

Chapter 9: Farmers in drought-prone areas

I. The special problems of farmers in drought-prone regions

Although drought is thought of as a natural phenomenon, it is often as much due to human intervention as it is caused by climatic factors. Along with natural factors like water deficiency due to low and erratic rainfall which are the prime cause, there are human interventions which aggravate the impact of low rainfall. These include widespread deforestation, the neglect of surface storage of water, the adoption of inappropriate high-water using cropping patterns, excessive exploitation of ground water, and sand-mining from river beds particularly in low rainfall areas.

According to the Irrigation Commission of India (1972) all districts with a normal annual rainfall of 750 mm or less, which experience 25 percent deficiency of rainfall in at least 20 per cent of the years observed, are considered as drought-prone districts. From the districts thus identified, those districts with assured net irrigation intensity of more than 30 percent are excluded from the drought-prone areas. Subsequent modifications by the central government have led to 11 districts in Andhra Pradesh being classified as drought-prone and one as desert-prone as per Table 1.

The agro-climatically classified drought-prone area in Andhra Pradesh extends from 30 to 40 percent of the geographical area. But when a drought sets in, rainfall scarcity conditions spread much beyond the desert or drought-prone areas. Thus, the area declared as suffering from drought frequently extends much beyond the drought prone districts. The declaration of drought takes into consideration the failure of rain and related manifestations resulting in scarcity, regardless of whether it is a region identified as 'drought prone' or not. Monsoon failure results in crop failure, shortage of drinking water as well as undue hardship to the rural and urban community.

Table 9.1: Drought-prone districts of Andhra Pradesh, 2003

District	Per cent Area Drought-Prone	Normal Annual Rainfall (mm)	Agro-Climatic Zone	Per cent Area Irrigated in Net Sown Area
Anantapur	100	494	Arid	15
Mahbubnagar	89	568	Semi-Arid	19
Kurnool	79	604	Semi-Arid	20
Cuddapah	76	646	Semi-Arid	42
Nalgonda	81	701	Semi-Arid	35
Ranga Reddy	37	721	Semi-Arid	23
Chittoor	68	835	Dry-Sub-humid	40
Prakasam	67	781	Dry-Sub-humid	41
Srikakulam	-	983	Slope (6 to 30 per cent)	50
Medak	-	813	Moist, Sub-Humid	23
Adilabad	-	1101	Moist, Sub-Humid	8
Khammam	-	1020	Moist, Sub-Humid	42

Source: D. Narasimha Reddy (2004)

The procedure for declaration of drought under the Famine Code 1950 involved, in addition to failure of rainfall, taking into consideration symptoms like the contraction of rural credit, growing petty crime, migration of people, movement of flocks of livestock in search of pasture, rise in prices of foodstuffs, abnormal unemployment and distress sale of valuable assets by the farming community. However, in the post-independence period there has been a change in emphasis from distress to loss of crop production.

The procedure for declaration of drought officially relies on the following criteria, although crop failure is usually treated as paramount: significant and prolonged deficiency of rainfall; steep reduction in the area sown and also heavy damage to standing crops; fall in the estimated yields of crops; fall in the supply

of grain and fodder, with rise in prices; fall in agricultural and non-agricultural wages; rise in unemployment; and migration in search of employment.

The current procedure for declaration of drought is *ad hoc*, requiring the concerned District Collector to initiate assessment of drought conditions. This sets in motion a bureaucratic process, through the State Relief Commissioner, leading to the declaration of 'drought' affected areas. On this basis, relief is sought from the central government, which in turn dispatches expert teams to assess the 'loss' of crop production and the extent of scarcity conditions, and accordingly recommends some financial assistance.

This has created a dual approach to drought. On one hand, the technical exercise of identifying drought prone areas involves drought-proofing or drought mitigation programmes, which assume some degree of semi-permanence. On the other hand, the *ad hoc* policy of declaring drought affected areas leads to periodic relief measures, which are typically put in place without any link with the drought mitigation programmes. Both of these need to be integrated to be more effective.

Besides soil conservation, green cover and afforestation, one of the major components of drought-proofing in semi-arid areas is moisture conservation through rain water harvesting and groundwater conservation so as to prevent over exploitation of limited resources. However, as seen in Chapter 5, in spite of the Drought Prone Areas Development Programme (DPAP), instead of improvement in the water balance and conjunctive use of tank based surface water and ground water, there has been growing disjunction in the water resources. Neglect of tanks which harvest rain water has been associated with growing reliance on well irrigation. And the incidence of droughts has increased. This suggests that it is necessary to move *ad hocism* to a comprehensive policy with statutorily supported institutional framework. This must be combined with short-term institutional statutory responsibility for drought relief.

It must be recognised that farming systems have changed in drought prone areas, with a tendency for farmers, including small and marginal farmers, to shift from traditional cereal crops to high-input, high-value commercial crops. For these changing aspirations, there has been no corresponding improvement in institutional support and even a reduction in such support, as outlined earlier in this Report. With the changing cropping pattern, farmers in dry regions are exposed to high risk even when the season is normal. With the frequent occurrence of droughts, their risks are compounded. Therefore the social cost of drought, which is very heavy and growing, has shifted substantially to the small and marginal farming community because their cropping pattern has become more water-dependent, and unlike larger farmers they are less able to bear substantial risk.

Farmers in drought-prone areas of Andhra Pradesh face special problems related to the following: poor resource endowments including poor soils, degraded forest and low/untimely rainfall; frequent and often consecutive crop failures due to drought; lack of assured irrigation; lack of alternate livelihood opportunities such as dairying, poultry, etc.; lack of adequate wage employment; generally underdeveloped public facilities, implying lack of access to health facilities even at primary and secondary levels.

It is true that there is hardly any break-through in research on dry land crops and their capacity to conserve moisture or increase productivity. But other technical knowledge which would mitigate adverse conditions in such areas does exist, and with regard to these, it is more a failure of the extension system and lack of infrastructure support which has deprived farmers of protection. Knowledge in several important areas is available, such as that relating to long-term mitigation measures like moisture conservation and drought-proofing through watershed management, the conjunctive use of harvested surface water along with ground water, appropriate cropping patterns that would minimise

water needs and the requisite knowledge for drought-preparedness planning. Technological improvements make it possible to network information on drought forecasting, linking with phenomena like El Nino, monitoring the onset and progress of rainfall and facilitating information dissemination. All these make it more possible to engage in effective drought management through a systematic policy and accountable institutional machinery.

II. Recommendations

1. A special sub-committee of the Agriculture Mission should assume central responsibility encompassing all levels of administration for dealing with the problems of farmers of the drought-prone regions.

2. Development of any new surface and canal irrigation systems should prioritise the drought-prone regions. The attempt should be to ensure that these regions reach a minimum level of assured irrigation for 40 per cent of the cultivated area.

- In inter-basin transfer of river water, priority must be given low rainfall low irrigation areas.
- Tank restoration must be undertaken on a mission mode in low rainfall low irrigation areas.
- There must be incentives to conserve water, and drip and sprinkler systems should be provided at 90 per cent subsidy to farmers cultivating less than 30 acres of dry land, with first priority to small and marginal farmers.
- The conjunctive use of water should be stressed through local planning agencies.

3. The SLBC should come up with a specific credit policy for drought-prone areas, which should incorporate the uncertainties of production and consider possibilities such as waiver of interest and easier terms and longer periods of

repayment. should be a policy focus, and special attempts should be made to ensure that credit provision norms are met and exceeded as far as possible in the drought-prone areas. The policy should include credit provision for diversified livelihood occupations that would improve the capacity of farmers to cope with natural calamities.

4. A special package of incentives is required for rainfed crops, in particular nutritious cereals such as jowar, bajra and ragi, as well as pulses. This would include provision of subsidised inputs, procurement and marketing, since farmers cannot be expected to go back to subsistence farming. Given the low shelf-life of most rainfed crops, it may be necessary to think of local distribution using the existing public programmes. The basic thrust must be to create incentives for farmers to produce these crops by ensuring a high MSP and to encourage consumers to buy the produce through low prices in the Public Distribution System. This will require the active intervention of the state government agencies in procurement and distribution, using credit which is available for the purpose with the RBI.

6. Research and extension services are especially important for dryland farming, which has been neglected in this respect until now. There must be major public emphasis on research relevant for dryland crops, such as increasing the shelf-life and marketability of rainfed cereals, encouraging the development of dryland cotton and other seeds, etc. Extension services must be used to disseminate these results as widely as possible.

7. A land use policy must be formulated and implemented for the drought-prone areas. This may include:

- A time-bound plan to bring a substantial part (say half) of the cultivated area under multiple rain-fed tree crops such as mango, sapota, tamarind, guava, custard apple (seetaphal), etc., with adequate incentives and marketing support.

- Dairy and livestock development, with affordable fodder, adequate veterinary facilities, marketing support etc.
- Development of other (possibly new) crops and products that would also seek new markets, such as apiculture for honey production.
- Afforestation.

8. Employment programmes are especially important in the drought-prone areas. The Employment Guarantee Scheme can be used for intensive afforestation and development of grasslands.

9. The promotion of agro-processing industries should be a policy focus in these areas especially, by providing infrastructure, technological and marketing support, storage facilities and credit for such initiatives.

10. There should be large-scale training of local youth in various skills, so as to encourage a shift out of agriculture for a substantial part of the population.

11. Administrative support systems are required for those forced to migrate out of drought-prone areas and their families. These should include seasonal hostels for children whose parents have migrated, enrolment in the ICDS and other nutrition programmes, enrolment in schools including mid-day meals, entitlement to the Public Distribution System for food, entitlement to the public health system, crèches, etc.