation of disaster management strategies. The workshop recommended that the education should be designed to provide comprehensive knowledge on different types of hazards, disaster management techniques and impediments in the way of disaster reduction and should address to the community needs.
- The workshop recommended that the state agricultural universities should introduce, develop and launch a course on disaster management through multidisciplinary

approach and NAAS to be the nodal hub for disaster management in agriculture with focus on research, education and training.

- To empower people at grassroots levels, educational programmes, such as awareness- and application- oriented certificate programmes should be designed. The potential of open and distance learning system should be used to reach the masses.
- Disaster management in agriculture curricula must be developed and certified to establish joint standards of practice across the nation. This is necessary to ensure uniformity in standards of humanitarian and mitigation practices in the region.
- There is need to strengthen research support system to evolve continuous process of analysis, action/reflection which will help to decipher the gaps in disaster management plans. Towards this end, the institutions/universities may be encouraged to undertake the multidisciplinary research projects.
- NGOs and community organisations/bodies play an important role in disaster preparedness and management. There should be well coordinated network between NGOs, community organisations/bodies and the government, and also among NGOs themselves. Better coordination would result in wider reach and more comprehensive approach for disaster management.
- For dealing with location-specific coping strategies based on time-tested traditional knowledge, blended with modern science and technology should be included in training and education of disaster management in agriculture.
- Academicians in the universities and research institutions, and NGOs, who are already involved and working in the field of disaster management should be involved in converting a disaster into a new opportunity with improved technology inputs and application, and they should be encouraged for their active participation specially in disaster management in the field of agriculture.
- Promotion and protection of livelihood in agriculture and evolution of alternative livelihood strategies, were emphasised to improve the livelihood standards in rural society.
- The impact of agricultural practices on environment paving way for ecological disaster was identified with respect to disaster management in agriculture.
- It was observed and recommended that the rainfall regimes in the preceding post-monsoon season and summer must be taken serious note of, while assessing the situation likely to arise in the coming monsoon months.
- The workshop recommended that special meetings, at least two meetings, of *Gram Sabha* and *Gram Panchayat* should be held to manage disaster. These meetings are necessary to plan preparedness activities before monsoon, at least.

- Capabilities of PRI functionaries should be enhanced through education and training programmes in the field of agriculture and disaster management, which will help to develop welltrained self-help groups and community based organisations.
- The workshop emphasised that the village development committees should be formed and motivated to monitor and evaluate the works performed by PRI before and after disaster.
- There is an urgent need to make *Gram Sabha* fully operational to ensure regular meetings; effective contributions in planning and implementation; and identify local needs for disaster management in agriculture.
- Basic infrastructure and transport facilities should be provided to the panchayati raj institutions to help the residents in evacuation and providing relief and implementing disaster management and development programmes effectively.
- The importance of database communication and information sharing was fundamental to the decision support system and its further strengthening through geospatial information system (GIS) was strongly recommended. GIS can be used as decision support system to identify and integrating, monitoring and predicting hydrological hazards, which are the major environment risks for Indian agriculture. It is emerging as pioneering technology of great significance and may serve as a powerful tool in the development planning and governance, together with disaster management education.