

Land Use and Cropping Pattern of Gadchiroli District- 2013 -14

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Abstract:-

The land is used according to the needs of human being. In its ambit include factors like: land, water, air, and human. Its utilization varies with relative location and over time and place; one of the uses of land is for agriculture. Cropping pattern means the "Proportion of area under various crops at point of space and time." The cropping patterns of a region are closely influenced by the geo-climatic, socio-economic, historical and political factors.

Rice, an indigenous crop, is grown all over the country with highest concentration in north – eastern and southern part of the country. It is mainly a tropical crop with mean temperature 25⁰C and annual rainfall of 160 cm. Rice, in India, is essentially a *kharif* and *rabbi* crop which is sown from June to August and harvested from November to January. Similarly summer crop is sown in November to December and is ready for harvest in March to April.

Gadchiroli district is generally considered as rural and tribal district. It is a major Paddy (rice) producing district in eastern Vidarbha; which is generally known as paddy region. Gadchiroli district has total 12 Talukas where the diversity of paddy production is observed. Paddy crop is largely affected by the factors like climate & soil. Paddy farming is a traditional one; the farmers produce rice as an important food crop. Rice cropping pattern has been studied with various crops in Gadchiroli district. The study of rice cropping pattern is done referring all 12 talukas of district.

Key words: -Gadchiroli, Rice, Land Use, Cropping Pattern, Irrigation.

Introduction:-

The district is categorized as tribal and undeveloped and most of its land is covered in forest and hills. Gadchiroli district is abundant in natural beauty, located in the eastern region of Maharashtra. Forests cover more than 75.96 % of the geographical area of the district including the main hilly region like; in Aheri, Bhamragarh, Tipagarh, Palasgarh, Khobramendha, and Surajagarh. The four rivers: Vainganga, Pranhita, Indravati and Godavari flow across the border of Gadchiroli district. In Gadchiroli district the temperature in summer is usually recorded 45⁰ C and in autumn the rain is recorded 1400 -1500 mm.

The road transportation in the districts is enough across the 12 talukas of Gadchiroli district. The district has been divided into six sub-divisions i.e. Gadchiroli, Chamorshi, Aheri, Etapalli, Desaignanj and Kurkheda and each sub-division has two talukas. According to census of 2011 total population of the district is 10, 72,942 Male and female population is 5, 41,328 and 5, 31,614 respectively and in that population rural population is 954909 (89%) and urban population is 118033 (11%). The literacy rate of the district is 66.03 %. The tribal community population which resides in the district is 38.17 % (As per Census 2011). The main profession of the people is farming. Paddy (rice) is a major crop of Gadchiroli district and approximately 92% of crop area is occupied by this crop. The other Agricultural crops in the district are Jowar, Linseed, Pigeon, and Wheat.

It is the pattern of crops for a given piece of land means "The proportion of area under various crops at the point of time in the unit area." Cropping systems is based on climate, soil,

and water availability. It has to be evolved for realizing the potential production levels through efficient use of availability of the resources.

Methodology:-

The research is based on the secondary data of Meteorological Department and District Gazetteer of Gadchiroli district. Agriculture data is used from socio-economic survey & statistical department of Gadchiroli District; and is implemented in general land use and cropping pattern method. Statistical information during 2000 - 01 to 2013 - 14 is derived from the socio economic survey of Gadchiroli district.

Objective of study:-

- 1) To study the information about the uses in the Gadchiroli district.
- 2) To study the proportion of total cultivable area of the entire geographical area of the Gadchiroli district.
- 3) To study the cropping pattern of rice crop in the total cultivable area.
- 4) To study rice cropping pattern and irrigation area
- 5) To study taluka wise condition of rice cropping pattern of Gadchiroli district.
- 6) To find out decrease or increase in area & growth in cultivation of rice.
- 7) To study the relation of area and production of rice crop in Gadchiroli district.
- 8) Comparative study of paddy crop in the last twelve years
- 9) To study high and low rice cropping pattern size according to taluka
- 10) To study the farmers' trend to cultivate various crops.
- 11) The impact of government policies & the impact of geographical factors, climatic changes on rice cropping pattern.

A) Uses of land in Gadchiroli District:-

L.D. Stamp is the first person who classified British land into seven groups. Which are as follows: 1) Agricultural land, 2) Waste Land, 3) Pastures Land, 4) Orchard Land, 5) Grassland, 6) Forest Land, 7) Land under the city.

L.D. Stamp explains the classification of land in his book '*Land of Britain Its Use And Misuse*'.

Forman T.W. (1968) – 'Land utilization is the use of developed and undeveloped land at a particular time in particular area'.

R.B. Mandal – 'Utilizing enough of each piece of land will result in land utilization'

Thus land is used for many reasons. The land that is actually used is called land utilization.

The total geographical area of district is 901896.58 hectares according to Socio Economic Survey 2013 -14. Most of it is covered under the forest which is 64.81%. Gadchiroli district has the highest forest cover and lowest cultivation area in the state of Maharashtra. Out of the total geographical area 24% land is cultivable, 2.4% area is under permanent livestock and other grazing land which is 3% is not suitable for agriculture land. The total cultivable land is 224760.90 hectares (24.920 of total geographical area). Out of total cultivated area (80%) of land is used for rice crop. The highest area under rice crop in the 2013 -14 is in Chamorshi taluka (31240 hectare -17.3%)

In the district, 73808 hectares of area was under irrigation; the highest irrigated net area was 26.3% in Chamorshi taluka, in the second come Armori, which was 14.2%, 11.5% in Kurkheda and Gadchiroli 13.9%. The lowest irrigated net area was in Bhamragarh which is 0.8%. The total area under irrigation in Gadchiroli district, in the year 2013-14 was 32.835 of the total irrigated area.

Land Use of Gadchiroli District 2013 -14

Sr. no.	Talukas	Total geographical area	Forest covered area	Total area under cultivation	Area under irrigation	Area under rice crop	Area of irrigation under rice crop
1	Desaiganj Wadsa	21983	5454	19432.09	8266.92	17676.21	8137.70
2	Armori	42078.58	11696.61	23514.19	10248.20	18972.48	9604.24
3	Kurkheda	68230.44	41614.74	19411	8632	16358	7744
4	Korchi	57158	35556	12724	750	10417	606.33
5	Dhanora	140065	107209	20543	4344	18036.48	4015.32
6	Gadchiroli	63142.84	31383.73	21515.45	9980	18265.39	9602.59
7	Chamorshi	78790.06	24512.23	41439.44	18568.04	31240.23	18046.16
8	Mulchera	22541	11511	7179	2368	5887	1990
9	Etapalli	185682	164876	16252	2151	15612	2043
10	Bhamragarh	89011.16	76455.13	7290.47	593.05	7089.94	581.71
11	Aheri	94469.50	67596.50	15346.26	1674.48	10435.22	1583.64
12	Sironcha	38745	6560	20114	6233	9726	4582
Total		901896.58	584424.94	224760.90	73808.69	179715.95	68536.69
Total percentage		100%	64.79%	24.92%			
Percentage of irrigation in the area under cultivation				100%	32.83%		
The area under rice crop and the percentage of irrigation under it.						100%	38.13%

(Source: Economic and Statistical Dept. (2001, 2013 -14) District Socio Economic Survey, Gadchiroli District.)

B) Taluka wise rice cropping pattern in Gadchiroli district:-

Cropping pattern of various crops that was selected by Talukawise cropping pattern from Gadchiroli district are divided as - high (above -80%), medium (60 - 80%), & low(40 - 60%),. The following formula is used for acquiring cropping pattern.

Formula: - CP = Ca ÷ N × 100

Cp = cropping pattern

Ca = cotton crop area in study area

N = total cropping area in selected region for study

A comparative study of cropping pattern has been carried out between the crop year 2000 -2001 and 2013 -14 in the Gadchiroli district. During the period of 2000-01 highest cropping pattern was (above 80%) in Dhanora, Etapalli, and Mulchera talukas. There was medium cropping pattern (60 - 80%) of rice seen in talukas like Desaiganj-Wadsa, Armori, Kurkheda, Korchi, Gadchiroli, and Chamorshi. The lowest rice cropping pattern (40-60%) was seen in Aheri, Mulchera, and Sironcha. Based on the study of rice cropping pattern of the Gadchiroli district; it seen that during 2000-01 rice cropping pattern was in medium range.

During the period of 2013-14 the highest cropping pattern of rice was (Above 80%) in Wadsa, Armori, Dhanora, Korchi, Gadchiroli, Mulchera, Etapalli, and Bhamragarh talukas, it seen that Kurkheda, Chamorshi, Aheri these talukas were in medium range (60 - 80%) rice cropping pattern and the crop pattern of rice appears is the lowest (40-60%) in Sironcha taluka. It is also seen that during the period of 2013-14 rice cropping pattern was high - medium range in total Gadchiroli district.

Sr. no.	Taluka's	(2000 – 2001)			(2013 – 2014)		
		Total area under crops	Area under Rice crop	Rice cropping pattern	Total area under crops	Area under Rice crop	Rice cropping pattern
1	Desaiganj wadsa	12309	7685	62.43	13169	11227	85.25
2	Armori	24872	18846	75.77	23659	19020	80.39
3	Kurkheda	18456	13517	73.25	19826	13267	66.91
4	Korchi	11670	8976	76.91	13141	10553	80.30
5	Dhanora	20198	16722	82.79	20294	18049	88.93
6	Gadchiroli	16875	11267	66.76	22191	18024	81.22
7	Chamorshi	32735	23966	73.21	41360	31076	75.13
8	Mulchera	10608	6259	59.00	6665	5724	85.88
9	Etapalli	14712	13187	89.63	15978	14462	90.51
10	Bhamragarh	8487	6922	81.61	7229	7005	96.90
11	Aheri	12017	6511	54.18	15216	9772	64.22
12	Sironcha	13710	6943	50.64	19774	9503	48.05
Total		196649	196649	140801	71.60	218502	167682

(Source: Economic and Statistical Dept. (2001, 2013 -14) District Socio Economic Survey, Gadchiroli District.)

As per the comparison of both crop years, it seen that cropping pattern of rice is positively changed during 2013 – 14 than 2000 – 01 in Gadchiroli district, because rice cropping area is 75% in all various crops. As the conclusion; the cropping pattern of rice is good. Paddy cropping pattern in Gadchiroli district is seen higher in 2013 -14 compared to 2000 -2001.

Conclusion: -

1. Percentage of forest area is 64.75% of total geographical area of Gadchiroli district.
2. It is seen that the climate of Gadchiroli district is favorable for rice crop
3. It is seen that sufficient rainfall (60-70' inch) is observed which is essential for rice crop in Gadchiroli district.
4. The pattern of paddy crop in Gadchiroli district has increased in 2013 – 14 as compared to 2000 -2001.
5. Rice is that a main food crop of Gadchiroli district.
6. The area covered under the rice crop is 75% and other crops are 25% in Gadchiroli district.
7. The period of 2013-14 rice cropping pattern was high - medium range in total Gadchiroli district.

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