CHAPTER VII
CONCLUSION AND RECOMMENDATIONS
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7.1: SUMMARY OF CONCLUSIONS

India has not yet wakened up to the call of natural calamities though the country suffers every year during floods, cyclones and droughts. The people work on adhocism and carry out fire fighting rather than having a well-planned system of managing the disaster. The NGOs need to be trained to come up for tackling such calamities. It has been conserved that at the drop of a hat armed forces are summoned to tackle the natural disasters. But in the states there is no such boards, which delineate clear-cut responsibilities to the earmarked persons for tackling such disasters.

In the end, we can say that culture of prevention should be adopted because development should be that which will protect us from calamity and not become calamity itself. So what can be done is to bring awareness among the communities to understand and prepare themselves for worst impact by giving them training so that they can mobilize self-help before rescue and relief reaches them.

Haveri district is one of the backward districts of the state and selected talukas in turn is more affected from the drought and flood talukas of the district. This is reflected in the unfavourable socio-economic and demographic indicators. The sex ratio is adverse and literacy ratio is lower. The industrial sector is also under developed. Thus, with rain dependent agriculture and under developed non-agriculture unemployment and poverty are distinct features of the study area as any other dry area in the country.

The selected villages drought and flood area reflect similar features, describe above. The infrastructure is under developed, irrigation is inadequate and common facilities are deficient. In general the smaller farmers bear more brunt of the drought and flood than the large farmers do. This has a
lot of implication for the structure of poverty in the rural areas. Farmers coping strategies against drought are not confined to activities during the drought periods. The farmers have developed their own coping strategies such as discussed above include drawing down reserves, postponement of expenditure, diversification of activities, entry of female and child labour, barrowing, sale of reserves, sale of assets and migration.

Recurring drought, floods, and cyclones in the study area have made the rural population extremely vulnerable. To minimize the losses in such exigencies, it is necessary that a system be created for increasing preparedness at all levels i.e. government, civil society and community. The coping mechanisms were able to sustain the poor people at marginal level (economically, ecologically, and geographically). Also the field level experience shows that hazard vulnerability is a part and parcel of interior Karnataka, and cannot be totally escaped. But household's vulnerability to various natural events can be managed and its effects can be reduced to certain extent. However, as people themselves have suggested, a long lasting response to drought is not temporary relief works but rejuvenation of natural resources especially water bodies. This would improve the ecological sustainability and incomes of the poor.

Apart from loss of human lives, natural disasters inflict severe damage to ecology and economy of a region. Space technology has made significant contribution in all the three phases, i.e. preparedness, prevention and relief of disaster management. With a constellation of both INSAT and IRS series of satellites, India has developed an operational mechanism for disaster warning especially cyclone and drought, and their monitoring and mitigation. However, prediction of certain events likes earthquake, volcanic eruption and flood is still at experimental level. Developments in space-based earth observation and weather watch capabilities in future may help refining existing models/approaches for prediction of such events and their management.
Watershed plays a key role in minimising depletion of natural resources, specially soil and water conservation. The main watershed development activities are split between the Ministry of Agriculture and the Ministry of Rural Area and Employment, and later put great emphasis on the employment generation evolved in the activities.

The General Insurance Corporation of India till would implement the new scheme, which is Bharatiya Krishi Bima Nigam. The new scheme is view the proposed extension of the scheme to all agricultural ventures, rather than crops done.

**Findings**

Allocation under central share and state share of calamity relief fund has been summarized below:

- The scheme of Calamity Relief Fund (CRF) is continued with contributions from the Centre and the States in ratio of 75:25.
- The CRF should be used for meeting the expenditure for providing immediate Relief to the victims of cyclone, drought, earthquake, fire, flood and hailstorm.
- Expenditure on restoration of infrastructure and other capital assets, except those which are intrinsically connected with relief operations and connectivity with the affected area and population should be met from the plan funds on priority.
- The State level Committee constituted under the existing scheme may continue to function and take all decisions related to the financing of relief expenditure subject to general guidelines issued by the Ministry of Agriculture.
The Scheme of NFCR should be discontinued, in view of the difficulty in evolving an unambiguous definition of calamity of rare nature, and the difficulty in providing adequate financial assistance to the States from the limited amount available in the Fund.

A national Centre for Calamity Management (NCCM) under the Ministry of Agriculture is established to monitor all types of natural calamities, including calamities of rare severity, without any specific reference from the Centre or the State Governments. This Centre should be empowered to make recommendation to the Central Government as to whether a calamity is of such severe nature that would call for financial assistance to the affected State over and above what is available in the CRF or other plan/non-plan sources.

Every State should develop an inter-disciplinary cadre under the Relief Commissioner comprising 200 to 300 persons who could be deployed for relief works on the occurrence of a natural calamity within the State or in any other part of the country.

A large majority of the people depends on agriculture which itself is primarily dependent on rainfall with hardly 16 per cent of its land area under irrigation in drought affected area and majority of around 53 per cent in flood affected area.

More than 70 per cent of the population of the sample households are engaged in agriculture with almost 35 to 40 per cent of them being agricultural labour.

Land area being unequally distributed, the drought of 2006-07 severely affected the people, especially the poor. Further the flood of 2006-07 also severely affected the all category of farmers.

Haveri district depicts a picture of regular shortfalls and fluctuations in rains received. In 4 out of 11 years, the rainfall was below normal and in
one year slightly higher than it. This only suggests the vulnerability of the farming community.

- The annual rainfall has been much fluctuating in Haveri district as compared to the state average. Agriculture being the predominant occupation 71 percent of people is directly depended on it. For the whole district, while decline in yield is to the extent of 50 to 80 percent, it is high as 50 to 90 percent in Hangal and Shiggoan talukas.

- A large proportion of small farmers crop is affected to a greater extent as compared to medium and large farmers. The overall crop area affected in the study area is 65.75 percent.

- The rain failure has definitely affected the crop prospects in the study region. It studied that the extent of suffering by the smaller farmers is higher in the study area. Thus the drought and flood has resulted in all around impoverishment through reduced income.

- The rural households are in practice of maintaining reserves of essential items of consumption, during the times of exigencies.

- In the study area, though many of them have maintained food and fodder reserves which are higher solely due to the vitality of livestock in their livelihood. It is noticed that during the distress, people postpone non-essential expenditure and probably save for meeting their essential needs.

- In the study area, the people have searched for alternative activities. The people diversify the income they get would be very low. But any way, the poor households adopt it as an adjustment mechanism.

- The drought compels the poor households to borrow and due to lack of credit absorption capacity they have to rely upon land lord and commission agents.

- Infact, when the borrowing once converted in to money terms small farmers in the area borrowed largest. It indicates that the distress drives the small
farmers into indebtedness. The study also reveals that the productive assets, which are predominantly sold, cripple the future income earning capacity of these households. The data simply suggest that the poors are further impoverished and made vulnerable due to a natural disaster like drought and flood.

➢ The farm households are compelled to migrate to far off places and for a longer period which increases the distress of the households. Especially more number of small farm households reported migration. Similarly migration from small farm households has remitted a major sum.

➢ The coping mechanisms to reduce natural vulnerability that were adopted by households in interior Karnataka provide them with greater flexibility to reduce hazard risk.

➢ The study consists one of the relief works such as ‘Food for Work Programme’. The maximum number of small farmers used to work in that programme because they used to be the main sufferers during the drought period.

➢ In drought prone areas, it should be our effort to evolve plans for maximising the water use and efficiency and conserve each drop of rainwater in the soil conservation system.

➢ During the five-year plans, improved the programmes implemented by achievements and targets. Soil and water management practices such tillage and seeding, weed control, compaction of deep sands, deep ploughing and use of brackish ground water, moisture conservation, rainwater harvesting and increase the agricultural production in dry land areas.

➢ DPAP, funds are shared between the central and state governments on a 50:50 basis. The DPAP programmes have been running for many years and there is not evidence that drought proofing has been achieved in any of the
DPAP blocks. The impact of DPAP programme has been summerised below:

❖ On account of the initial pre-occupation of the programme with rural works, the programme tended to lack an appropriate order of priorities. For instance in many areas excessive priority was given to roads even through at that stage of development, their contribution to drought mitigation in the concerned areas could not be considered significant.

❖ The available data on expenditure and physical performance show that there has been a sizeable deviation from the norms and yardsticks at the time of formulation of the scheme. Indications were that a large number of schemes would probably be left incomplete by the end of the fourth plan.

❖ It was understood that the central funds provided under the DPAP would be additional to the normal plan funds flowing in the districts concerned. This did not happen in practice.

➢ Since watershed development projects are land-based activities it is difficult to avoid that the landowners become the major beneficiaries. The watershed and village committees tend to be dominated by batter-off (male) farmers, usually from the dominant.

➢ In order to reach the poor it is necessary to take participation one step further and support the organisation of more homogeneous groups of poor people. (Self-Help Groups).

➢ The government needs to step up awareness campaign and also subsidies the premium rates.

7.2: RECOMMENDATIONS:

The following improvement points are suggested to reduce hazard vulnerability:
1. Some coping mechanisms of the poor are efficient in reducing hazard vulnerability e.g. late sowing of crop and use of resistant cultivars. These coping mechanisms should be supported by scientific crop research in order to reduce losses due to calamities extreme events.

2. As far as agriculture is concerned, the first and foremost aim should be to have a permanent solution instead of giving doles and reliefs which are a diversion from development as it does not add to the creation of permanent or durable assets.

3. Drought proofing should be accorded priority over drought relief. Skewed policies have led to the decay of traditional water harvesting structures in the state. The state had a network of more than 20000 community ponds which were used successfully to combat drought. However, poor maintenance and neglect has resulted in those ponds being ineffective.

4. The relief is confined to providing food, medicine and wage earning to rural household as well as construction of small dwelling units under Indira Awas Yojana for families living below poverty line. The feed requirement for livestock and seed for farming community remained totally neglected, which require immediate attention.

5. Intervention of governments, specialized NGOs, and local farmer/fishers community based organization initiatives like self help groups (SHGs) in this matter is crucial to for tackling hazard vulnerability effectively.

6. Policies must be designed not only to reduce instability in crop production but also to stabilize income/employment in drought and dry areas.

7. Water-harvesting techniques should be used to advantage in drought areas to conserve the available rainwater.

8. Priority in dry farming research should be accorded to the various water-harvesting techniques so that the limited rainfall in the dry regions is concerned and put to better use.
9. Water should be properly managed in summer to harvest good crops.

10. There is a need to make the credit system more flexible by providing the farmer with some risk cover and converting the crop loan into a medium-term loan during drought years. This will spread the burden of debt over a period of time, and enable farmers to avail credit facilities during the year that follows a drought year. In the long run, improved crop management practices derived from research efforts will hopefully reduce such risk.

11. Crop-loan insurance should be started in as many areas of the country as possible. General Insurance Corporation of India appears to be the most appropriate agency to undertake overall responsibility.

12. Small and marginal farmers may be charged a lower rate of premium by direct subsidy. Here again, if there is a choice a subsidising a lower rate of interest and a lower rate of premium, the case for the batter is stronger.

13. Watershed development projects should have a component of non land-based activities, specifically targeted at the poor.

14. Awareness needs to be generated the people above the government scheme pertaining to relief works.

15. The crop insurance scheme needs to widely published and the premium paid by the small farmers needs to be subsidised.

16. The implementation of the relief activities should be streamlined and more importantly people’s participation highlighted.

17. Drought monitoring and forecasting should be improved along with area specific techniques of production.

18. The policies of water allocation and water use planning in a project should be decided in consultation with farmers organisations.

19. The emphasis should be shifted at least partly from land based to biomass based activities and from privately owned lands to common lands. The
poor should get equal or preferential access to the usufructs from common lands.

20. Treatment of the watersheds should always start from above, both owing to ecological considerations and because more poor people tend to live here.

21. The soil and water conservation works on private lands should at least give the small and marginal farmers their proportionate share and they could be partly or wholly exempted from payment for inputs.

22. The strategies to mitigate the impacts of drought in the long term and effective responses to specific shocks have to be sensitive to differences in economic structure, resource endowment and prevailing economic circumstances. Policies are likely to be poorly calibrated if they are based on Africa wide or even more general prescriptions for drought mitigation.

23. Poverty alleviation programs are designed to reduce physical vulnerabilities and integrate mitigation components.

24. Governments popularize understanding and knowledge of hazard mitigation and provide technical options for achieving it.

25. Governments reward compliance with regulatory policies by households and communities.

26. Financial incentives are designed and implemented to encourage mitigation and attract private sector participation in mitigation investment.