13 UTTAR PRADESH

Uttar Pradesh has an agriculture-based economy. Agriculture was hit hard by repeated calamities in 1987 due to hailstorms which affected as many as 38 districts in April and May 1987, followed by the worst dry spell in the State due to the failure of the monsoon, which affected as many as 55 out of 57 districts of the State. Only two districts of Deoria and Gorakhpur were not affected by drought of 1987.

1.2 Uttar Pradesh received 23 per cent of the normal rainfall in June, 60 per cent in July, 53 per cent in August and 99 per cent in September 1987, as shown in Table 61.

Table 61: Rainfall in Uttar Pradesh, June-September 1987

S.No.	Month	Normal Rainfall (mm)	Actual Rainfall (mm)	Percentage of Normal Rainfall
1.	June	97.1	22.5	23.2
2.	July	294 7	177.5	60 2
3.	August	291.6	155.0	53.2
4.	September	178.9	177.0	98.9

Table 62: Yearwise Effect and Loss due to Drought in Uttar Pradesh, 1979-87.

S.No	Year	Number of Affected Districts	Population Affected (lakh)	Number of Villages Affected	Affected Crop		
					Area Sown (Lakh hectare)	Area Unsown (Lakh hectare)	Estimated loss (Rs in crore)
1.	1979	56	755 00	1,17,000	13.62	99.64	906 50
2.	1980	Nil	Nil	Nil	Nil	Nil	Nil
3.	1981	37	379.24	49,390	1 11	17 83	151 52
4.	1982	46	N A	N A.	42.27	28.14	704 10
5.	1983	14	N.A	N A	26.79	3.97	307.60
6.	1984	34	340.34	43,786	36.37	6.09	289.73
7.	1985	31	96.81	20,637	16.58	N.A.	479.81
8.	1986	57	706.87	87,421	79.22	9.78	1968 00
9	1987	55	840.64	98,868	55 67	46.62	2978 16

Note: N.A Not Available

1.3 Uttar Pradesh received the lowest rainfall in June and July, 1987 since 1979. Rainfall in 1979 and 1981-87 for July, August and September in Uttar Pradesh may be seen in Annexure XIX, Annexure XX and Annexure XXI respectively. In August, 1987 the rainfall was the lowest since 1980. The State was severely hit by drought in 1979 also in which crop loss was estimated at Rs. 906 50 crore while the crop loss in 1987 was estimated at Rs. 2978.16 crore. The number of districts, population, villages, area sown/unsown affected and the estimated loss due to drought in 1979-87 may be seen in Table 62.

A graphical representation of the number of districts, population and villages affected due to drought in Uttar pradesh in 1979-87 may be seen in Figures 26A and 26B. The districtwise number of villages, population, *kharif* crop loss sown and unsown area affected may be seen in Annexure XXII. The State suffered an estimated loss of Rs. 1,113.38 crore on account of sown area affected and the loss of Rs. 1864.78 crore on account of area left unsown due to drought in 1987 giving a total loss of Rs. 2978.16 crore.

The loss has been calculated at the rate of Rs. 4000 per hectare for area left unsown and at the rate of Rs. 2000 per hectare for the sown area affected. The division-wise population affected in Uttar Pradesh due to drought in 1987 may be seen in Figure 27

1.4 The ground water is generally available in most part of the State at shallow depth of 4-5 meters below ground level. After the monsoon, there is a general rise of 1-3 meters which is used for *rabi* irrigation during June to August 1987. Due to the drought, the lowering trend continued and there was practically no recharge during the monsoon period. In several districts of western, central and southern Uttar Pradesh, the lowering caused drying up of drinking water wells and reduction in the tubewell discharges. The recharge from canal seepage was also reduced. Boring had to be taken to lower depth at some places. Existing pumps and wells also had to be lowered, besides deepening the wells.

Organisational Response

2.1 The Relief Department under the Revenue Department of the State Government is the nodal department for natural calamities relief undertaken by different departments. The rainfall statistics are collected by the Relief Department from the districts and are examined to assess the incidence of the rainfall in different areas of the State. The funds out of 'margin money' for relief operations like gratuitous relief, subsidy for transport of fodder and drinking water tankers etc. are placed at the disposal of the District Collectors (DCs) by the Relief Department. The requirement of financial assistance from the GOI is consolidated and put up in the form of memorandum by the Relief Department, who also monitor the progress of relief works and utilization of the central assistance given to different departments of the State Government.

2.2 The State Government, at the very outset took all necessary steps to combat drought conditions on a war footing. Some of the important steps taken by the State Government are being narrated in the following paragraphs.

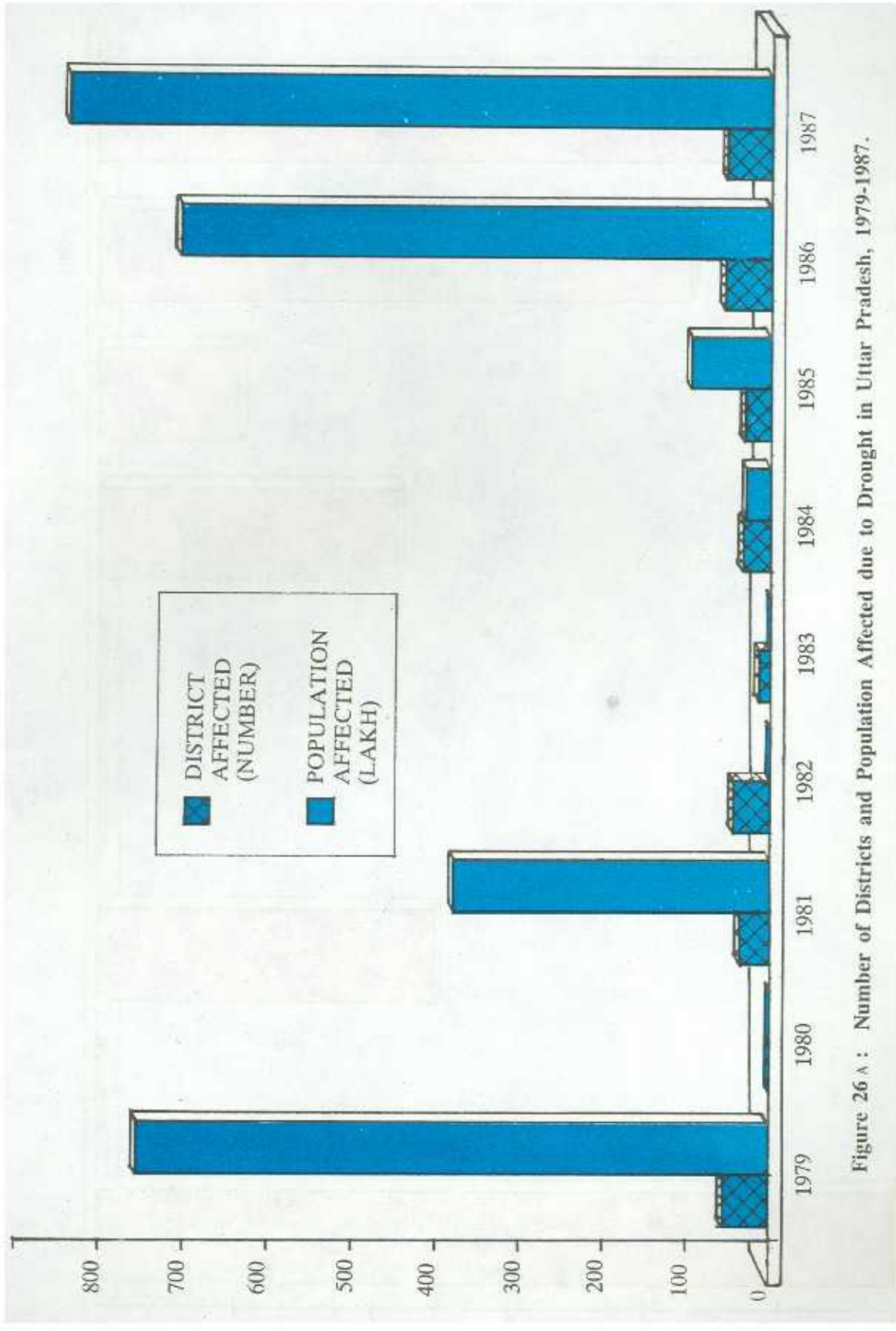

Figure 26 A : Number of Districts and Population Affected due to Drought in Uttar Pradesh, 1979-1987.

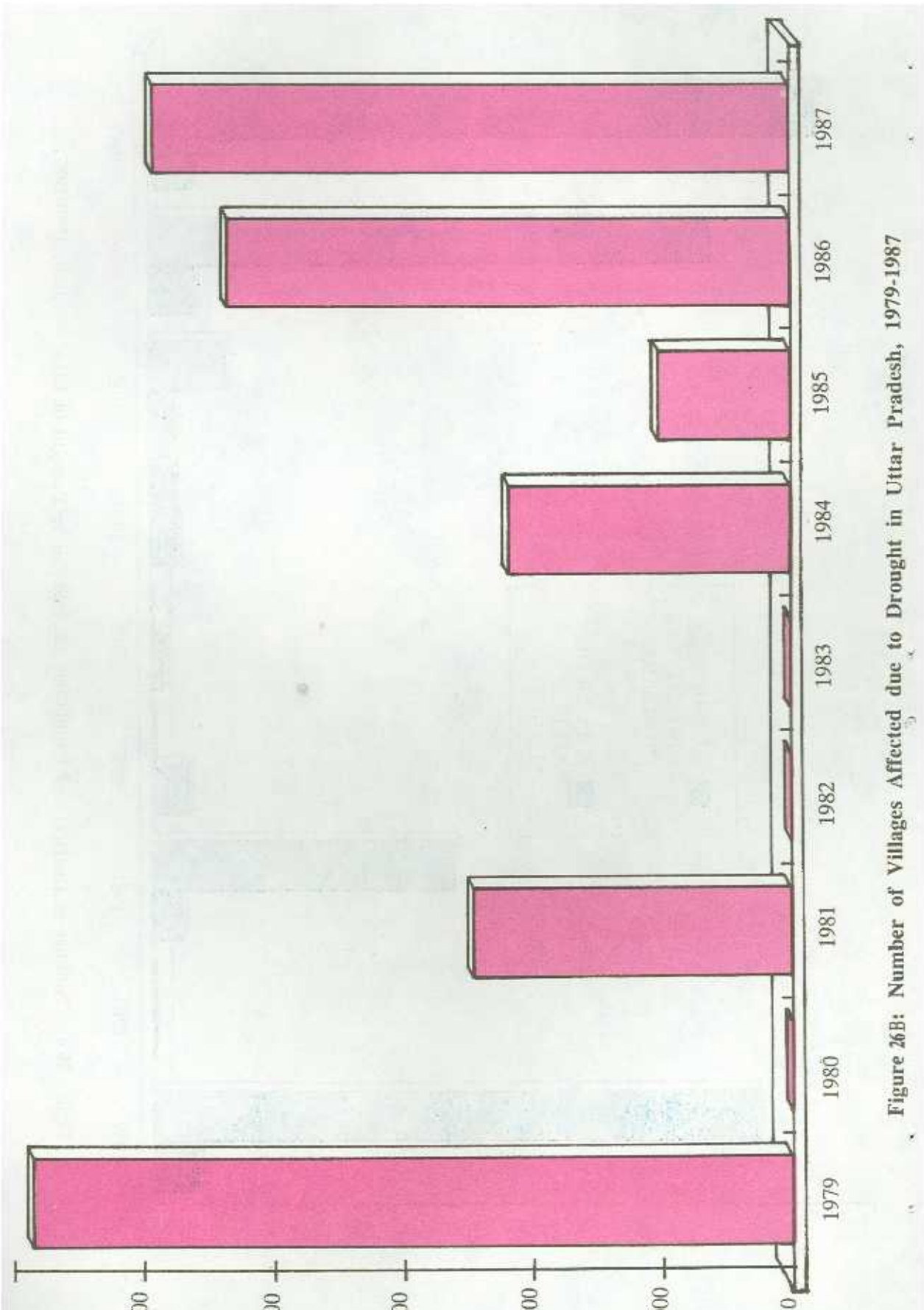

Figure 26B: Number of Villages Affected due to Drought in Uttar Pradesh, 1979-1987

2.3 The Cabinet reviewed once a week the drought condition and progress of relief works. It also examined the works done by all departments in this direction and sanctioned funds immediately based on the need. Besides the above, following committees were constituted at different levels.

2.4 In August, 1987, a Cabinet Sub-Committee was constituted to consider the problems of the drought, to review the relief works undertaken by various departments of the State Government and to apprise the Cabinet from time to time. Following were on this Sub-Committee: (i) Revenue Minister-Chairman; (ii) Agriculture Minister; (iii) Rural Development and *Panchayati Raj* Minister; (iv) Food and Civil Supply and Animal Husbandry Minister; (v) Power Minister; (vi) Irrigation State Minister; and (vii) Relief Commissioner-Convenor.

2.5 A State High level Reveiw Committee headed by the Chief Secretary of the State Government in which all concerned Secretaries to Government participated.

2.6 Districts Level Committees with the following composition were set up: (i) A Member of Parliament/State Legislature (alphabetically)-Chairman; (ii) District Collector; (iii) District Police Superintendent; (iv) Executive Engineer, Irrigation; (v) Executive Engineer, P.W.D.; (vi) Chief Medical Officer; (vii) Chief Health Officer; (viii) Divisional Forest Officer; (ix) District Agriculture Officer, (x) District Inspector of Schools; (xi) District livestock Officer; (xii) District Supply Officer; (xiii) Sub-Divisional Officer; (xiv) Chairman, Municipal Board; (xv) Chairman, District Board; (xvi) All Members of Parliament of the district; (xvii) All Members of State Legistature; (xviii) One representative from each political party recognised by the Election Commission; (xix) Three peoples' representatives belonging to affected area; (xx) Representatives of Voluntary Organisations; (xxi) Special Invitees; (xxii) A deputy Collector nominated by the District Collector-Member-Secretary.

2.7 Block Level Committees with the following composition were set up: (i) A Member of Parliament/State Legislature from the Area (alphabetically)-Chairman; (ii) *Pramukh Kshetra Samiti*-Vice-chairman; (iii) Member of Parliament/State Legislature of the Area; (iv) Elected Members of District Board, from the *Kshetra Samiti;* (v) 7 nominated non-officials; (vi) Sub-Divisional Officer; (vii) Deputy Superintendent of Police; (viii) Assistant Engineer, Irrigation, Canal and Tubewells; (ix) Assistant Engineer, P.W.D.; (x) Deputy Chief Medical Officer; (xi) Forest Officer; (xii) Livestock Development Officer; (xiii) Deputy Inspector of Schools; (xiv) Area Rationing Officer; (xv) Assistant Registrar, Co-operatives; (xvi) Assistant Engineer, Minor Irrigation; (xvii) Assistant Engineer, Power; (xviii) Assistant Engineer, Rural Engineering Service; (xix) Horticulture Officer; (xx) Assistant-Engineer, *Jal Nigam;* (xxi) Agriculture Officer; (xxii) Social Welfare Officer; (xxiii) Forest Conservation Officer; (xxiv) Block Development Officer (BDO)—Member-Secretary

2.8 *Nyaya Panchayat* Level Committees with the following composition were also set up: (i) A village *Pradhan* amongst all the village *pradhans* of the *Nyaya Panchayat* circle, nominated by the Sub-Divisional Officer (SDO) — Chairman; (ii) 4 village *Pradhans* of the *Nyaya Panchayat* circle, nominated by the Sub-Divisional Officer; (iii) Village *Panchayat* Officer; (iv) Lekhpal; (v) Special invitee, and (vi) Village Development Officer — Member-Secretary.

2.9 The cooperation of people's representatives was sought to relief operations and their views were also obtained through various committees. Orders were issued to obtain their contribution by forming an "Action Group" by the District Collector. The Uttar Pradesh Drought Relief Committee, a voluntary organisation working since 1966 undertook boring of tubewells in the State.

Employment Generation

3.1 The population worst hit was the poorest section, namely, landless labourers, small and marginal farmers and rural artisans. The State has 28.98 lakh small and 1.26 crore marginal farmers. Drought conditions reduced the employment opportunities drastically. So the immediate necessity was to provide employment opportunities outside the agricultural sector. Under the National Rural Employment Programme (NREP) works were taken up throughout the State and a sum of Rs. 94.97 crore was allotted for the same. Foodgrains worth Rs. 30.92 crore and amounting to 1.98 lakh tonne were utilised. As many as 5.54 crore mandays were accordingly generated. Districtwise expenditure and manday generated in Uttar Pradesh under the NREP in 1987-88 may be seen in Annexure XXIII. Daily wage rate was enhanced from Rs. 11.50 to Rs. 13.50 per day.

3.2 Under the Rural Landless Employment Guarantee Programme (RLEGP), works were taken up throughout the State. By the close of the financial year (1987-88) Rs. 85.42 crore was spent on these works, 1,57,914 tonne of foodgrains worth Rs. 24.76 crore were utilised and 5.16 crore manday was generated. Districtwise expenditure and manday generated in Uttar Pradesh under the RLEGP in 1987-88 may be seen in Annexure XXIV.

3.3 The GOI approved the ceiling of Rs. 90.62 crore for generating 7.88 crore manday at the daily wage rate of Rs. 11.50 per manday. Due to enhancement of daily wage rate to Rs. 13.50 per manday, target for manday generation got reduced to 6.80 crore manday. Funds to the extent of Rs. 89.48 crore were allotted to all the 57 districts and four departments (Irrigation, PWD, Soil Conservation and Fisheries). Against this allotment, the total expenditure up to 31st August, 1988 was Rs. 77.79 crore and overall 6.30 crore manday was generated. Average number of workers given employment per day was 3.51 lakh. Apart from cash allotment, foodgrain weighing to 68011 tonne was also allotted, 64,103 tonne of foodgrain was lifted and 52,290 tonne foodgrain was utilized. These works were executed in the districts by District Rural Development Agencies and department concerned. The districtwise physical and financal progress of these drought relief works is shown in Annexure XXV.

3.4 Following types of works were taken up which helped in generating maximum number of mandays; (i) Repair and construction of link roads; (ii) Soil Conservation works; (iii) Construction of *guls,* field channel and drains, (iv) Construction and deepening of ponds and canals; (v) Bridge construction; (vi) Afforestation; (vii) Contour bunding; (viii) Other works such as playgrounds, construction of boundary walls, construction of cleaning of wells and construction of shops.

3.5 The State Public Works Department (PWD) spent Rs. 23.65 crore and generated 178.24 lakh manday by the end of March 1988. This resulted in 2,095 kilometre of new earthern road, 6,528 kilometre of widening of earthern embankments of selected National Highways, State Highways and Major District roads, 315 kilometre of earthern roads earlier proposed under RLEGP and 1,543 kilometre of earthern roads sanctioned under district plan. The districtwise assets created by the PWD in Uttar Pradesh under the drought relief programme in 1987-88 may be seen in Annexure XXVI.

Water Supply

4.1 Uttar Pradesh *Jal Nigam* was entrusted with the responsibility of execution of piped water supply and installation of India Mark-II hand pumps in the State. In urban area, this was done on the basis of necessity of providing safe drinking water through piped schemes. In urban area, due to population rise, the need for strengthening of water supply schemes was felt. In rural area, the survey in 1972 revealed that the scarcity villages in Uttar Pradesh, where drinking water schemes had to be taken up numbered 35,506. During the survey conducted in 1985, it was observed that an additional 42,544 villages also fell under the category of scarcity villages. Thus 78,050 villages out of 1,12,561 villages were identified as water scarcity villages. The State Government with the assistance of the GOI is covering these scarcity villages by providing piped water supply and installation of India Mark-II hand pump in a planned manner and by 1986-87, 54,668 villages, that is, 21 per cent of villages were provided at least with one source of safe drinking water.

4 2 During 1987-88, 10,914 villages were provided with the facility of safe drinking water, thus leaving balance of 12,168 identified scarcity villages of the survey years 1972 and 1985. Due to drought in 1987 and on account of drinking water crisis, annual target of coverage of villages was raised from 9,700 villages to 10,914 villages. Upto March 1988, 35,248 hand pumps were installed. It was also considered that maintenance and repairs of the installed hand pumps were equally important to ensure supply of drinking water in scarcity villages. It was decided to entrust the repairs and maintenance work to *Jal Nigam* which was being done earlier by *Jal Sansthan* and village *Panchayats,* etc. Due to this only 1.2 per cent hand pumps remained to be repaired.

4.3 During 1987, the normal monsoon failed resulting in serious drinking water problems in 55 out of 57 districts of the State. The problem became acute when the winter rains also almost failed resulting in depletion of discharges in the underground water bearing strata and drying up of springs and *gaderas* of the hill areas In many districts almost all the wells went dry and further boring and

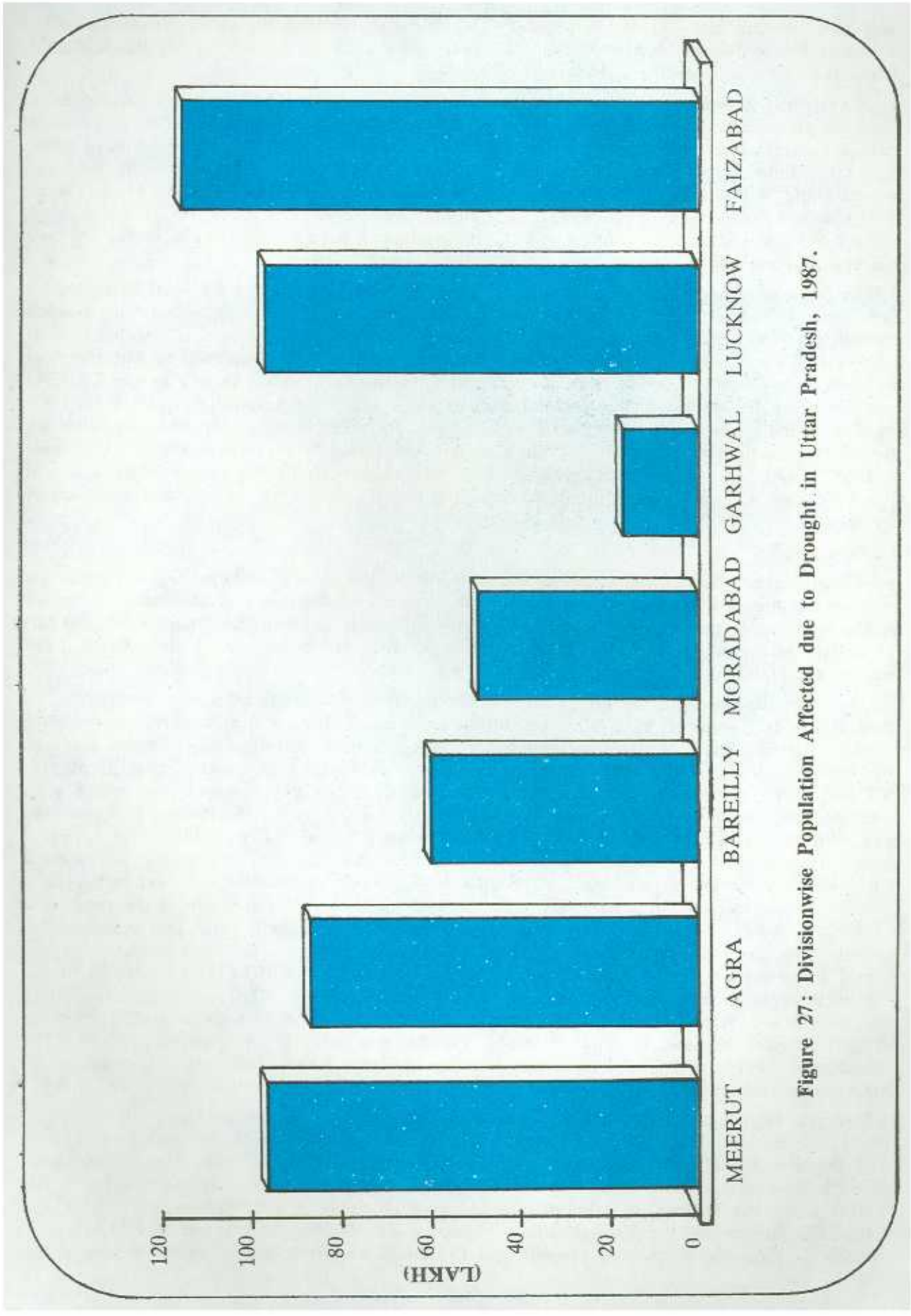

Figure 27: Divisionwise Population Affected due to Drought in Uttar Pradesh, 1987.

deepening of wells also did not give water. The discharge of tubewells in the urban area also depleted. This crisis persisted throughout the year, particularly in districts of hill Bundelkhand, Allahabad, Agra and Meerut divisions.

4.4 To face the drought situation, the GOI gave an assistance of Rs. 14.07 crore for installation of hand pumps, construction of tubewells, extension of pipe line and provisions of water supply facilities through tankers, drums and temporary pumping in urban as well as rural area of the State. In urban area 1,165 India Mark-II hand pumps were installed, a length of 18.66 kilometre pipe line was extended and 58 new tubewells were constructed. In rural area of plains, 5,911 India Mark-II hand pumps were installed and a length of 14.02 kilometre of pipe line was laid in hill area. The number of villages and towns affected by drought of 1987 and number of hand pumps installed in 1987-88 may be seen in Annexure XXVII.

4.5 In three districts of Varanasi, Mirzapur and Allahabad, 41 tankers were used in 6 *tahsils* benefitting 41 villages. Similarly in Varanasi and Mirzapur districts, drinking water was supplied through 281 drums in 4 *tahsils* benefitting 18 villages. Temporary pumping was resorted to in 8 villages in Bara *tahsil* of Allahabad district. Drinking water was also supplied to Mirzapur and Robertsganj towns in Mirzapur district by 6 tankers. The State Government spent a sum of Rs. 15.43 crore on urban and Rs. 97.56 crore on rural drinking water supply under normal programmes in 1987-88. Out of the amount spent under rural water supply, Rs. 45.98 crore was spent under Minimum Needs Programme (MNP), Rs. 49.14 crore under Accelerated Rural Water Supply Programme (ARWSP), and Rs. 2. 44 crore under *harijan basti* programme Under the drought relief, a sum of Rs. 4.84 crore was spent under urban water supply and Rs. 9.23 crore under rural water supply schemes.

Cattle Care

5.1 The drought caused scarcity of fodder due to failure of *kharif* crop, lack of adequate availability of grass for grazing purposes and diseases in cattle population. The worst affected areas as regards fodder were Bundelkhand Division comprising districts of Jhansi, Lalitpur, Hamirpur, Banda and part of district Allahabad of Allahabad Division. Besides, some hill districts were also affected. The impact was in other districts as well, but to a lesser extent.

5.2 To meet the situation, the Forest Department provided the facility of free grazing from 28th August to 30th November, 1987 in drought affected district. Cutting of grass and its transportation were allowed in reserve forest area in the hills for feeding livestock. The Forest Department also took the following steps: (i) 25,13,883 hectare of forest area was opened for grazing, free of cost; (ii) Villagers were allowed to cut grass from forest area of 3,47,381 hectare from which it is estimated that roughly 3,72,776 quintal of fodder was extracted; (iii) 1,753 hectare of forest land was used to augment the production of fodder and 16,557 kilogram of fertiliser was sprinkled over 1,815 hectare to increase the production of fodder; (iv) In hills, 378 hectare was covered by stone wall fencing to increase the production of fodder. Similarly 1,005 hectare was also covered under stone wall fencing in Bundelkhand and southern circles to augment the production of grasses; and (v) Fifty three water holes were constructed in national parks and sanctuaries to provide drinking water facilities to wild life. The details of the fodder relief rendered by the Forest Department in Uttar Pradesh may be seen in Annexure XXVIII. The quantity of fodder cut by villagers in the forest area may be seen in Figure XXVIII The districtwise expenditure on medical and veterinary care, treatment, innoculation done and area under fodder crops in drought affected districts in Uttar Pradesh, 1987-88 may be seen in Annexure XXIX. The divisionwise number of animal treated may be seen in Figure XXIX. The divisionwise number of innoculation done may be seen in Figure XXIX.

5.3 Animal Husbandry Department provided funds for purchase and sale of wheat *bhusa* on 'no profit and no loss' basis. District Collectors (DCs) were provided funds for transport subsidy. The Department and DCs were vigilant to ensure availability of wheat *bhusa* at reasonable price of cattle owners in scarcity area. The market price of fodder was monitored. An amount of Rs. 50,000 each was utilised in Almora, Farrukhabad, Nainital, Pauri, Pithoragarh, Tehri and Uttarkashi districts for purchase of wheat *bhusa*. Similarly, Rs. 22,220 and Rs. 12,617 were utilised for the same purpose in Chamoli and Lalitpur district respectively. In all, a sum of Rs.

Table 63: Effect of Drought on Crop Loss and Production Loss in Uttar Pradesh, 1986 and 1987

S.No.	Item	Year	
		1986	1987
1.	Total Sown Area in *Kharif* Crop	87.78 lakh hectare	75.04 lakh hectare
2.	Total Paddy Sown Area	53.32 lakh hectare	45.09 lakh hectare
3.	Total *Kharif* Production	104.67 lakh tonne	82.01 lakh tonne
4.	Total Paddy Production	72.60 lakh tonne	45.09 lakh tonne

3,84,837 was spent on purchase of wheat *bhusa* in these 9 districts. Stocks of wheat *bhusa* in the stores of the State Agriculture Department were also reserved for sale to needy cattle owners. The balance of amount allotted for purchase of *bhusa* allotted to the districts was utilised for the purchase of medicine for treatment of deficiency diseases in livestock like vitamins and calcium.

5.4 The Animal Husbandry Department treated and innoculated 1.28 crore and 1.85 crore cattle respectively. Area brought under fodder crop cultivation was 6.63 lakh hectare in *kharif,* 1.58 lakh hectare in *rabi* and 84 thousand hectare in *zaid.*

Contingency Crop Planning

6.1 The unfavourable behaviour of the monsoon caused widespread damage to *kharif* crop and severely disrupted the rural economy. The normal sown area during *kharif* in the State is about 120 lakh hectare. Out of this about 40 per cent area in the affected districts (47 lakh hectare) could not be sown due to lack of rainfall in the critical months of July and August. Damage from 60 to 80 per cent took place in the sown area due to drought which is about 55.7 lakh hectare. In all crops worth Rs. 3,000 crore were lost as a result of which the rural economy was badly affected. The impact of drought on crop loss and production loss may be seen in Table 63.

6.2 To mitigate the distress caused to the farmers, following special measures were taken: (i) Supply of power 10 to 14 hours per day for agriculture purposes; (ii) Subsidy for the purchase of fertilisers; (iii) Diesel supply was maintained; (iv) Programme was executed to take additional crop of *toria* and early potato before *rabi* crop; and (v) Free distribution of nursery of vegetables to small and marginal farmers.

6.3 Following effective programmes were executed to enhance the foodgrains production in rabi: (i) For better utilization of water, time bound rostering was done; (ii) 10 to 14 hours power supply to State tubewells and private pumping sets; (iii) Free boring under the minor irrigation programme; (iv) Supply of fertilisers in accordance with requirements of farmers; (v) Fertiliser's sale centres were opened within the radius of 3 to 5 kilometre so that farmers did not face difficulty in lifting the fertilisers; (vi) Availability of different varieties of *rabi* crop seeds to farmers; (vii) Special efforts were made to increase the area under oilseeds crop and more than 7,800 quintal certified seed was distributed while during 1986-87, 6,000 quintal certified seed was distributed, (viii) Supply of certified seed in *mini* packets to small and marginal farmers; (ix) After exemption from license, efforts were made to distribute *mini* packets of urea fertilisers (5 and 10 kilogram); and (x) A massive campaign from 15th November to 30th November, 1987 was organised to ensure *rabi* sowing and one Government functionary was appointed for each village to ensure the same.

6.4 The GOI approved the ceiling of expenditure of Rs. 20 crore to be incurred during 1987-88 on agriculture input subsidy to small and marginal farmers. This amount was utilized for provision of (i) fertilizer subsidy to small/marginal farmers of drought affected districts (6.04 crore); (ii) subsidy on fertiliser and plant protection chemicals for sowing early potato in drought affected

districts (2.02 crore); (iii) for payment to small and marginal farmers through U.P. Co-operative Federation (9.23 crore); (iv) subsidy on agricultural inputs and plant protection equipments (1.00 crore) and (v) subsidy on agricultural input loans to small and marginal farmers through co-operatives (3.43 crore).

6.5 The production of vegetables suffered seriously. The GOI provided an assistance for increasing production of vegetables by distribution of vegetable *minikits* during *rabi* 1987 and *kharif* 1988 in 55 drought affected districts of the State. Under the plan, 500 *minikits* per district each containing vegetable seeds, fertilisers and plant protection chemicals costing Rs. 75 and sufficient to cover an area of 0.04 hectare were distributed to the farmers who cultivated the land in the proximity of urban area which had the requisite irrigation facilities for producing vegetables. A total of 27,500 *minikits* were distributed which entailed an expenditure of Rs. 20.63 lakh.

6.6 Besides, the National Horticulture Board also provided a sum of Rs. 4.58 lakh for strengthening of vegetable production in the drought affected districts Under the plan, 500 *minikits* for vegetables were distributed in 9 districts of Kanpur, Agra, Meerut, Aligarh, Sultanpur, Lucknow, Saharanpur, Bareilly and Jhansi each containing seeds, fertilisers, and plant protection chemicals sufficient for an area of 0.1 acre and literature. The cost of the kit was Rs 100 each. A token sum of Rs. 5 was, however, required to be paid by the beneficiaries. The divisionwise details of distribution of *minikits* for vegetable production in Uttar Pradesh in 1987 may be seen in Annexure XXX. The divisionwise distribution of *minikits* for vegetable production can also be seen in Figure 31.

6.7 In order to make available vegetable seedlings to the farmers for vegetable production, 10.5 crore seedlings were distributed free of cost.

6.8 It was decided by the State Government to take up the sowing of potato as an early crop in an area of 40,000 hectare to compensate the shortfall of food to some extent. To give impetus to the potato growers, an assistance of Rs. 400 for fertilisers and Rs. 200 per hectare for plant protection measures were provided who had completed potato sowing by 10th October 1987. The GOI sanctioned a sum of Rs. 2.40 crore for this scheme. The sowing was done in an area of 36,715 hectare as against 40,000 hectare and as such a sum of Rs. 2.02 crore was utilized. The districtwise achievement in growing potato may be seen in Annexure XXXI. The divisionwise performance in production of potato may be seen in Figure 32.

6.9 In 1987-88 the area under fruits, vegetables and potato was 8.13, 8.37 and 3.29 lakh hectare respectively with a production of 55.52 lakh tonne fruits, 104 lakh tonne vegetables and 59.52 lakh tonne potato. In 1987 a record production of potato was obtained. For 1988-89 the target area under fruits, vegetables and potato was 8.64, 8.88 and 3.33 lakh hectare respectively with a production of 56.71 lakh tonne fruits, 106.94 lakh tonne vegetables and 62.00 lakh tonne potato.

6.10 Uttar Pradesh has a net work of 65,600 kilometre of canals and 24, 739 State tubewells in operation against a total of 25,346 State tubewells. Major canal systems are Upper Ganga Canal, Lower Ganga Canal, Sharda Canal, Sharda Sahayak Canal and Gandak Canal.

6.11 Scanty and deficient rainfall in 1987 led to tremendous demand for irrigation water during *kharif* 1987. In 1986 also, there was not sufficient rainfall and practically no water was left in the reservoirs. All this impaired the normal operation of irrigation channels. Farmers resorted to indiscriminate cutting of canal banks and put *bunds* inside the canal for irrigating their fields which caused reduced supplies of water in the lower portions of the channels. In order to supply water to the maximum possible sown area, intensive patrolling and inspection of channels were done by the officers of the Irrigation Department. Co-operation of district and police authorities was also obtained to prevent unauthorised activities on the channels by the cultivators. These efforts resulted in mitigating the hardship to a very great extent in the canal command area. Whereas the crops in the non-canal command area were severely damaged, the drops in the canal command were saved to a great extent. Due to efficient running of the canals and tubewells in the severe drought period of 1987, an area of 22 lakh hectare could be irrigated as against 26 lakh hectare during *kharif* 1986.

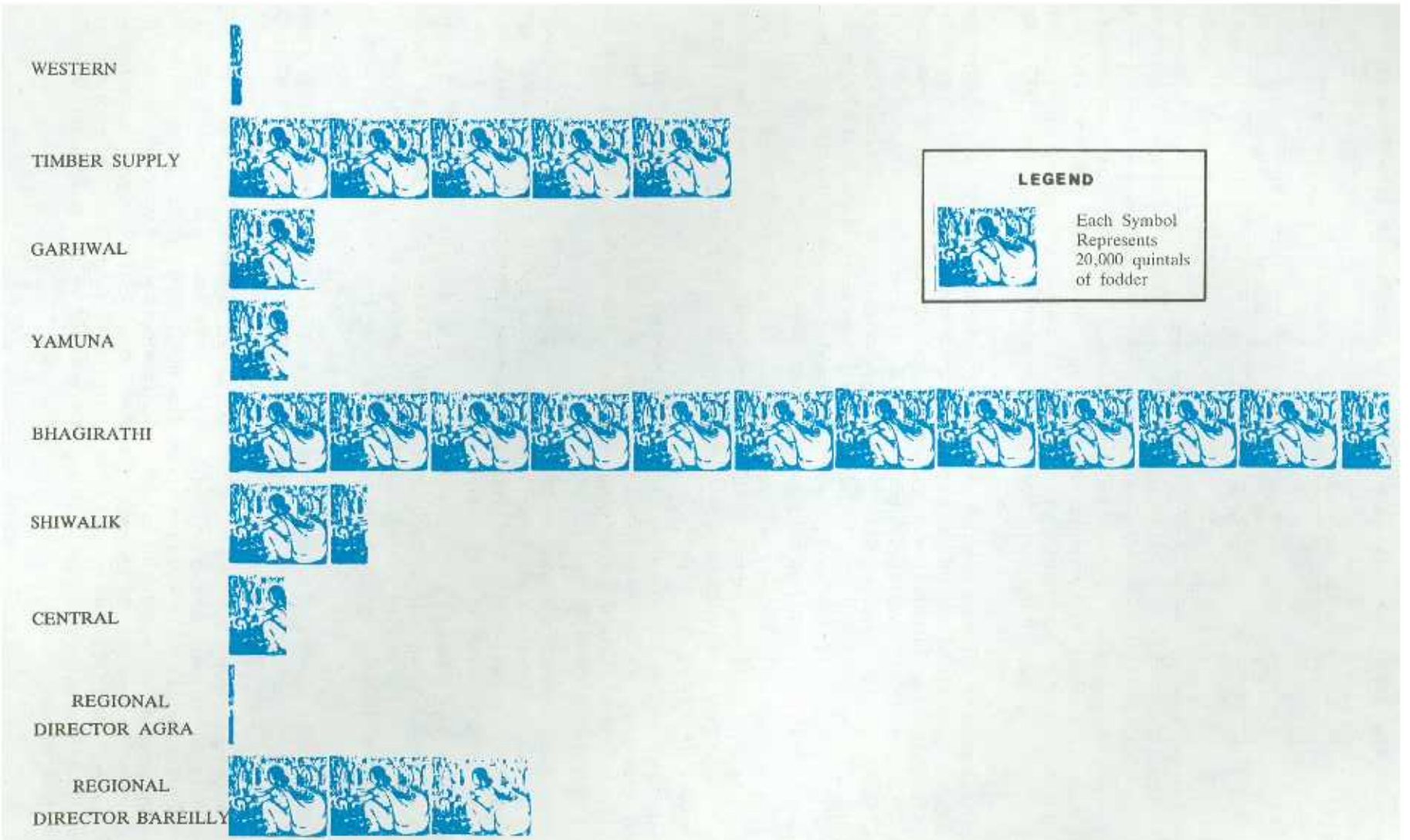

Figure 28: Circle-wise Fodder Cut by Villagers in Forest Area in Uttar Pradesh, 1987-88.

Table 64: Irrigation Provided by Canals and State Tubewells in Uttar Pradesh, 1986-87 and 1987-88.

S. No.	Means of Irrigation	Area Irrigated (lakh hectare)					
		1986-87			1987-88		
		Kharif	Rabi	Total	Kharif	Rabi	Total
1.	Canals	23.20	25.37	48.57	19.02	25.19	44.21
2.	Tubewells	2.82	5.89	8.71	3.07	7.43	10.50
	Total	26.02	31.26	57.28	22.09	32.62	54.71

6.12 Due to unprecedented failure of monsoons, the canals had to be run almost continuously with silt-laden water, resulting in heavy deposition of silt. Timely action was taken for silt clearance of the channels to prepare them for *rabi* irrigation. A total length of 33,019 kilometre of canals, involving 6,722 tail ends, was cleared from 15th September to 15th November, 1987 at an expenditure of Rs. 10.25 crore.

6.13 Supplies anticipated in different rivers, during *rabi,* were assessed on the basis of available data and detailed channelwise rosters were prepared in consultation with the Agriculture Department. The rosters so prepared were got printed and distributed to various concerned Departments right from the Divisional level officers, to District level officers and to the Block level officers. Copies of rosters were supplied to public representatives and to all *Gram Pradhans* through the Block Development Officers. The rosters were also published in the local newspapers. As a result of this wide publicity, the cultivators were informed in advance of the planned running of the channels so that they could plan their agricultural activities accordingly.

6.14 As a result of these steps, adequate supply of water was ensured upto almost all of the tail-ends of the channels. The efficient running of the canals, mitigated to a large extent the adverse effect of the drought. The area irrigated in *rabi* 1987-88 was 32.62 lakh hectare as compared to 31.26 lakh hectare irrigated in *rabi* 1986-87.

6.15 Close attention was paid to the working of the State tubewells to ensure maximum efficiency and minimum break-down. About 500 additional pumping sets and 1,200 motors were procured, to enable prompt replacement of the defective pumps and motors. This resulted in bringing down the percentage of defective tubewells to within 6 per cent.

6.16 For proper and economical utilisation of tubewell water, a sum of Rs. 2.50 crore was spent on the repair of existing lined *guls* of about 25,000 tubewells to ensure delivery of water right upto the fields. Another sum of Rs. 2.50 crore was spent on construction of 1,317 kilometre unlined *guls* and 3,058 kilometre of field channels.

6.17 It was ensured that power is made available to the State tubewells for atleast 10 hours. These efforts yielded results and the tubewells were run for 1.89 crore hours, giving and average of 765 hours per tubewell in 1987-88 as compared to 1.39 crore hours run with an average of 569 hours per tubewell in 1986-87. The irrigation provided in 1986-87 and 1987-88 may be seen in Table 64.

6.18 The GOI approved a ceiling of expenditure of Rs. 14 crore for completing/expediting certain irrigation projects in drought prone area. Districtwise expenditure on improvement of irrigation facilities in Uttar Pradesh in 1987-88 may be seen in Annexure XXXII.

6.19 It was decided to accomplish all the minor irrigation annual targets by 30th November, 1987. Strategy laid down was to make available to the farmers an additional irrigated area of 10,20,000 hectare in the State through minor irrigation works. This involved 65,000 free borings under the State's normal programme and additionality of 60,000 borings through special central assistance in the context of drought. To meet out the shortage of polyvinyl chloride (PVC) pipes, exemption was accorded to use mild steel (M.S.) pipes till 30th November, 1987. In all 65,047 free borings were executed in 1987-88 and it created additional irrigation potential of 3.25 lakh hectare and also generated 30 lakh manday.

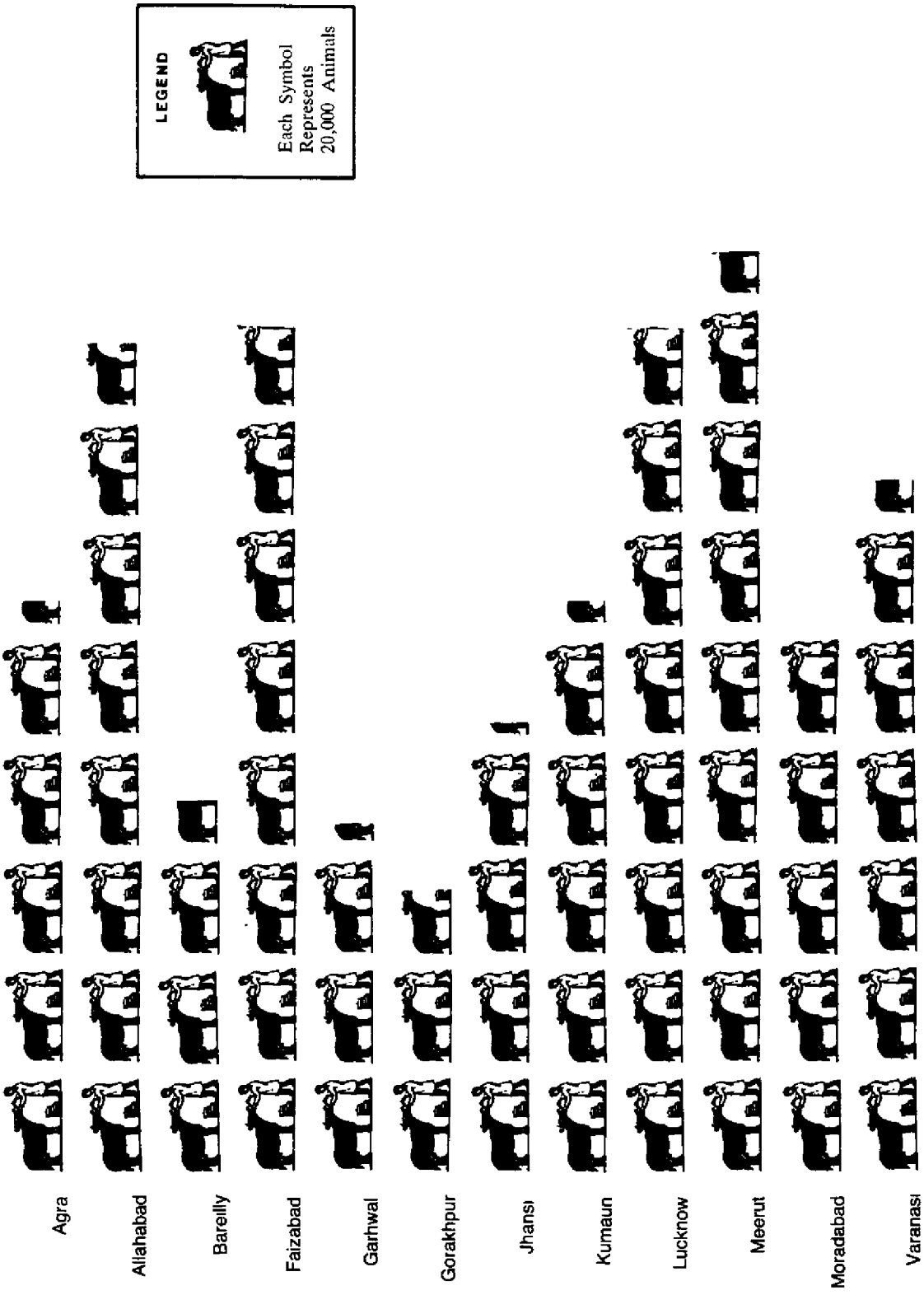

Figure 29: Division-wise Number of Animal Treated in Uttar Pradesh, 1987-88.

Table 65: Expenditure and Irrigation Potential Created through Private Minor Irrigation Programme in Uttar Pradesh, 1987-88.

S. No.	District	Funds provided to DRDAs (Rs. in lakh)	Number of Borings completed	Irrigation potential created (Thousand hectare)	Employment Generated (Thousand Manday)
I.	**Agra Division**				
1.	Agra	5.80	96	0.480	4.80
2.	Aligarh	23.37	390	1.950	19.50
3.	Etah	29.89	498	2.490	24.90
4.	Mainpuri	31.22	520	2.600	26.00
5.	Mathura	21.54	359	1.795	17 95
	Total	131.82	1863	9.315	93.15
II.	**Allahabad Division**				
6.	Allahabad	26.03	434	2.170	21.70
7.	Etawah	25.67	428	2.140	21.40
8.	Farrukhabad	25.67	428	2.140	21.40
9.	Fatehpur	21.80	363	1.815	18.15
10.	Kanpur-Dehat	24.46	408	2.040	20.40
11.	Kanpur-Nagar	2.20	37	0.185	1.85
	Total	125.83	2098	10.490	104.90
III.	**Bareilly Division**				
12.	Bareilly	28.24	470	2.350	23.50
13.	Badaun	20.29	338	1.690	16.90
14.	Pilibhit	12.16	203	1.015	10.15
15.	Shajahanpur	22.27	371	1.855	18.55
	Total	82.96	1382	6.910	69.10
IV.	**Faizabad Division**				
16.	Baharaich	26.38	440	2.200	22.00
17.	Barabanki	24.81	414	2.070	20.70
18.	Faizabad	26.83	447	2.235	22.35
19.	Gonda	30.92	515	2.575	25.75
20.	Pratapgarh	28.19	470	2.350	23.50
21.	Sultanpur	22.27	375	1.875	18.75
	Total	159.40	2661	13.305	133.05
V.	**Gorakhpur Division**				
22.	Azamgarh	42.69	878	4.390	43.90
23.	Basti	40.59	677	3 385	33.85
24.	Deoria	42.69	848	4.390	43.90
25.	Gorakhpur	32.41	540	2.700	27.00
	Total	158.38	2943	14.865	148.65

1	2	3	4	5	6
VI.	**Lucknow Division**				
26.	Hardoi	15.56	259	1.295	12.95
27.	Kheri	21.88	365	1 825	18.25
28.	Lucknow	14.05	234	1.170	11.70
29.	Raebareli	21.35	366	1.780	17.80
30.	Sitapur	25.56	426	2.130	21.30
31.	Unnao	20.36	359	1.695	16.95
	Total	118.76	2009	9.895	98.95
VII.	**Meerut Division**				
32.	Bulnadshahar	20.74	346	1.730	17.30
33.	Ghaziabad	5.48	91	0.455	4.55
34.	Meerut	18.05	301	1.505	15.05
35.	Muzaffarnagar	16.11	268	1.340	13.40
36.	Saharanpur	13.69	228	1.140	11.40
	Total	74.07	1234	6.170	61.70
VIII.	**Moradabad Division**				
37.	Bijnor	15.68	261	1.305	13.05
38.	Rampur	8.04	134	0.670	6.70
	Total	23.72	395	1.975	19.75
IX.	**Varanasi Division**				
39.	Ballia	33.48	558	2.790	27.90
40.	Gazipur	36.21	604	3.020	30.20
41.	Jaunpur	32.44	541	2.705	27.05
42.	Varanasi	22.93	382	1.910	19.10
	Total	125.06	2085	10.425	104.25
	Grand Total	1000.00	16670	83.350	833.50

6.20 A ceiling of Rs. 10 crore was earmarked under central assistance for drought relief works of employment generation. This ceiling was adjusted against 16,670 free borings within the total of 65,047. The divisionwise details shown in Fig 63. With the execution of programme, 8.30 lakh manday of employment was created. Besides this an irrigation potential of 83,000 hectare was also created benefitting 16,670 small and marginal farmers of the State. Districtwise details of the funds provided, employment generation and creation of irrigation potential may be seen in Table 65

Besides free borings, marginal farmers and small farmers were given subsidy at the rate of 50 per cent and 33 30 per cent respectively for pumping sets.

6.21 Owing to the failure of monsoon there was increased demand for power supply in agriculture sector. Scarcity of drinking water both in rural and urban localities also caused over-loading on power supply feeders. In order to sustain the *kharif* crop, it was essential to operate State tubewells, private tubewells and pumping sets to the maximum possible extent. Accordingly the supply of power to these tubewells was increaced from an average of about 5 hours per day to 10 to 12 hours per day. The drought condition led to very heavy drawal of power in the rural area on account of which large number of transformers got damaged. It became necessary to replace these transformers and also to

Table 66: Districtwise Allotment of Funds and Transformers in Uttar Pradesh, 1987-88.

S.No.	District	Transformers Number	Allotted Cost (Rs. in lakh)
I.	**Agra Division**		
1.	Agra	20	5.6
2.	Aligarh	20	5.6
3.	Etah	27	5.56
4.	Mainpuri	18	5.04
5.	Mathura	20	5.6
	Total	105	29.40
II.	**Allahabad Division**		
6.	Allahabad	10	2.8
7.	Etawah	25	7.0
8.	Farrukhabad	10	2.8
9.	Fatehpur	15	4.2
10.	Kanpur	15	4.2
	Total	75	21.0
III.	**Bareilly Division**		
11.	Badaun	90	25.2
12.	Bareilly	65	18.2
13.	Pilibhit	30	8.4
14.	Shahjahanpur	56	15.68
	Total	241	67.48
IV.	**Faizabad Division**		
15	Baharich	50	14.0
16.	Barabanki	20	5.6
17.	Faizabad	80	22.4
18.	Gonda	80	22.4
19.	Pratapgarh	50	14 0
20.	Sultanpur	30	8.4
	Total	310	86.8
V.	**Gorakhpur Division**		
21.	Azamgarh	120	33.6
22	Basti	58	14.24
23.	Deoria	50	14.0
24.	Gorakhpur	70	19.6
	Total	298	83.44