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Research Paper - Geography

Study Of Population And Some Resources In The Drought Prone Region Of Maharashtra

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1. Introduction

Population also plays an important role in modern economic development. It is the most potent resource which can alter the entire face of the country, if utilised prudently. Not only it provides trained and skilled man-power for economic reconstruction but like other natural resources it can be exported to earn regular income and meet financial crisis. But an illiterate and unskilled population full of ethnic and linguistic diversities poses a number of problems whose solutions are always difficult to find out. Fast growing population accompanied with maladies of overpopulation not only disturbs the peace and tranquility of the region or country to which it belongs but may pose serious threat to even the survival of the mankind. That is why population planning and human resource development have become the major topics of debate in today's world, particularly in developing countries like India. (Tiwari, R.C. 2005).With its total population of 1027.01 millions (in 2001), which is 16.7 per cent of the world's total population, India is the second largest country of the world after china.

Drought has been major problem in India as well as Maharashtra. It is an unpredictable climatic condition and occurs due to failure of one or more monsoons. Drought prone region of Maharashtra faces the various problems i.e. low agricultural productivity, agricultural instability, drinking water, migration, farmer suicide etc. This is a result of erratic rainfall and lack of sufficient irrigation facilities. The Maharashtra state and Government of India have made many efforts to over come the problems created by the drought. Therefore, it becomes necessary to study the changes in population. Thus we have selected drought prone region of Maharashtra as a study region for this research work

2. Objectives

1. To study the changes in the population of the drought prone region in Maharashtra state (1981, 1991, and2001).
2. To study the some resources in the study region.

Study Region

The region selected for the study is the drought prone region in Maharashtra state. A remarkable feature of the state's rainfall is that it decreases rapidly to the east of the Sahyadri ranges. The rain shadow region comprising most of the area of central Maharashtra is known as drought prone region.

The review committee appointed by the Government of Maharashtra for the determination of drought prone areas of Maharashtra state headed by Dr. V. Subramaniam (1987). Dr. V.

Subramaniam committee identified about 35 percent of the geographical area of the state as drought prone, and included 94 tehsils from 14 districts of the state in the drought prone area. The same areas have been selected for the study. However, Dhule district was divided into Dhule and Nandurbar, Presently the total number of districts in this context is fifteen. They together form a contiguous sub-region of the state. This region includes Nasik, Dhule, Nandhurbar Jalgaon, Ahamadnager, Pune, Solapur, Satara, Sangli, Aurangabad, Jalna, Beed, Osmanabad, Latur and Buldhana districts.

The drought prone region of Maharashtra covers an area of about 120233 Sq. Km. It lies in the western plateau of Maharashtra in between 16^{O} 41' to 21^{O} 30' North latitude and 73^{O} 30' to 77^{O} 00' Eastern longitude. It posses 15 districts comprising 94 tehsils (Fig. 1.1).

4. Data Base and Methodology

Data has been collected by referring different statistical abstracts, district gazetteers, census reports, season and crop reports, agricultural statistical information of Agriculture Department of Maharashtra, Pune. The Secondary data was also collected from various Government offices and Institutions. The collected data was processed, edited and analyzed by applying different statistical methods and is presented through tables, maps and diagrams.

5. Hypothesis

There are spatio-temporal variations in the land use patterns in the drought prone region in Maharashtra, which is a result of geographical, economic, technological, Social and environmental factors. The area under irrigated land area under forest and net area sown is not increasing sufficiently though the increase in population was observed in last three decades.

6. Some Characteristics of The drought prone region of Maharashtra

1. The drought prone region in Maharashtra covers an area of about 39.07 percent of the total area of Maharashtra.
2. The drought prone region of Maharashtra is a low rainfall region compaired to Konkan, Sahayadri and eastern Maharashtra due to the rain-shadow condition. Hence 70 percent of the land is under rainfed agriculture.
3. The study region includes a part of Deccan plateau of India. The physiography of this region indicates that at least 50 percent of the region comprises with hilly area i.e. Ajantha-Satmala, Harischandragad-Balaghat and Mahadeo range.
4. The region includes important river basins viz. Tapi-Purna, Godavari, Bhima and some part of Krishna i.e. Yerala basin.
5. The soil in this region are originated from basalt rock and generally classified as black soil, soil on divides and hill tops, gray soils and alluvial soil.
6. From the point of view of climatic control and soil condition bajra and jowar are main rainfed crops of this region.With the development of irrigation facilities land use has been altered to a great extent. Sugarcane, cotton are main cash crops. Besides this wheat, groundnut, maize are grown on irrigated lands.
7. Solapur, Pune, Ahmednagar, Aurangabad

and Nasik are main industrial locations in the region.

8. In the drought prone region of Maharashtra the area under net irrigated area was 1131308 hectares (9.40) in 1985-86, which is 9.40 per cent to the Total Geographical Area (TGA) of the study region. Net irrigated land occupies an area of 1812536 hectares or 15.07% of the TGA in 1998-99, which is increased by 5.67per cent within the span of thirteen years.

9. Irrigated tract of river basins are agriculturally developed and also for increasing the agricultural productivity and living standard of society. But still agriculturally, it is an underdeveloped area.

Sr. No.	Tehsils	Population		
		1981	1991	2001
1	Nasik	626777	894932	1317367
2	Dindori	163928	208229	264727
3	Kalwan	156087	198843	165609
4	Niphad	291669	357270	439842
5	Sinnar	193078	227961	292075
6	Yeola	147853	187802	235521
7	Chandwad	133171	165015	205189
8	Malegaon	517355	672428	789230
9	Baglan	243341	296184	311395
10	Nandgaon	169449	203075	236319
11	Dhule	483701	603475	719785
12	Sakri	276054	332526	363092
13	Sindhkheda	229976	262511	287517
14	Nandurbar	209566	248363	294084
15	Idlabad	93257	115323	137753
16	Chalisgaon	251044	329268	356808
17	Pachora	182855	227437	251907
18	Bhadgaon	112340	127723	142168
19	Amalner	225408	252401	262522
20	Parola	125102	154399	169919
21	Erandol	228905	269073	148114
22	Jamner	200976	244795	288804
23	Akola	176385	222153	266638
24	Sangamner	280408	354808	441439
25	Shrirampur	291672	340327	256458
26	Kopergaon	291604	337387	277170
27	Rahuri	204093	252570	294924
28	Newasa	211237	273075	326698
29	Shevgaon	138275	170507	203676
30	Pathardi	147837	185845	214872
31	Parner	177501	214064	246552
32	Shrigonda	181418	235706	277356
33	Karjat	146618	184331	205674
34	Jamkhed	95304	119278	134216
35	Ahmednagar	365957	482884	606690
36	Haveli	655439	1154024	1353050
37	Baramati	257511	310442	372852
38	Indapur	227675	287753	348413
39	Purandar	161409	192792	223428
40	Daund	188608	263994	341388
41	Khed	231886	283504	343214
42	Junnar	246425	303951	369806
43	Ambegaon	160746	186809	213842
44	Sirur	182835	239405	310590
45	North solapur	615608	784361	960803
46	South solapur	151031	187157	210774
47	Barshi	276757	302158	340831
48	Akkalkot	215510	262872	290037
49	Pandharpur	237680	317348	402707
50	Malshiras	282300	350346	422600
51	Sangola	182063	230246	272077
52	Mangalwedha	117301	148893	171261
53	Madha	207550	250176	292611
54	Mohol	158630	202900	252526
55	Karmala	165714	194600	233316
56	Miraj	506320	634639	756048
57	K. Mahankal	97274	117901	144596
58	Jath	193096	240647	283950
59	Tasgaon	300597	339710	213205
60	Khanapur	217958	254017	258231
61	Atpadi	84016	111557	125263
62	Koregaon	190605	225002	253128
63	Phaltan	224018	273451	313627
64	Man	145223	184489	199598
65	Khatav	202701	234182	260925
66	Khandala	82574	101105	119819
67	Aurangabad	515994	829453	1165567
68	Paithan	186851	240770	287356
69	Vaijapur	179232	218959	259601
70	Kannad	192355	252688	291267
71	Khuldabad	69879	88098	101500
72	Gangapur	160971	209402	279197
73	Ambad	256274	176200	207142
74	Jalna	338909	340428	432129
75	Jafferabad	84168	113900	137345
76	Beed	250553	336934	393282
77	Georai	188521	236299	262540
78	Patoda	128216	173288	95738
79	Ashti	151244	183915	206666
80	Manjlegaon	220494	190200	214997
81	Kaij	213444	203975	226612
82	Ambejogai	333558	189543	235670
83	Osmanabad	214681	296892	359234
84	Tuljapur	172062	218741	250149

Sr. No.	Tehsils	Population		
		1981	1991	2001
85	Bhoom	102329	124094	116894
86	Kalamb	175191	208265	188237
87	Parenda	116467	140038	125136
88	Ahamadpur	246956	180961	199053
89	Latur	275379	391919	542414
90	Oswa	182089	225929	280240
91	Nandura	312231	127647	149270
92	Motala		124534	143743
93	Khamgaon	278294	218393	266675
94	Shegaon		125517	150699
	Total	**20683603**	**25491372**	**29654979**

Source: Census handbook of Maharashtra (1981, 1991 and 2001).

Table 1 reveals that tehsilwise population of study region according to census 1981, 1991 and 2001.

According to the 1981 census, 62.8 million was the population of Maharashtra. As per the 2001 cenus, population of Maharashtra was 96.75 millions, making it the second most populous state in the country, after Uttar Pradesh. In 1981, the study region had a population of 20.6 millions in 2001; 29.6 millions of people were living within the study region (Table 1).

The population figures of the study region for 1981 and 2001 reveal a crude density of 172 and 247 per sq.km. and Maharashtra state's density 204 and 314 per sq.km. respectively. In 2001 census, Pune and Nasik districts urban agglomerations, which together accounted for 14.95 percent of the state's total urban population. While entire districts like Nandurbar, Dhule, Ahmednagar, Satara, Sangli, Solapur, Osmanabad, Beed, Latur, Aurangabad, Jalna, Jalgaon and Buldhana together account for only 18.87 percent of the state's urban population.

The distribution of population is resource-oriented. Wherever agricultural or industrial development has been more due to dense population. Rural population is dense in Bhima, Godavari and Tapi basins because of good amount of rainfall in the western part, availability of irrigation facilities, deep black soils are suitable for cotton cultivation. Degree of density in Marathwada is low where transportation facilities and natural resources in general are very few.

7.1 Changes in General Land Use Pattern in Drought Prone Region of Maharashtra 1985-86 and 1998-99.

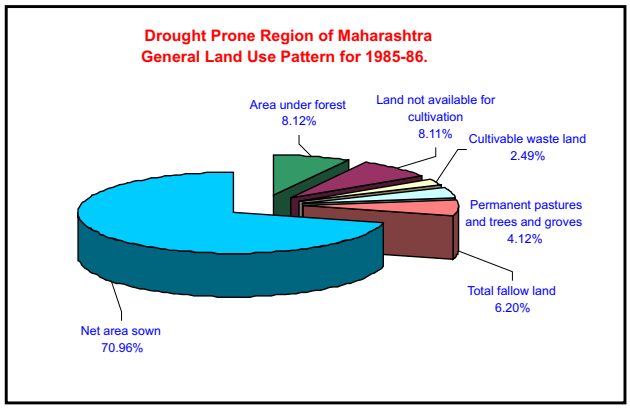
Table 2 : Drought Prone Region Of Maharashtra: Changes In General Land Use Pattern (1985-86 And 1998-99)

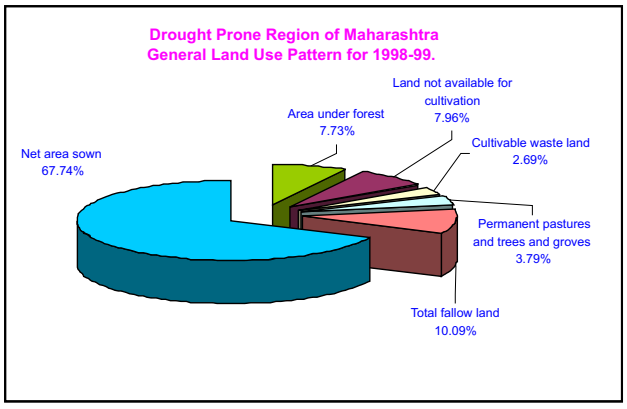
Sr. No.	Major Land Use Category	Area in %		Volume of change
		1985-86	1998-99	
1.	Area under forest	8.12	7.73	-0.39
2.	Land not available for cultivation	8.11	7.96	-0.15
3.	Cultivable waste land	2.49	2.69	0.20
4.	Permanent pastures and trees and groves	4.12	3.79	-0.63
5.	Total fallow land	6.20	10.09	3.89
6.	Net area sown	70.96	67.74	-3.22
	Total	**100.00**	**100.00**	

Table 2, Fig. 1.2 reveals that a comparative picture of changes in general land use pattern of 1985-86 and 1998-99. Change is observed in various categories viz. area under forest (-0.39 per cent), land not available for cultivation (-0.15), cultivable waste land (+ 0.20), permanent pastures and trees and groves (-0.63), total fallow land (+3.89) and net area sown (-3.22).

Taking the study region as a whole, net area sown has been decreasing, cultivable waste land and total fallow land has been increasing. These results are dangerous for future planning of

agriculture in the drought prone region of Maharashtra as well as scenery of area under study. These problems are mainly due to increasing population, low rainfall condition, lack of irrigation facilities, and increasing saline and alkaline soils in Solapur, Pune, Sangali and Ahmednagar districts. Degraded land due to lift irrigation and high runoff during stormy cloud bursts in rainy season is the another problem in the study region.





7. Distribution of Irrigated Area

In the drought prone region of Maharashtra the area under net irrigated area was 1131308 hectares in 1985-86, which is 9.40 per cent to the Total Geographical Area (TGA) of the study region. Net irrigated land occupies an area of 1812536 hectares or 15.07 per cent of the TGA in 1998-99, which is increased by 5.67 per cent within the span of thirteen years.

8. Suggestions

1) In the drought prone region of Maharashtra increased irrigation facilities are only 5.67 per cent in thirteen years which is just 0.4per cent per annum. Therefore, large quantity of area should be increased as an irrigated land by providing proper irrigation facilities.

2) Net area sown has decreased by 3.22 per cent in the study region during the period under investigation. This decrease is by 3879 hundred hectares. Again to bring this area under cultivation it is necessary to extend net sown area in region. It is necessary to increase agricultural inputs i.e. irrigation, modern implements, drought resistant HYV seeds and organic fertilizers.

3. The area under forest is very less in the study region. Only 8.12 per cent of Total Geographical Area (T.G.A.) was under forest cover in the year 1985-86, which declined to 7.73 of the TGA in the year 1998-99. Thus there was decreased in the forest cover by 0.39 per cent during the period under investigation. Again the forest area is very sparse and mainly in the form of shrubs, herbs and thorny bushes belonging to the category of *Acacia* and *Zizyphus*.

In general the forest requirement of the region is at least 33 per cent of the TGA. Taking in to consideration in the forest cover it is necessary to increase it by about 30786 hundred hectares or atleast 25.60 per cent of the TGA of the study region. As, it is not possible to achieve the required 33 per cent due to physical limitations.

This will help to reduce the soil erosion, conservation of soil moisture and increase the possibility of rainfall.

4) Land not available for cultivation was observed 875800 hectares (8.11 per cent) in 1985-86, which is decreased 957500 (7.96 per cent) in 1998-99.

5) Total fallow land was 745200 ha (6.20 per cent) in 1985-86, which is increased as 12129 ha (10.09 per cent). The net change in the fallow land was + 3.89 per cent in the thirteen years.

Thus it is concluded that the agricultural and social development is still dependent on the erratic and scanty rainfall. If we considered the availability of natural resources and increase in population of the study region it is not maintaining social justice. Hence, irrigation facilities should be improved in near future for giving a helping hand to improve lifestyle of the people living in the study region.

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