

Gujarat faced three consecutive droughts and the drought of 1987-88 was the worst in the century. It called for a response not hitherto contemplated and taking an overall view of the emerging situation. State administration responded to the situation in a befitting manner. By "befitting", is meant a manner gratifying to the target group, to the clientele of the stakeholders. The stakeholders are the people in distress, the small and marginal farmers, cattle breeders, infirm and destitutes, pregnant women and nursing mothers, children and the villagers in remote areas experiencing drinking water difficulties of a severe intensity. It is this target group, which had to be assisted to combat the situation.

1.2 Under the Chairmanship of the Chief Minister, a High Powered Action Group was constituted to review and oversee the relief operations in Gujarat. Regular meetings of the group were held. A Committee of Secretaries under the Chairmanship of the Chief Secretary was also set up to review the performance of various departments in implementation of the check lists sent by the Prime Minister and Government of India (GOI). The State Government also placed one Minister as in-charge of one or two districts to assess and guide relief operations in the assigned districts.

1.3 Under the Chairmanship of the Chief Minister, a State Level Relief Committee was constituted. It consisted of Cabinet Ministers, Leader of Opposition in the State Legislative Assembly, former Chief Ministers of the State, leading social workers, representatives of Non-Government organisations (N.G.Os) and senior officials of the Government. The District and *taluka* Relief Committees were already in existence. They were further invigorated by induction of Leader of the Opposition in District / *Taluka Panchayats*, Chairman of District / *Taluka* Social Justice Committees and delegates from a *Taluka* to District *Panchayat*.

1.4 A full-time senior officer of the rank of Chief Secretary to Government designated as Principal Secretary and Commissioner of Relief was appointed to supervise and coordinate relief administration. Revenue Minister who was in-charge of relief operations maintained an open house approach in which he kept open the continuing dialogue with M.Ps., M.L.As., District and *Taluka Panchayats* Presidents on the status of relief operations in the State. Feedback received in the open house became the basis for policy measures and action-oriented programme.

1.5. The efficient drought management in the State was due to the close rapport between the political and the bureaucratic channels of administration. At the bureaucratic level Commissioner of Relief effectively coordinated relief operations of a large number of Departments. He also supervised the relief operations at the District level, a cutting edge level of all relief activities. The rapport that could be established was something which was intrinsic and emanated from the work culture and ethos developed in the administration over a period of years.

1.6 It has been a cardinal principal of State policy that all resources financial, material and manpower have to be pooled and channelised towards one objective of providing succour to those in distress and to mitigate their hardships. In retrospect it could be said that there was total and undivided commitment to this objective. There was no half hearted attempt or diversion of activity to belittle the gravity of the situation.

1.7 The State Government's approach to the problem of drought management was the one of Management by Objectives (MBOs). For this, an exercise as to what were the felt needs in a drought year had been undertaken and each of the identified felt need became the key area of operation.

Employment Generation

2.1 The first key area to tailor to the felt needs was in the sphere of employment generation. Over a period of years, the State Government had followed a policy of providing employment to those in distress on account of drought situation. This was the third consecutive drought. In two previous droughts, massive expenditure (Rs. 152 crore in 1985-86 and Rs. 106 crore in 1987-88 droughts) was incurred towards employment generation programme. Programme-wise expenditure on employment generation in Gujarat in 1987-88 may be seen in Figure 1.

2.2 During the drought of 1987, the State Government adopted new management practices. The State Government took a decision to regulate admission to relief work. The State Government did not take a view that only number of persons irrespective of the number of members in a family, would be eligible for employment on relief works. State government's approach to this problem was with an open mind and having regard to the size of a rural family, as per demographic census data, a graded number of persons were admitted to relief works. For a family of 6 persons, 3 persons were eligible for admission. In the event of members in a family being more than 6, for every additional 3 members one person was admitted.

2.3 The State Government decided that in addition to the gang book which was being issued to the labourers, a photograph of the identified workers should be taken at Government cost and it should be pasted on the first page of the gang book. This was with a view to prevent impersonation in relief works.

2.4 The State Government also decided that in case the identified member of a family was unable to report for work on a given day for reason beyond his control due to illness or social and personal obligations another able-bodied member of his family was admitted to relief work with the previous sanction of the Supervisor-in-charge of work.

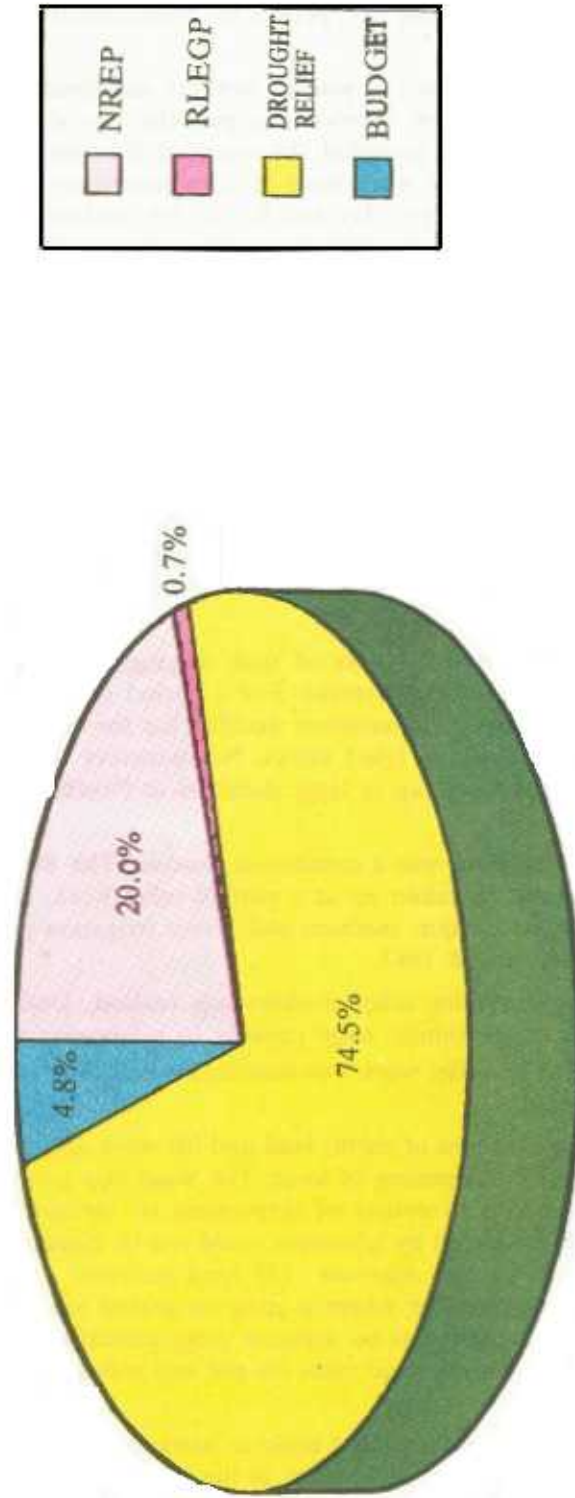


Figure 1: Programme-wise Expenditure on Employment Generation in Gujarat, July 1987 to June 1988.

2.5 With a view to encourage family planning among workers on relief works, the State Government decided that a labourer undergoing operation for family planning would be eligible for paid holiday and cash assistance and during the period of confinement another member of the family was admitted to relief work.

2.6 The State Government took a special care of women workers and directed that pregnant women be given light work. A pregnant women on a work was permitted to absent herself for 3 weeks before delivery and 3 weeks after delivery provided she attended the relief work in the area for a period of 2 months or had been on specific work since its commencement. She was also eligible for dependence allowance at the rate of Rs. 5 per day and Rs. 25 for medical assistance. While issuing this order State Government clarified that the benefit accruing to a women worker under similar scheme of Labour Department was not duplicated. The procedure for an issuance of eligibility certificate in this regard was also simplified

2.7 With a view to encourage large number of soil conservation works, the State Government decided that the wage rate payable on soil conservation work taken up as part of relief work was revised upward and brought at par with the wage rate on irrigation and road works.

2.8 In spite of revision of wage rate, the soil conservation work could be taken up only if the cultivator in whose field the work was to be undertaken was willing. A formal consent was not necessary in a drought year in terms of the relevant provisions of the Land Improvement Act. The State Government decided that the cultivator in whose survey number soil conservation work was to be taken up would be eligible for 100 per cent subsidy instead of 75 per cent decided during the previous drought of 1986-87.

2.9 To provide employment, the traditional works of tank digging, tank deepening and even soil conservation could not provide adequate employment. For a period of 8 to 10 months, rural work force had to be kept engaged. The State Government decided for the first time in 1987 to classify the digging of new wells in private fields as relief works. No monetary or numerical limit was laid down. The digging of new wells was taken up in large numbers in Panchmahal, Rajkot and Amreli districts.

2.10 The search for providing useful work was a continuous process. The State Government decided that desilting of tank beds could also be taken up as a part of relief work. As directed by Planning Commission, earth work on identified major, medium and minor irrigation projects were also taken up on crash basis, during the drought of 1987.

2.11 In 1985-86 drought, the wage rate for relief workers was revised. Under the scheme of wage rate followed by State Government, maximum wage payable to a labourer was fixed at Rs. 11 per day. Output expected of a labourer on relief work was suitably revised. The wage was linked with the output.

2.12 In addition to the wage for excavation of earth, lead and lift were also paid. Labourers also got rest day allowance and allowance for sharpening of tools. The wage rate adopted in 1985-86 drought was marginally changed in as much as in course of inspections of various kinds of works, it was noticed that certain kind of earth excavated by labourers could not be classified into (1) soil and soft soil (2) hard black soil, soft and average *murum* (3) hard *murum*. In course of one of the inspections, the team came across a situation where a gang excavated soil, soft soil and hard black soil. For these different kind of soil, there was no separate wage prescribed. The State Government decided for a classification of soil and fixed wage rates for soil and soft soil, hard black soil, soft and average *murum* and hard *murum*.

2.13 In a drought year, State Government supplied tools to workers reporting on relief works. The tools were issued to labourers by supervisor. A labourer at the time of his weekly payment would be eligible for allowance at the rate of 3 per cent of the wage earned as sharpening allowance and after closure of relief work the tools were to be recovered. It was experience of district officers that many a time the tools were not returned by the labourers. Since relief works were implemented in the State through District *Panchayats*, *Panchayat Raj samities*, the Legislative Assembly recommended that the cost of tools be recovered from the concerned *Gram Panchayats*. A situation arose where for no fault of its own the grants payable to *Gram Panchayats* had to be recovered/adjusted against the cost

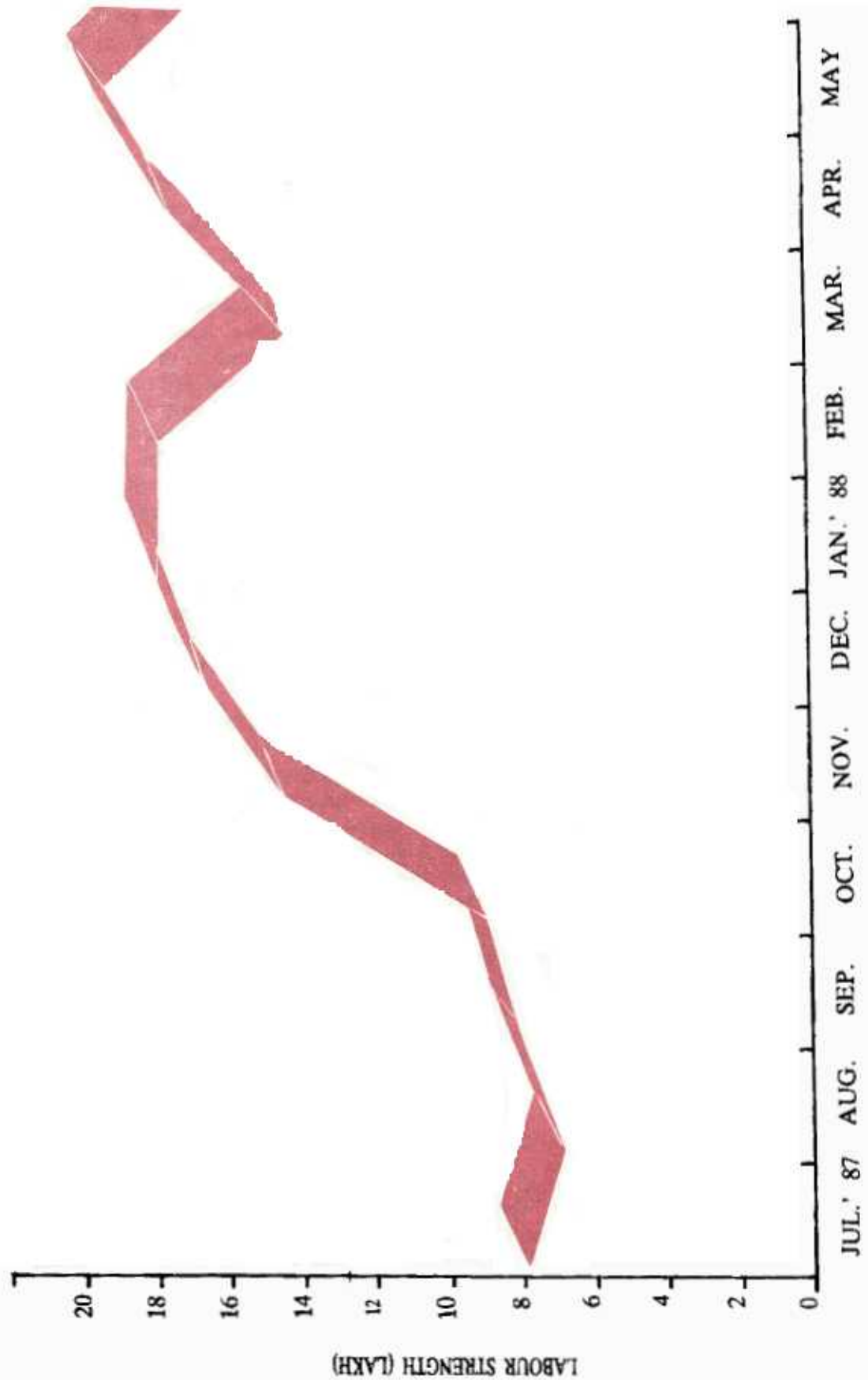


Figure 2: Monthwise Build-up of Labour Strength on Relief Work in Gujarat, July 1987 to MAY 1988.

of tools. The State Government decided in 1987 to give an option to a labourer to retain the tools after closure of relief work and during the period of relief work the cost of tools will be recovered from his as deposit in 5 instalments. In case the labourers wanted to return the tools, he could return the original tools and get back the deposit. In case he decided to retain the tools the deposit was adjusted towards the cost of tools. Thus, fair and equitable arrangements could be made for issuance of tools to labourers on relief works.

2.14 When a massive employment generation programme was organised a strict vigilance was required to be kept over the execution of works, particularly in the sphere of recording of measurements of work done by a labourer, classification of soil, which decided the rate of wage and the number of persons reporting for work. The State Government, during the last 3 drought years constituted 2 sets of Vigilance Squads. Administrative cells were set up at the State level. 4 such cells each headed by a Deputy Collector and consisting of a *Mamladar* and supporting staff was placed in-charge of specific districts. The Administrative Vigilance Cell looked into the administrative aspects of relief works, water tanker deployment and running of cattle camps. Another set of technical squads was also set up. 2 Such technical squads each headed by a Superintending Engineer and each supported by 2 Executive Engineers and 4 Deputy Executive Engineers were set up. The Technical Vigilance Squads inspected the works from the technical point of view namely classification of soil and measurement of work done. Similar Vigilance Cells were set up by Collectors at the district level. The composition of the cell at the district level was left to the Collectors. He was, of course, empowered to requisition the services of officers from all departments. The Vigilance Cells both at the State and at the district level inspected 28,669 relief works from October, 1986 onwards. In course of their inspection 3,838 cases of irregularities were noticed. Serious malpractices were noticed in a few cases and remedial action was immediately taken. From October, 1986 to June, 1988 action was taken against Muster Clerks, Supervisors, Deputy Executive Engineers and others as shown in Annexure-I. Thus, on the one hand State Government provided ample employment opportunities to labourers, gave adequate staff at the District and State levels, on the other hand the aspect of vigilance on the work being done was not lost sight of.

2.15 During the drought of 1987, as many as 34.81 crore mandays were generated. The peak period attendance of labourers on relief works was of the order of 22.42 lakh. Monthwise build-up of labour strength on relief works in Gujarat from July 1987 to May, 1988 may be seen in figure 2. The objective was to make a labourer earn his livelihood and hence timely recording of measurement and payment of wages was necessary. The State Government, placed large number of technical officers at the disposal of the Collectors to organise and supervise relief works in the districts. The technical staff which was placed at the disposal of the Collectors ever since 1985-86 drought, was continued. In addition, 2 existing divisions alongwith their sub-divisions from Irrigation Department and one division alongwith its sub-divisions from Roads and Building Department were placed at the disposal of District *Panchayats* to organise relief works in the district. During the drought of 1987, the State Government purchased 67 jeeps and all the new jeeps were placed at the disposal of the District *Panchayats* for relief works. The State Government committed all its resources of man, money and material for relief operations in the State. Monthwise mandays generated on relief works in Gujarat from July 1987 to June 1988 may be seen in Figure 3.

Drinking Water

3.1 The second key area was provision of drinking water to the affected population. Due to failure of monsoon during 1985-86 and 1986-87, Gujarat faced severe drought situations. To combat the drinking water supply scarcity, State Government prepared, approved and implemented Master Plans. During 1985-86, drinking water was supplied to 12,000 villages and 24 cities by various means at a cost of Rs. 86.72 crore including water supply to Rajkot city by Railways tankers. Similarly, during 1986-87, drinking water was supplied to 11,354 villages and 17 cities by various means at a cost of Rs. 46.50 crore. The details may be seen in Table 1. For the third consecutive year (1987-88), Gujarat had to face drought situation. Besides, for Kutch and Banaskantha districts, it was the fourth successive drought.

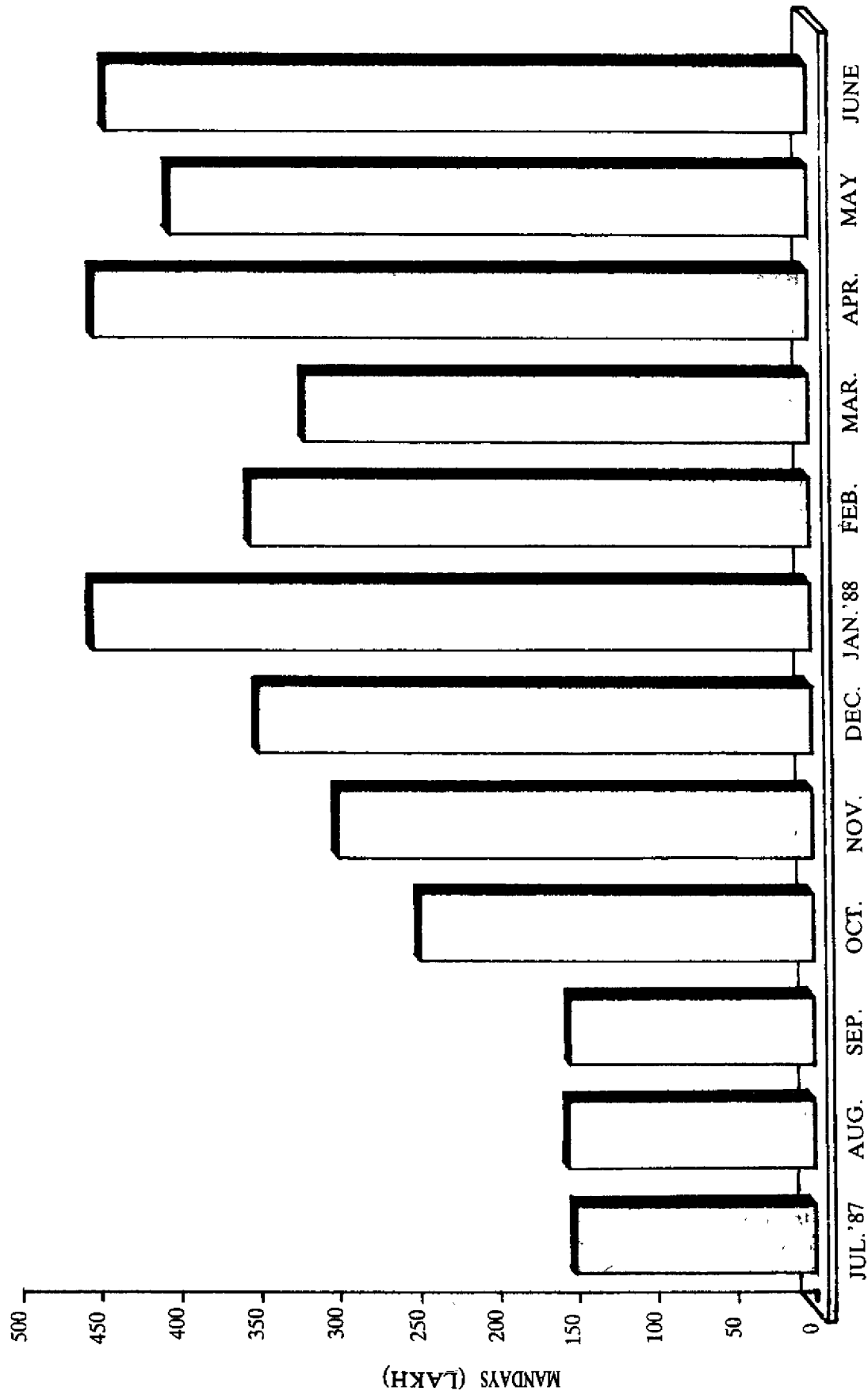


Figure 3: Monthwise Generation of Mandays on Relief Works in Gujarat, July 1987 to June 1988.

Table 1: Number of Villages / Towns Covered under Master Plan for Drinking Water Supply under Various Schemes in Gujarat, 1985-86 and 1986-87.

S. No.	Category	Master Plan 1985-86		Master Plan 1986-87	
		Number of Villages/ Towns covered	Expenditure incurred (Rs. in lakh)	Number of Villages / Towns covered	Expenditure incurred (Rs. in lakh)

Part I : Plan

1.	Drilling Bores 100 mm, 150 mm. dia Deep Tubewells	4479 (6612 bores)	2012	5228 (8125 bores)	1926
2.	Rural Regional WSS (new)	616	653	18	67
3.	Rural Individual Schemes (incl. NP)	124	585	104	255
4.	Rural Rejuvenation (Individual and Regional)	1044	985	919	439
5.	New Wells	633	220	277	95
6.	Urban Centres Reverse Osmosis	24	2191	17	1280
7.	(R.O.) Plant	9	106	—	—
8.	Procurement of Tankers, Rigs, and Equipments.	—	1083	—	—
		6929	7835	6563	4062

Part II : Non-Plan

1.	Deepening of Wells	3351	428	2967	253
2.	Tanker Supply	-	393	1841	335
3.	Conservation of Water in Reservoirs	-	-	-	-
4.	Water supply to Cattle Camps	-	-	-	-
		3351	837	4808	588

Part III : Total

Part I : Plan	6929	7835	6563	4062
Part II : Non-Plan	3351	837	4808	588
Grand Total	10280	8672	11371	4650

3.2 Most of the towns and cities depend on irrigation reservoirs for their daily water supply needs. Due to failure of monsoon, the replenishments in most of these reservoirs in Saurashtra and Kutch regions were practically nil. Irrigation dams like Ranjit Sagar and Sasoi, which are the sources of water supply for Jamnagar did not receive any replenishments. Similarly, dams like Hasanpur for Junagadh, Fodaraness for Porbander and Dholidhaja for Surendranagar-Wadhwan, had also practically dried up, even in the month of July 1987. Therefore as a precaution-

Table 2 : Districtwise Progress of Drilling 100 mm Dia Bores in Gujarat, 1st July 1987 to 31st July, 1988.

S No	Districts	Number of Bores Drilled	Number of Villages where Drilled	Number of Successful Bores	Number of Villagers where Bores Successful	Number of Bores where Hand Pumps Installed	Number of Villages where Hand Pumps Installed
1.	Ahmedabad	17	13	15	12	14	11
2.	Amreli	521	262	439	245	439	245
3.	Banaskantha	206	150	189	141	189	138
4.	Bharuch	754	468	712	451	689	439
5.	Bhavnagar	676	341	569	317	567	316
6.	Jamnagar	544	327	347	238	345	234
7.	Junagadh	1044	423	862	394	862	394
8.	Kheda	736	736	670	679	601	574
9.	Kutch	31	22	21	16	21	16
10.	Mehsana	7	7	7	7	7	7
11.	Panchmahal	3300	2044	2864	1843	2779	1800
12.	Rajkot	798	444	554	355	551	355
13.	Sabarkantha	1584	1110	1381	989	1264	915
14.	Surat	536	366	480	330	480	330
15.	Surendranagar	166	85	105	65	98	61
16.	Vadodara	1534	948	1379	844	1271	759
17.	Valsad	780	350	755	333	755	322
	Total	13234	8096	11349	7259	10932	6916

nary measure, the available water storage in all impounded reservoirs, except those situated in South Gujarat region, was reserved by the State Government only for drinking water purposes. The water budgets for such towns which depended on surface water reservoirs, were prepared and the behaviour of the same was monitored regularly, so as to sustain water supply to the urban population for longer period. Besides, water levels of these irrigation reservoirs, from where water was being drawn for cities and towns were monitored regularly to watch the withdrawal and losses of water.

3.3 To ease the drinking water scarcity, for 1987-88, a Master Plan amounting to Rs. 156.88 crore was prepared and approved by State Government. The GOI was approached for approval of Master Plan and sanction of financial assistance. The GOI sanctioned a ceiling of expenditure of Rs. 56.74 crore (including Rs. 10 crore for Bhadar water supply project for Rajkot, Rs. 4 crore for Machchhu-I water supply project for Jamnagar and Rs. 2.22 crore for Ahmedabad water supply project) upto 31st July, 1988. The State Government geared up its machinery to ease drinking water scarcity and implemented measures such as drilling bores and tubewells. Pipeline schemes, rejuvenation of water supply schemes, deepening of wells and running of tankers gave immediate relief to the affected area.

3.4 In the State, especially in the rural area, it was planned to drill more than 12,000 bores and to instal hand-pumps and power pumps to tap ground water for drinking purpose. Scientific locations of water sources were given the highest priority so as to tap potential ground water sources. Use of satellite imageries was also made in close association with Space Applications Centre for pin pointing bores. Geohydrological and geophysical investigations were also carried out for locating ground water sources. On account of scientific investigation for ground water sources, the failure rate of 100 mm diameter and 150 mm diameter bores was reduced considerably. Districtwise progress of drilling 100 mm and 150 mm dia bores in Gujarat from 1st July 1987 to 31st July 1988 may be seen in Table 2 and Table 3 respectively. All the rigs of Gujarat Water Supply and Sewerage Board and those available with Gujarat Water Resources Development Corporation were deployed for drilling operations. Besides, private rigs were hired to complete the drilling programme within stipulated time.

3.5 Pipeline schemes were implemented for sustaining water supply in many villages and towns of the State. A 22 Kilometre pipeline was laid within six weeks at a cost of Rs. 77 lakh, for drinking water supply from Nayka dam to Dholidhaja dam to sustain water supply to Surendra nagar-Wadhwan

Table 3 : Districtwise Progress of Drilling 150 mm Dia Bores in Gujarat, 1st July 1987 to 31st July 1988

S. No.	Districts	Number of		Number of Successful		Number of Pipe/Motor Installed	
		Bores Drilled	Villages	Bores Drilled	Villages	Bores	Villages
1.	Ahmedabad	10	10	9	9	7	7
2.	Amreli	33	32	26	26	26	26
3.	Banaskantha	23	23	20	20	20	20
4.	Bhavnagar	26	25	15	15	11	11
5.	Jamnagar	87	67	38	33	31	24
6.	Junagadh	76	60	46	38	37	36
7.	Mehsana	1	1	1	1	1	1
8.	Rajkot	56	55	28	28	25	25
9.	Sabarkantha	68	68	50	50	36	36
10.	Surendranagar	21	20	13	13	7	7
11.	Vadodara	19	18	15	15	10	9
12.	Valsad	1	1	1	1		
	Total	421	380	262	249	211	202

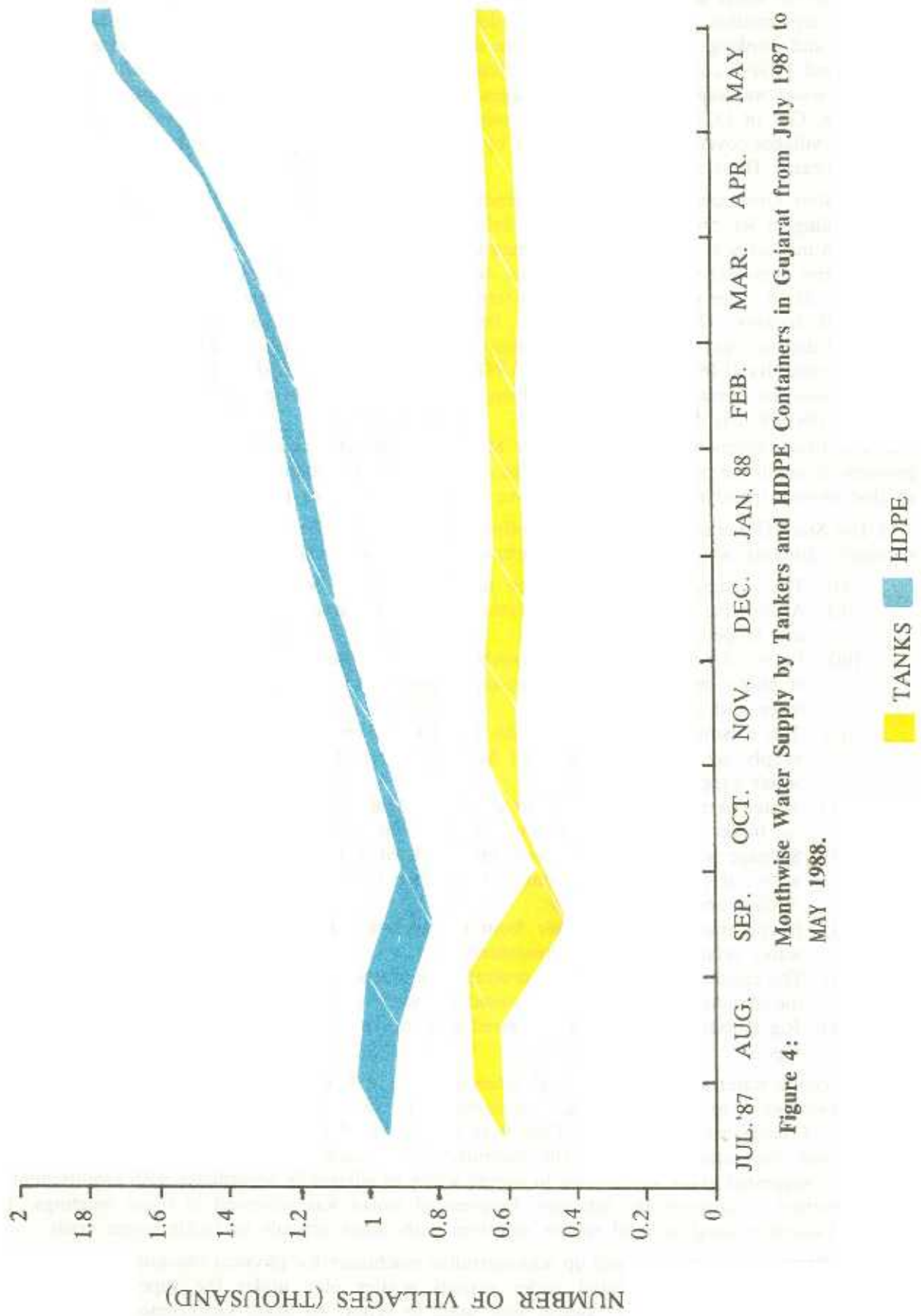
towns. Similarly, a 70 Kilometre pipeline from Machchhu -I dam was completed at a cost of Rs. 4.80 crore for supply of water to Jamnagar as well as Rajkot cities.

3.6 Besides, whatever the quantity of water was available in reservoirs had to be conserved so as to sustain water supply for a longer period by spreading water evaporation retardant chemicals. A novel experiment of compartmentation for reducing evaporation losses was implemented in Nayka dam for supplying water to Surendranagar-Wadhwan towns. A sizeable quantity of water was saved which would otherwise cost more than Rs. 1.50 crore if that much water was to be brought by road tankers. In addition to this, subsoil water of the basin of the reservoirs was also tapped.

3.7 In Rajkot, Jamnagar, Junagadh, Porbandar, Veraval, Surendranagar towns, in addition to the surface sources, a large number of hand pumps were provided to augment water supply to the population. Ground water sources like wells, bores and tubewells were developed for Junagadh, Veraval, and Porbandar, and for cities depending on ground water sources, the behaviour of ground water levels was also monitored. Districtwise progress of drilling deep tube wells in Gujarat from 1st July 1987 to 31st July 1988 may be seen in Table 4. Additional locations were kept ready for tapping the ground water.

Table 4 : Districtwise Progress of Drilling Deep Tube Wells in Gujarat, 1st July 1987 to 31st July 1988.

S. No	Districts	Number of Bores Drilled	Number of Successful Bores	Number of Bores installed with Pipe/Motor
1.	Ahmedabad	28	26	23
2.	Banaskantha	92	85	57
3.	Bharuch	1	1	1
4.	Junagadh	1	1	1
5.	Kheda	17	13	3
6.	Mehsana	70	70	53
7.	Sabarkantha	32	30	11
8.	Surendranagar	10	9	3
9.	Vododara	46	44	32
	Total	297	279	184



3.8 To ease the water scarcity, various measures such as drilling bores, deep tubewells, laying of new pipelines, rejuvenation of defunct schemes, deepening of wells and running of water tankers were taken up and drinking water was supplied to drought-affected villages. Monthwise water supply by tankers and HDPE containers in Gujarat from July 1987 to May 1988 may be seen in Figure 4. Drinking water was supplied to 13,328 villages, 22 urban towns and 36 *nagar panchayats* up to 31st July, 1988. Out of 13,328 villages, tankers were pressed into service for 2,677 villages. Districtwise details of villages covered for water supply by various measures up to 31st July, 1988 may be seen from Annexure II to Annexure XI.

3.9 The State Government incurred an expenditure of Rs. 115 crore upto 31st July 1988 against the GOI's ceiling of Rs. 56.74 crore upto 31st July, 1988. The works executed under Master Plan were short-term measures as well as long-term measures. An expenditure of Rs. 91.72 crore was incurred on long-term measures such as drilling bores, deep tubewells, wells, piped water supply schemes, etc. While Rs. 23.28 crore were spent on short-term measures such as deepening of wells and supply of water with tankers. The GOI had earlier fixed a ceiling of Rs. 1.66 crore for procurement of additional drilling rigs, which was subsequently raised to Rs. 2.97 crore up to 31st July, 1988. Out of Rs. 1.66 crore, Rs. 0.48 crore were paid to UNICEF for supply of 3 hydro fracture units. The number of villages/towns covered under Master Plan for drinking water supply under various schemes in Gujarat, 1987-88 may be seen in Table 5.

3.10 The basic objective of Drinking Water Master Plan was to sustain minimum supply of water in problem areas till the onset of monsoon. The emphasis was on medium-term and long-term measures so that money spend on the measures gave return for a longer period.

3.11 The State Government adopted the following strategy to take up the challenge of providing the minimum drinking water supply to the urban and rural area during the drought situation:

- (i) The existing deep sources were harnessed to the best possible extent;
- (ii) Alternative additional ground water sources were located through geohydrological survey and tapped;
- (iii) Teams of geologists and geophysicists were organised to fix up the locations on the basis of photo imagery maps and ground water survey to reduce the failure rate of drilling bores and tube wells;
- (iv) The existing water supply to the villages covered under regional and individual water supply schemes were sustained by the rejuvenation and augmentation of the existing water supply systems;
- (v) Water supplied through tankers and High Density Poly Ethylene (HDPE) tanks mounted on trucks and bullock carts where other means were not possible;
- (vi) Seepage water of surface reservoirs was harnessed wherever possible. Similarly, ground water of the reservoir basins after surface storage exhausted, was also harnessed by drilling bores in the basins;
- (vii) Evaporation losses of water from the surface reservoirs were minimised by adopting water retardant chemical treatment.
- (viii) The existing sources of urban centres were assessed and daily supply of water cut down to the minimum and alternative ground/surface sources were exploited and pinpointed; and
- (ix) Rig mobilisation plan was prepared to improve the output and monitor performance of rigs.

3.12 Per capita water supply figures of all cities included in Master Plan were collected every month and reviewed so as to ensure minimum per capita water supply. District Scarcity Relief Committees under the Chairmanship of District Collectors were formed at District levels to combat scarcity problem and take suitable measures. The committee comprised of MLAs and MPs of the district. This committee suggested plans and actions to supply water to villages in accordance with requirement. It was authorised to approve the schemes. Progress of works was reviewed in those meetings. The District Collectors used to hold review meetings with other officials to tackle water crisis.

3.13 The State Government geared up administrative machinery for physical checking and monitoring of water supply schemes executed under scarcity master plan under the supervision of Chief Engineer(Scarcity). This quality control unit used to report to State Government after physical

Table 5: Number of Villages/Towns Planned/Covered under Master Plan for Drinking water Supply under Various Schemes in Gujarat, 1987-88.

Sl. No.	Category	Master Plan 1987-88			
		Number of Villages/ Towns planned	Estimated Cost (Rs. in lakh)	Number of Villages/ Towns covered upto 31st July 1988	Expenditure incurred upto 31st July 1988 (Rs. in lakh)
Part I: Plan					
1.	Drilling Bores 100 mm; 150 mm. dia	7450	3003	7230	2763
	Deep Tubewells	(10917 bores)		(11247 bores)	
2.	Rural Regional WSS (new)	37	280	11	499
3.	Rural Individual Scheme (incl. NP)	146	780	150	637
4.	Rural Rejuvenation (Individual and Regional)	2039	2179	1670	1722
5.	New Wells	737	299	111	68
6.	Urban Centres	29	6166	22	3185
7.	Reverse Osmosis (R.O.) Plant	—	150	—	—
8.	Procurement of Tankers, Rigs, and Equipments.	—	1087	—	298
		10438	13944	9194	9172
Part II: Non-Plan					
1.	Deepening of Wells	2842	368	1515	—
2.	Tanker Supply	3071	1176	2677	—
				(June 1988)	
3.	Conservation of Water in Reservoirs	—	100	—	2328
4.	Water supply to Cattle Camps	—	100	—	
		5913	1744	4192	2328
Part III: Total					
Part I : Plan		10438	13944	9194	9172
Part II : Non-Plan		5913	1744	4192	2328
Grant Total		16351	15688	13386	11500

verification of works. Water levels and cubic content figures of irrigation and drinking water reservoirs of Saurashtra region were collected and monitored every fortnight so as to plan in such a way that the then existing water would last upto monsoon. For this instructions were issued to field officers and local bodies from time to time. Due to directives of the State Government it became possible to sustain minimum water supply to all cities and towns of Saurashtra region till the onset of monsoon. A High Power Action Group under the Chairmanship of Chief Minister reviewed from time to time the actions taken for implementation of Scarcity Master Plan, 1987-88.

Cattle Care

4.1 The third key area in drought management was the preservation of cattle wealth of the State. There is a provision in the scarcity manual followed over a period of years that in a drought year the State Government would procure fodder from one of the grass growing districts of the State and also the one- from Forest Department. The arrangement of procurement of fodder from Valsad, the only grass producing district in the State, could commence only from middle of November. However, the situation was grim due to absence of rain in large parts of the State right from July, 1987. In July-August 1987 there was not a blade of grass either in the surplus district or in the forest area in any of the Government depots. There was no natural growth of grass. Preservation of cattle wealth of the State was a serious problem which the State Government faced from the end of July, 1987.

4.2 During the drought of 1987, the State Government held a meeting of the Sugar Co-operative Mills in South Gujarat and requested them to agree to spare as much sugarcane as possible to be given to voluntary agencies engaged in cattle relief measures at a price agreed to. Here also care was taken to see that crushing capacity of sugarcane mills was not in any way reduced.

4.3 The question was still unresolved in as much as distribution through State Government agencies to about 12,000 villages critically affected at the point of time was fraught with many dangers. The State Government therefore, took a pragmatic decision that distribution of sugarcane need not be organised through Government agencies, but through the voluntary agencies. The State Government acted as a catalytic agent and decided to give subsidy of one-third of the price of the sugarcane plus transport subsidy to a voluntary agency distributing sugarcane at a price of 32 paise per tonne per kilometre. The State Government was aware that August to mid-November, was most critical period and during this period since fodder was not available, distribution of sugarcane was to be consciously encouraged. The incentive of subsidy in issue price to the needy agriculturists, cattle breeders and landless labourers and of transport subsidy was an innovative measure taken during the drought of 1987. During 1987-88, 1.10 lakh tonne sugarcane was distributed through voluntary agencies.

4.4 During this period whatever little grass was available from Valsad district (not more than 2,500 tonne) was also purchased from the Valsad Grass Utpadak Sahakari Mandali Limited. Having arranged to procure sugarcane through voluntary agencies from sugar co-operatives, the State Government considered it prudent to locate alternative sources of cattle feed. The State Government was alive to the fact that even after tying up arrangements with sugarcane cooperatives and N.G.Os., the off take of sugarcane may pose certain logistic problems. It would be ill-advised, State Government thought, to rely only on lifting of sugarcane by N.G.Os. Hence as an alternative, co-operative cattle feed manufacturing units in the State were approached. It was realised, in course of dialogue with them, that their product had a ready market. The State Government took a pragmatic view that the existing marketing outlets of the cattle feed manufactured by these units should not be disturbed. It would create a situation of scare and rise in price in case the State Government decided to purchase the entire quantity from the manufacturing units. It would be imprudent, to interfere with their network of distribution. As a way out, the State Government decided that the existing installed capacity of these units could be further utilised if these units were exempted from power cut on the day of their weekly off. It was therefore, decided that these units should not be subject to restriction on use of power on Sundays or their weekly off days and production on these days would be made available for being lifted by Collectors. In retrospect, it is felt that there was intrinsic wisdom in arriving at this arrangement. While on one hand it did not disturb the ready outlets of these units, on the other hand, it augmented production and consequent supply in the drought-affected area. The exemption from power cut was continued during the drought year and 19,110 tonne of cattle feed was

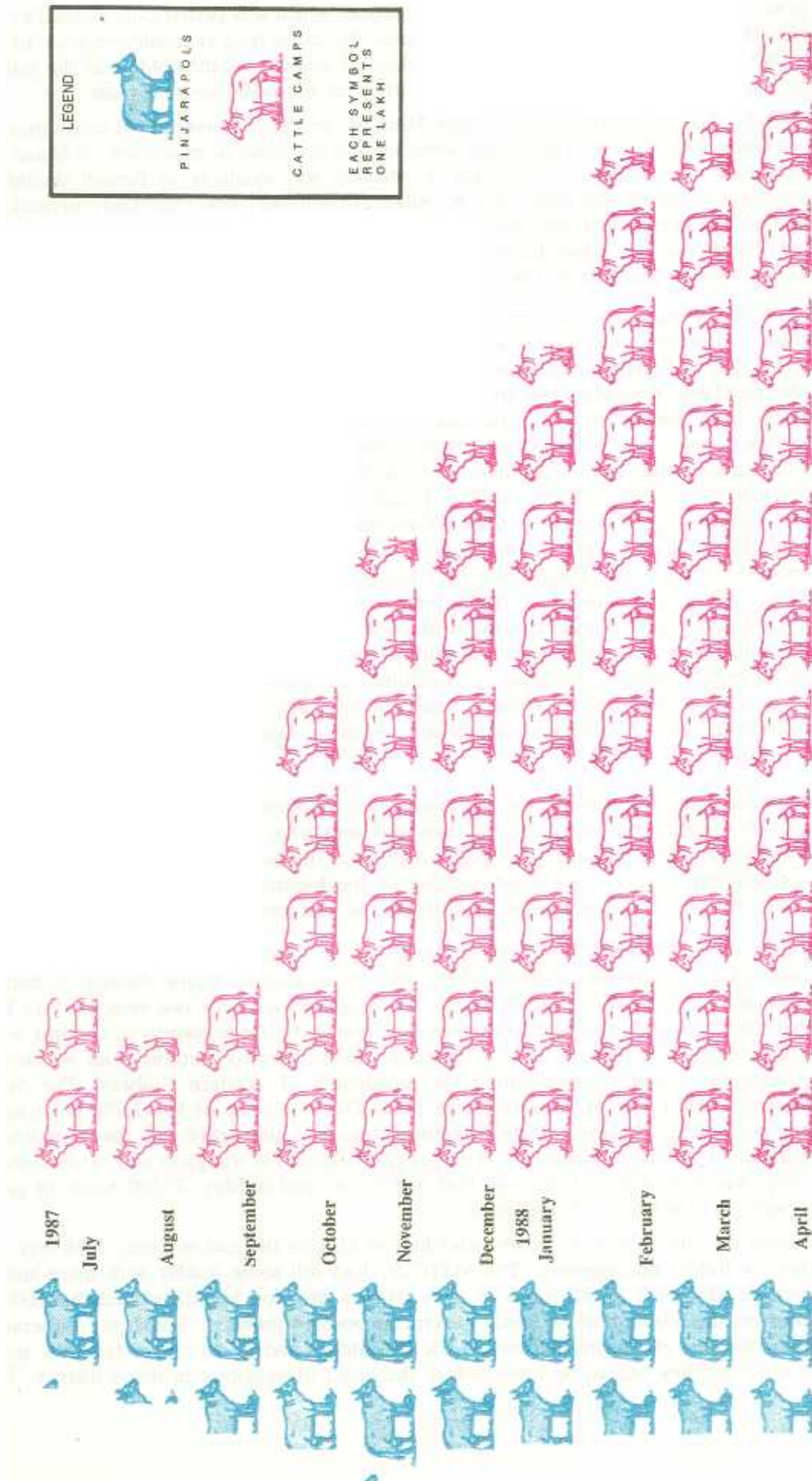


Figure 5: Cattle in Pinjarapols and Cattle Camps in Gujarat, July 1987 to April 1988.

procured from these units. Distribution of cattle feed was done through grass depots under Collectors. Initial purchase price of the cattle feed was Rs 1,300 per tonne, which was periodically revised to Rs. 1,600 per tonne. However, the State Government distributed the cattle feed at subsidised price of Rs. 950 per tonne. 18,200 tonne cattle feed was distributed through depots to card holders at the rate of one kilogram per day per cattle at heavily subsidised price of 95 paise per kilogram.

4.5 During the period, with the intervention of Prime Minister, the State Government could procure 500 tonne of wheat *bhusa* from Punjab. There were some logistic problems in movement of *bhusa* and it felt that movement of wheat *bhusa* in the form in which it was available in Punjab should be resorted to very sparingly. During this time, that is, August-September, 1987, the GOI advised the State Government that damaged wheat was available both from Food Cooperation of India (FCI) and Punjab. A team of officers was sent from the State to have negotiations with Government of Punjab. However, for various reasons, ultimately the damaged wheat could not be lifted.

4.6 Paddy straw as a fodder was also not very much in vogue in the worst drought affected area of Saurashtra and Kutch. However, since there was nothing to fall back upon, the State Government sent a team of officers led by Secretary, Food and Civil Supplies Department of State Government to finalise the deal for purchase of paddy straw from Punjab. It was realised that paddy straw in large quantity was available from Punjab. However, the deal had to be finalised before the agriculturists in Punjab took to sowing of *rabi* crop. Paddy straw has no value in Punjab and it is being burnt out to render the fields fit for *rabi* cultivation. The time for finalising the deal was extremely limited. The other constraints in procurement of paddy straw from Punjab was the fact that there was no State or co-operative agency supplying paddy straw. If State Government wanted to purchase paddy straw it had to be procured from individual private suppliers. Unstinted cooperation was extended by the officers of Government of Punjab in general and the Animal Husbandry Department in particular. The State Government contracted to purchase 10,000 tonnes of paddy straw from Punjab at a price of Rs. 250 per tonne. It was the most economic price at that time. Ultimately a little over 7000 tonne of paddy straw from Punjab was lifted. Movement of paddy straw also had inherent constraints in as much as it was not in baled condition. Because of its volume, the quantity that could be carried in a wagon was much less. On account of drilage, loss increased. The paddy straw was distributed in some of the worst hit districts, namely, Panchmahal, Kutch and Jamnagar. Special staff was stationed at the despatching end in Punjab.

4.7 Since ensuring availability of fodder was of paramount importance, the State Government approached Madhya Pradesh Government also. A team was sent from Gujarat to Madhya Pradesh. Government of Madhya Pradesh also extended full support and offered 2000 tonne of forest grass. However, the grass offered could not be lifted because of the logistic problem in lifting of grass. Madhya Pradesh Government could not offer grass from the districts adjoining Gujarat.

4.8 The Maharashtra State Tribal Co-operative Development Corporation (MSTCDC) had a programme of monopoly procurement of fodder from the tribal area in Thane district, a district neighbouring Valsad district of Gujarat. The offer was very much welcome for two reasons : (1) The quality of grass that they offered was similar to the one with which the cattle owners in Gujarat were familiar, and (2) Thane district was very close to Gujarat and the railway stations from which the grass was to be despatched were situated within the jurisdiction of Western Railway. The State Government purchased 35000 tonne of grass from the MSTCDC at a price of Rs. 1,170 per tonne. The price was very much high. However, State Government had no alternative and the despatch of grass was organised from 4 stations, namely, (1) Dahanu, (2) Palghar, (3) Vangaon and (4) Gholwad. The despatch of grass was started from February, 1988 and by the end of May, 37,000 tonne of grass was moved to drought affected area of the State.

4.9 It was experienced that the period from the latter half of May to the end of June, 1988 was the most critical period for fodder management. The MSTCDC had still some fodder with them and it was agreed to purchase additional 20,000 tonne of grass. Now a situation had developed that fodder was available. However, the question of its timely movement posed a problem. Railways co-operated in loading maximum number of wagons. However, the despatches had to be completed in a given time frame, in as much as they had to be lifted before the onset of monsoon in thane district. The

MSTCDC offered to despatch by road the additional quantity. Movement of grass by road, apart from being tardy, was also expensive. The MSTCDC offered to undertake despatch by road and the extra expenditure by road beyond 40 kilometre from their centre was agreed to be borne by MSTCDC. In other words, the State Government was liable only for the concessional railway freight, and the difference between the road transport cost and the concessional freight was borne by the MSTCDC. About 9,300 tonne of grass was lifted from MSTCDC by road.

4.10 In the meantime since September itself State Government realised that massive programme for growing of green fodder had to be organised. In spite of fodder being available from Punjab and Madhya Pradesh, the question of time involved in movement of fodder was major impediment. In view of the acute need for fodder in the State the cultivators also realised that their effort to grow green fodder would be very remunerative. The State Government decided to give free water to a cultivator from State / Panchayat tube wells and State Department's irrigation dams / reservoirs for growing green fodder in 2 acre of land in the command area of tube well or irrigation dam. The scheme was continued for *rabi* and summer season as well. The scheme for giving free water for growing green fodder cost State Government Rs. 3.75 crore. The cost far out-weighed the physical availability of green grass to the extent of 115.47 lakh tonne. The fodder management in the State was based on the availability of fodder from Maharashtra and the scheme of giving free water for growing green fodder.

4.11 As a part of the scheme-for encouraging growing green fodder, State Government decided to give priority for electric connections to the cultivators. The State Electricity Board had a target of energising 40,000 wells by March, 1988. The target was almost achieved. The State Government constituted a committee under the Chairmanship of collector to recommend priority for energisation of wells. General guidelines were issued to Collectors as to how such applications should be prioritised. The State Electricity Board was vigilant enough to ensure that power supply for agriculture was available for 10 to 12 hours a day. From the State level also the situation was monitored.

4.12 The Railway Board and the concerned Zonal railway heads and other supporting staff of the railways also cooperated and did very well in despatch of grass from Punjab, Gujarat, and Maharashtra. All told 1,34,891 tonne movement of grass was undertaken in 32, 712 wagons of Western, Central and Northern Railways.

4.13 During the drought of 1987 a little over one crore cattle were affected. Efforts to procure fodder from within and outside the State resulted in procurement of 1.60 lakh tonne of fodder. Green fodder produced within the State also helped a long way in tiding over the difficulties. However, all these measures could be availed of by those who had money to purchase this fodder. Being the third consecutive drought year, economic condition of the affected population was already under strain.

4.14 The large number of cattle of the affected population would have perished, had no NGOs come forward to organise cattle camps for maintaining the cattle. During the drought of 1987 a little over 1,200 cattle camps were set up by NGOs and institutional arrangements for a little over 16 lakh cattle could be made. Cattle in *Pinjarapolos* and cattle camps in Gujarat in 1987-88 may be seen in Figure 5. State Government decided that co-operative societies could also open cattle camps. Initially State Government restricted the number of cattle camps to be opened in a *taluka*, but the State Government subsequently relaxed this restriction. In this relaxation Government was conscious of the fact that being the third drought year resources of the NGOs had also depleted. In spite of their best intentions no NGO could take care of all the cattle in a *taluka*. The State Government, decided that Collector could sanction more than 5 cattle camps in a *taluka*. However the NGO wishing to open cattle camp was required to be sponsored / recommended by Taluka Relief Committee.

4.15 As to the number of cattle to be admitted in a cattle camp, Gujarat relief manual envisaged that not more than 3 cattle of an agriculturist could be admitted. This condition also was relaxed and the cattle were admitted without reference to the number of cattle of an agriculturist / *maldhari*. The State Government recognised that if strict insistence on the criteria of 3 cattle per agriculturist was made, it might lead to a dubious practice of admitting cattle in the name of fictitious agriculturists or in the name of resourceful agriculturists whose cattle might not have sought admission.

4.16 Initially the State Government restricted the opening of cattle camps in the districts south of Narmada. In this view the State Government gained by past experience in as much as the *maldharis* who in the previous drought had gone to South Gujarat districts had permanently settled down in that part of the State and their continuance in that area was a menace to the standing crops. However, of their own, some cattle if migrated to that area since fodder and water were available in that area, having reached that part, the owners of the cattle did not have enough resources to maintain their cattle. The State Government, therefore, took a decision that NGOs willing to look after such cattle could also be permitted to set up cattle camps in the southern districts of the State.

4.17 Permitting cattle camps to be opened and motivating the NGOs to set up cattle camps were idle unless their efforts were reciprocated in term of subsidising their efforts. The State Government in July, 1987 raised the scale of subsidy payable to a NGO from Rs. 3 to Rs. 3.50 per day per cattle subject to an expenditure of Rs. 4 being incurred by NGO per day per cattle. In the previous years Rs. 3 was the maximum subsidy payable. It was 50 per cent of the actual expenditure incurred or Rs. 3 whichever was less. Thus in the drought of 1987, the scale of subsidy was higher. As a part of the same reciprocation the State Government decided that for the fodder of all varieties transported by road from within the State, the NGOs would also be eligible for transport subsidy, at the rates fixed by the State Transport Department. The rates fixed were on tonne kilometrage basis or long kilometrage basis.

4.18 As per the Department Notification, a NGO had to produce a certificate of registration of the truck engaged to establish the carrying capacity of the truck. The NGO had also to present alongwith its claims, a certificate as to the distance from the place of procurement of fodder to the place of its utilisation. Compliance with these two conditions was a real hardship to NGOs. The State Government realised that a NGO may have engaged a truck which might have been unloaded even at the dead of the night at the site of the cattle camp. The truck owner / driver might be in a hurry to leave and from each of the trucks engaged, to obtain a copy of Road Transport Organisation(RTO) registration would be difficult for NGO. The State Government, decided that a truck of varying carrying capacity could carry a minimum fixed quantity of dry / green fodder. If that much quantity was moved in a truck engaged by a NGO it could be presumed that the NGO had engaged a truck with certain definite carrying capacity. Thus, the certificate of carrying capacity of a truck was linked with the carriage of minimum fodder and the minimum fodder carried could be an index of the carrying capacity of the truck engaged.

4.19 As regards the certificate relating to distance, the difficulty of NGOs was genuine. A truck might have been engaged to carry fodder from one district, say Bharuch, and the truck might have transported fodder for, say, Banaskantha district. Now Executive Engineer of each of these districts through which the truck passed could give certificate of the distance involved from Bharuch to Palanpur within his district. A NGO was required to procure similar certificate from 2,3,4 or as many number of districts through which it had passed. The State Government, arranged that a statement showing distance from each of the *taluka* headquarters of the grass-surplus districts to each of the *taluka* places in the drought affected districts should be prepared. Accordingly, such statements were prepared which were circulated and the Collectors were directed to rely on statements prepared by State Roads and Buildings Department for the purpose of computing the distance covered. With these two approaches in the clearance of claims for transport subsidy, the problem was substantially resolved.

4.20 It was represented to Government that during the months of winter the cattle admitted in the cattle camp were exposed to severe cold and such of the owners who were desirous of taking their cattle to their places during night time should be permitted to take their cattle home. The State Government took a decision to permit taking out cattle from the cattle camps during night time in the winter season.

Social Security

5.1 The fourth key area was the social security for the aged and infirm. No major change was required to be made during the drought of 1987, in as much as in the drought of 1985-86, the State Government had decided to revise the rate of cash doles payable and

introduced a system of making remittance of the cash doles by money order, and linking the payment of cash doles with the Plan scheme of social security implemented by the Social Welfare and Social Defence Department. During the drought of 1987 as many as 90,000 persons were eligible and given cash doles.

5.2 Extra care was taken in the drought of 1987 to maintain nutritional level of labourers, pregnant women and lactating mothers and children below six years of age. There was deficit of 300 / 600 calories and 12 / 20 grams of proteins among children below 6 years, expectant women and nursing mothers. The nutrition programme was started with the help of CARE Gujarat in the State. Nutrition programme consisted of two schemes:-

1. Integrated Child Development Services(ICDS) Programme; and
2. Special Nutrition Programme (SNP)

Integrated Child Development Services (ICDS) Programme:

There were 98 ICDS projects sanctioned upto 1987-88. 97 Projects were fully functioning out of 98 projects, 32 projects were located in tribal area, 59 projects were rural and 7 projects were established in urban slum area. Out of the total 98 projects, 82 projects were centrally sponsored and 16 projects were managed from State's own resources. The following services were delivered through the ICDS *anganwadis* and primary health centres:-

- (i) Supplementary nutrition;
- (ii) Pre-school education;
- (iii) Referral services;
- (iv) Health and Nutrition Education to mothers;
- (v) Health check-up; and
- (vi) Immunization.

5.3. An amount of Rs. 7 crore was provided for the 1988-89 plan out of which Rs.75.90 lakh was provided for special component plan and Rs. 3.30 crore for the tribal area sub-plan. The total physical target fixed was 11,64,000 beneficiaries and 9,54,595 beneficiaries were covered under the programme upto June, 1988.

Special Nutrition Programme (SNP):

There were 1,30,000 beneficiaries covered in 1,438 SNP centres. 1,02,689 beneficiaries were covered under SNP upto June, 1988. The SNP centres will be gradually converted into ICDS.

5.4 In the drought of 1987 *sukhadi* programme was started in the drought affected area of the state. By the end of June, 1988, 5,64,694 number of beneficiaries were distributed 80 grams of *sukhadi* containing wheat, flour oil and jaggery daily.

5.5 Wheat based programme was started in 8 *talukas* of 2 districts in the State. *Sattu* was distributed to 60,331 children and mothers in June, 1988.

Assistance to Agriculture

6.1 The fifth key area in drought management related to the preparation of agriculturist for the next kharif season. In this sphere also the state Government gave input subsidy / *taccavi* to cultivators in the drought affected area. The State Government issued orders in this behalf and this enabled the cultivators to take up sowing as soon as the monsoon set in 1988.

Public Distribution System (PDS)

7. The sixth key area in the drought management was the vigilance and strengthening of the public distribution system (PDS). Gujarat has strong network of Fair Price Shops (FPSs). A little over 12,000 FPSs are already there. A strict vigilance was kept to see that the FPSs dealers stored adequate quantity of foodgrains so that when wages were paid to the labourers, foodgrains were available for the labourers. Enforcement Wing of the State Civil Supplies Department was suitably geared to keep a watchful eye on the situation.

Expenditure

8. The State Government incurred an expenditure of Rs. 831.32 crore for drought management in 1987-88. As against the expenditure incurred, the Central assistance of Rs. 373.44 crore was received. Such a huge expenditure caused severe strain on the financial resources of the State Government. The measures could be taken only at the cost of various plan schemes. However, commitment to provide relief to the drought affected people was a matter of conviction on the part of the State Government.