CHAPTER - THREE

CHAPTER III

A SYNOPTIC REVIEW OF THE LITERATURE ON DROUGHTS .

III.1 FAMINE AND DROUGHT : A BLURRED DISTINCTION BETWEEN THE TWO .

A vast amount of literature on drought in the form of studies undertaken by the government and private agencies and also by some individual scholars published either in the form of books or articles ,is being made available in the recent past.The pouring in of the literature on droughts will continue as long as droughts will remain a chronic feature of the Indian economy and the global economy as well .However , for an individual researcher it is quite difficult to go through all the literature covering various aspects of droughts- such as their impacts on the economy and the implications for the policies to be adopted to ameliorate the scarcity conditions. Here we propose to take a very brief review of the common features of drought and its policy implications.Though our main concern is to highlight the problems faced by drought prone areas,we make an attempt to draw a subtle distiction between the words famine ,and drought ,of which the word drought has gained a wide currency in the discussion of the scarcity conditions in regard to agricultural output caused by failures of monsoon.Before we dwell on ,rather in details ,on drought we give a passing reference to the meaning of the word 'famine'

3.2 which was in current discussion before the beginning of post independence period.The dictionary meaning of famine is the 'extreme scarcity of ...food in a district or a region or even in a country.The another implication of the word famine is that there is a starvation of the vast majority of the population of and there is some sort of heavy toll of human population in that particular region or a country.In the past discussion of the occurance of famines and its effects in terms of starvation and consequent deaths due to scarcity conditions prevailing on food front was the main thrust of the analysis of famine.The famine itself was caused not necessarily by the failure of the monsoon ,but by heavy floods and locusts.The central feature of famine was that the food was not available to population in adequate quantity in famine affected regions or areas. The ,then prevailing conditions in famine affected regions at different times got intensified in terms of starvation and deaths owing to the lack of adequate transportation infrastructure between famine affected areas (the deficit areas) and the surplus areas. During the times of famine ,the local population especially the agricultural population could not move from their respective areas to another regions for one or the other reason and also due to some other institutional rigidities.The severity of the famines in the past ,rather of high degree in scarcity hit areas was caused by above mentioned factors .

3.3 III.2 THE WORD DROUGHT AND ITS CONNOTATIONS .

The currently used word 'drought' and its equivalent word 'drouth'(rarely used) which means dryness, lack of moisture, continued dry weather and want of rain. Where irrigation infrastructure is scanty ,dry farming is practiced widely and is subjected to frequent droughts.The consequence of drought is the failure of the crops as a result of which there are scarcity conditions in respect of water,food ,fodder.The droughts are mainly caused either by a complete failure of the monsoon during the two important seasons viz. sowing season and the critical season of growth of the crops.So the drought conditions are asociated with the lack of sufficient amount of moisture leading to wither a blanket or partial failure of the crops in a particular region .There is therefore,an intimate relation between the supply of water and the scarcity condition in respect of agricultural production .The only common factor in both famine an drought is the scarcity of agricultural production, especially of foodgrains production.But the effects of both might be similar ,if a package of measures for ameliorating scarcity condition is not adopted.Now a days much more attention is being given to alleviate the scarcity conditions, permanently rather than temporarily. In the past the emphasis was on short term measures, rather than on long term measures as at present .So it is not necessarily true that the droughts are associated with the prevailence of

3.4 starvation ,and consequent deaths in drought affected areas as in the past. This distingushing characteristic of drought from famine has been owing to the adequate development of transport and communication infrastructure and rather high degree of awareness on the part of the government agency as to the urgency and need for adopting drought relief measures immediately .One can therefore see a drought prevailing in one region without its population suffering from its ravages . Definition of drought is complex and controversial ,notwithstanding As a result there cannot be universally accepted definition of drought .The various discussions and discipline however have defined drought in their own fields of concern.We give in the following para the various classifications of droughts and their respective definitions .

III.3 THE CLASSIFICATION ,CRITERION AND DEFINITIONS OF DROUGHT.

The Central Water Commission of the Ministry of Irrigation ,(The Govt.of India) classified the droughts as follow :

i) Meteorological droughts :

It is a situation when there is a significant (more than 25 per cent) decrease from the normal precipitation over an area.

3.5 ii) Agricultural drought :

An agricultural drought may be defined as a prolonged abnormal moisture deficiency (Palmer -1965).It occurs when supply of moisture from rainfall or from the soil is insufficient to cater to the bare needs of the plants. Agricultural droughts are usually recognised during the periods when the crops are in greater need of water when rainfall and moisture together are inadequate to support the health and growth of the crops to maturity .Thus causing extensive soil stress and wilting of crops.

iii) Hydrological drought :

A hydrological drought occurs when there is marked depletion of surface water and consequent drying up of reservoirs, lakes ,streams and rivers etc. ceasation of spring flows and fall in ground water table .A hydrological drought is also defined as a drought when the runoff is less than 75 per cent of the normal runoff.

iv) Economic drought :

An economist views an economic drought from entirely different angle. He defines an economic drought as a situation when the production falls below expectations.

Inspite of these definitions ,various authorities both in India and abroad have given following definitions of

3.6 drought. A very popular and widely accepted definition of drought is 'dryness due to lack of rain ' Tannehil (1947) states that drought relates to that class of phenomena known as " spells of weather ".In regions with adequate rainfall the word 'drought ' may be applied to a period with less or no rain.Quite often droughts are discussed in terms of deviations of actual rainfall from the normal.Hort ,for example says that in the humid and semi arid climate ,droughts do not result until annual precipitation is as low as 80 per cent of the mean. In the recent "Glossory " of meteorology drought has been defined as "period of abnormal dry weather, sufficiently prolonged for the lack of water to cause serious hydrologic imbalance i.e. crop damage ,water supply shortage etc. in affected areas ". It is further stated therein that the term should be reserved "for periods of moisture ,deficiency that are relatively extensive in both space and time ". Thornthwaite (1947) considers drought as a period of dryness , that is ,want of rain or water ,specially such dryness of weather or climate as affects the earth and prevents growth of plants . Lexican Universal Encyclopedia views drought as "extended periods of abnormally dry weather characterised by below average levels of precipitation and humidity and above average levels of temperature insolution and wind.

III. 4 CRITERIA OF DROUGHT

The Irrigation Commission which went into question of

3.7 adopting a suitable criterion for defining a drought ultimately had to rely on the criteria of Indian Meteorological Department (MID) which defined drought as a situation occuring in an area in a year when the rainfall is less than 75 per cent of the normal.Whenever 75 per cent of the normal rainfall is not received in 20 per cent or more of the year the area is said to be a drought.Whenever this probability exceeds 40 per cent of the year ,the area is said to chronically drought area and whenever the deficiency of rainfall is above 50 per cent of the normal ,it is said to be severe drought area. The Irrigation Commission (1972) also relied on the statistics of famine/scarcity and revenue remission granted during years of drought.

National agricultural commission (1976) in its report defined drought as an occasion when a rainfall in a week is half of the normal or less.When the normal rainfall weekly is five mm or more.The agricultural drought is a period of four such consecutive weeks during the rest of the year.According to this criteria drought can occur in two ways -

i) due to rainfall less than 10 mm. in a month.

ii) due to absence of rainfall or zero rainfall,in a period of four consecutive weeks.

III.5 DROUGHTS IN MAHARASHTRA .

The Maharashtra state department of agriculture delineated 7 agroclimatic zones in the state ,taking the

3.8 district as a unit .This is based on a study of rainfall data types of soil ,types of crops grown ,topography etc.Some districts like Ahmadnagar and Solapur have been chronically subjected to the hazards of the drought .During the post-independence period, Maharashtra has suffered from severe droughts in 1952-53 ,1965-66 ,1970-73 and 1985-87. Before independence the droughts did occurred roughly after 7 to 8 years.And spatial drought occurred after every two to three years.Even today there is no change in it.Despite the widespread droughts occuring after every 7-8 years ,the spatial droughts , here and there have become a chronic feature of the Maharashtra's rural economy. In what way ,the droughts had been a chronic feature of Maharashtra, even before the formation of Maharashtra state in the year 1960 ,can be understood by looking at the following schedule quoted below from Sukhatankar Committee report .

Even during the post Maharashtra formation period (1960-61) the extent of the drought in terms of villages affected by droughts , has been estimated by the same committee.

From 1960-61 onwards we can roughly say that number of villages affected by droughts has been increasing .The total number of villges affected in each year given in Table No.III.2 .

3.9

TABLE NO.III -1 .

List of drought affected districts of Maharashtra .

(1946-47 to 1959-60)

Sr.No.	Year	Drought affected districts .
1	1946-47	A.Nagar , Solapur , Satara , Nasik , Jalgaon.
2	1947-48	Satara.
3	1949-50	Nagpur , Aurangabad , Osmanabad .
4	1950-51	Kulaba , Satara , Bhandara , Chandrapur.
5	1951-52	Sangli , Dhule .
6	1952-53	Solapur , Satara , Sangli , Nasik , Dhule , Jalgaon. Bhir , Bhandara .
7	1954-55	Solapur , Bhandara .
8	1955-56	Nagpur .
9	1956-57	Nasik .
10	1957-58	Sangli , Nasik .
11	1958-59	Sangli , Nasik .
12	1959-60	Nasik , Parbhani , Aurangabad , Buldhana.

Source : Sukhatankar Committee Report . (1973)

3.10

TABLE NO .III -2 .

YEARWISE NUMBER OF DROUGHT AFFECTED VILLAGES .

(1960-61 to 1981-82)

Year	Number of drought affected villages	Year	Number of drought affected villages .
1960-61	208	1971-72	14,695
1961-62	4,960	1972-73	29,818
1962-63	784	1973-74	9,686
1963-64	1,225	1974-75	4,317
1964-65	1,144	1975-76	1,438
1965-66	16,151	1976-77	680
1966-67	7,040	1977-78	1,094
1967-68	4,083	1978-79	7,042
1968-69	962	1979-80	31,117
1969-70	2,026	1980-81	8,115
1970-71	22,992	1981-82	2,664

Source : As in Table No.III-1 .

3.11 Since 1982-83 ,though the actual number of drought affected villages districtwise is not available ,but the number of drought affected villages in Vardha and Bhandara districts ,though these districts have not been considered as drought prone districts , are given below .

TABLE NO . III-3 .

THE NUMBER OF DROUGHT AFFECTED VILLAGES IN VARDHA & BHANDARA DISTS.

YEAR / DISTRICT	1982-83	1983-84	1984-85
VARDHA	305	1156	1126
BHANDARA	809	N.A.	1741

It can be observed that in these two districts also the number of villages subjected to droughts has been increasing in recent years.If this is the condition prevailing in these two districts then one can simply guess the severity and extent of droughts in terms of number of villages affected in Western Maharashtra and Marathwada regions . In the year 1986-87 the government declared 40,211 villages as drought affected , the same number was revised to 24,000 and above ,

3.12 so from the above statistical evidence we conclude that the drought situation in Maharashtra could not be considered as the phenomenon that takes place intermittantly but constantly occurring phenomenon.Even one can find a large number of villages having been gripped by the droughts even in the years considered to be agriculturally good years .For instance the years 1973-74 and 1981-82 were not considered as drought years. But in those years drought affected villages ranged between 2.2 per cent to 25 per cent of the total villages .During the last 25 years the government was forced to appoint three drought commissions ,that itself could be taken as an evidence of the extent and severity of the drought in Maharashtra. Sukhatankar committee has pointed out that there were 87 talukas under chronic situation of drought .According to some study groups and scholars ,this number may range between 100 to 125 talukas.

Besides , the information in regard to the actual number of drought hit population is available .During the post independence period too ,a large number of population became subject to the drought.Even today in case of widespread drought 30 to 40 per cent of the population suffered from droughts. If we take into account the fact that droughts mainly affect the village population , then in the widespread droughts half of the rural population of Maharashtra suffers .In the year 1982-83's drought about 50 lakhs people were under the grip

3.13 of drought .After that the situation with regard to the subsequent drought has been given in the table that follows.

TABLE NO. III-4

THE NUMBER AND PERCENT OF DROUGHT AFFECTED POPULATION .

Year	Drought affected population (in crores)	Total number of population (in crores)	%of 2 to 3	Rural population (in crores)	% of 2 to 5
1	2	3	4	5	6
1965-66	1.30	3.96(1961)	28	2.94	44
1970-71	1.88	3.96(1961)	47	2.94	64
1971-72	1.12	5.04(1971)	22	3.47	32
1972-73	2.00	5.04(1971)	40	3.47	58
1986-87	1.56	6.28(1971)	25	4.80	38

Source : As in Table No. III-1 .

From the foregoing discussion we arrive at the conclusion that the frequent occurrences of droughts in

3.14 Maharashtra has become a constant feature.The number of population being affected by drought has been increasing year after year.The most hard hit population belongs to rural Maharashtra.The measures adopted by the government have not been so effective in preventing the occurrence of droughts and in reducing the extent of droughts .Therefore, we feel that the problem of drought will have to be tackled on warfooting by simultaneouly implementing the short and long term measures.For that larger budgetary resources of government of Maharashtra will have to be allotted for long term measures like ,major irrigation projects and command area development programme .Since a critical review of measures adopted by the government of Maharashtra being outside the scope of the present study ,we do not make an attempt towards that end. We,however ,going to review critically the measures adopted and implemented under DPAP in Solapur district ,the main target area of the present study in chapter No.V .