

Land use and Cropping Pattern in Kolhapur District

^aR.V.Hajare, ^bTejas Jaykar, ^bVishal Patil, ^bAnita Magdum

^aAssist. Professor, Department of Geography, Rajaram College, Kolhapur, Maharashtra, India

^bResearch students, Department of Geography, Shivaji University, Kolhapur, Maharashtra, India

Abstract

Agriculture plays a very important role in the economic development of the country where 70% of the population is directly or indirectly depends on agriculture for their survival. Land use and cropping pattern is an important aspect of geographical studies particularly relevant to agricultural geography. The growth of population leads to change in land use and cropping pattern. This paper an attempt is made to analysis the changes in land use and cropping pattern of Kolhapur district. In the last two decades (1990-91 and 2000-01) the scenario of land use and cropping pattern in the district were drastic change because of population growth. In 1990-91, out of the total agriculture area 66.71% of agriculture land was under food crops, but in 2000-01 the food crops cultivated area were decrease to 57.41% because remaining agriculture shifted to commercial crops like sugarcane, oilseeds and vegetables etc. Whereas, in 1990-91 the area under non-food crops is decrease up to 33.29% and it increase up to 42.59% in 2000-01, because agriculture trend change towards the food crops to cash crops. The cropping pattern of the district has changed towards commercialization due to increase in irrigation facilities, transport, communication, market facilities etc. The diversified nature of land use pattern and cropping pattern of the Kolhapur district has increased the cropping intensity of the land.

KEYWORDS; Agriculture, Land use, Cropping pattern, Crop intensity.

Introduction

Agriculture plays a very important role in the economic development of the country where 70 % of population is directly or indirectly depends on agriculture for their survival. Land is the important natural resource, which support evolution and development of all types of life on land. Land use especially affected by natural and human factors. So, the uses of land have been increasing as the science and technology increase. The developing countries need and improve the exploitation of land resource to achieve the maximum output crops and the productive capacity of the land. Land use and cropping pattern is an important aspect of geographical studies particularly relevant to agricultural geography. Given the fixed amount of land available on the earth and the simultaneous increases in population and the pressure on land has been increasing tremendously that's why the leads to change in land use and cropping pattern during 10 years. In this paper an attempt is made to analyses the change in the land use and cropping pattern during last two decades (1990-91 and 2000-01) in Kolhapur district.

Objective

This paper aims to evaluate changing land use, agriculture cropping pattern and crop intensity and to examine land use change in Kolhapur district during the 1991-2001.

Database and methodology

The secondary data have been collected from socio-economic abstract of Kolhapur district for 1990-91 and 2000-01 to analyses the land use and cropping pattern. Simple statistical techniques (percentage and average) are used to analyses the changing trend in cropping pattern and crop intensity.

$$\text{Crop intensity} = \frac{\text{Gross cropped area}}{\text{Net sown area}} \times 100$$

Study Area

Kolhapur district is located between 15 43' and 17 17' North latitude and 73 40' and 74 42' East longitude of southern Maharashtra. The region receives average rainfall 1900 mm. The total numbers of villages are 1196 and towns are 18. The district is consisting of 12 revenue tehsil's namely Shahuwadi, Panhala, Hatkanangale, Shirol, Karveer, Gaganbavada, Radhanagri, Kagal, and Bhudargad. The district has population of 3523162 (2001) census and it has 776261 sq. km of geographical area. Out of the total geographical area of the district 54.86 present of area is used for the agriculture in 1990-91 but it increase to 57.68 % in 2000-01. In the last two decades the scenario of land use pattern and the cropping pattern in the district were change drastically.

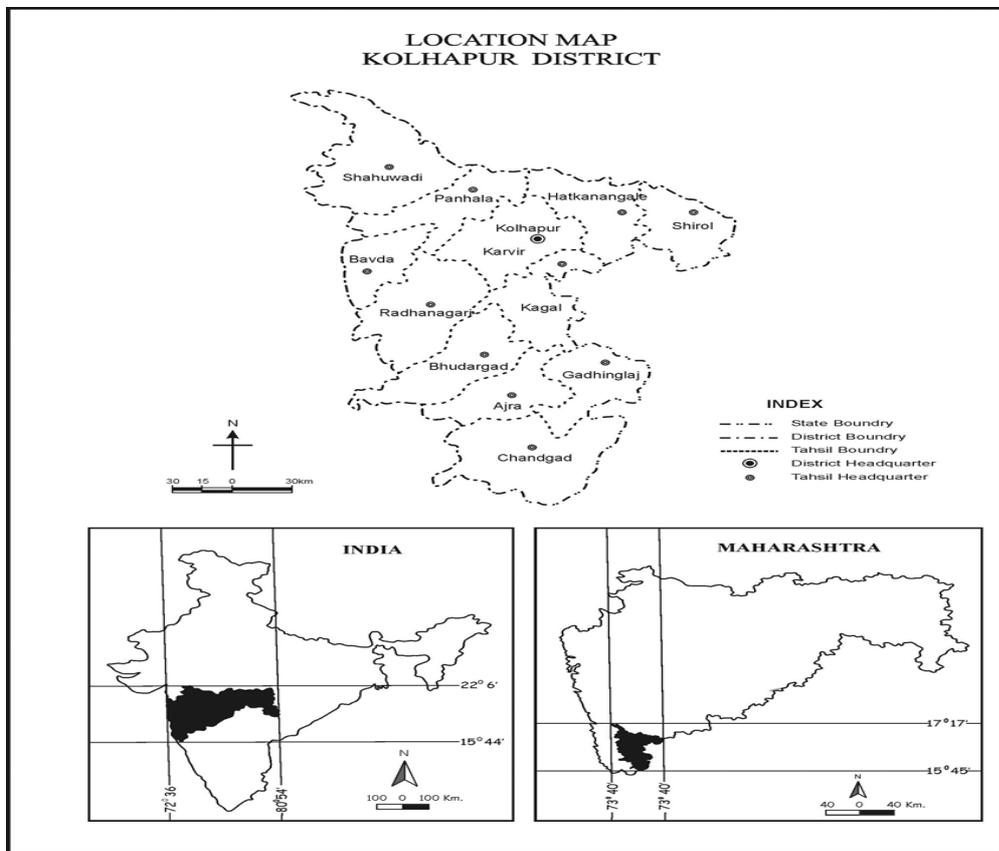


Fig. 1

Land utilization pattern

According to 1990-91, the district as a whole had 54.86 % of its area under cultivation, but scenario was changed in 2000-01, in the study area about 57.68 % of the area under cultivation. In this decade the agriculture area that is net sown area was increased to 2.82 % because decrease current fallow 2.41 % to 0.85 % and total non-cultivable land excluding follow land decrease to 11.23 to 9.79 %. In 2000-01, Gadhinglaj tahsil which had comparatively high (87.99 %) area under cultivation, in Radhanagri low area of current and other fallow land together constituted only 0.34 % of total area. It has been noticed that the increased in the irrigation leads to decrease the area sown more than once i.e. 4.69 % in 1990-91 to 1.55 % in 2000-01.

Table-1; Land utilization pattern in Kolhapur district

Land Utilization pattern	1990-91		1990-91		Percentage (increase/Decrease)
	Area	%	Area	%	
Total geographical area	776261	100	776261	100	0
Total reported area for the land utilization	776261	100	776261	100	0
Forest	149360	19.24	140100	18.05	-1.19
Not available for cultivation	29330	3.78	35666	4.60	+0.82
1)area put for non-agricultural use	35167	4.53	42239	5.44	+0.91
2)barren &uncultivable land					
Total non-cultivable land excluding follow land	87177	11.23	75981	9.79	-1.44
Fallow lands					
1)current fallow	18714	2.41	6605	0.85	-1.56
2)other fallow	30676	3.95	27906	3.60	-0.36
Gross cropped area	462231	59.55	567976	73.17	+13.62
1)net sown area	425837	54.86	447764	57.68	+2.82
2)area sown more than once	36394	4.69	120212	15.49	+10.80

Source: socio-economic abstract of Kolhapur district, (1990-91&2000-01), Note; Area in hectares

The total area under forest in the study area is 19.24 % (1990-91) and decreased to 18.05 % (2000-01). Out of this Bhudhargad tahsil has highest forest area i.e. 10626 hectares (37.64 %).But lowest is reported in shirol tahsil i.e. 899 (1.77 %) in 1990-91 and in 2000-01 is karveer tahsil i.e. 804(1.20 %)

The total non-cultivable land excluding follow land occupying only about 9.79 % of total area of the district, this area is varies from tahsil to tahsil. Out of this Shahuwadi and Radhanagri is highest i.e. 19.24 %, but lowest is 1.87 % reported in Gadhinglaj tahsil in 2000-01. The area put to non-agriculture uses highest in Karveer (8.62 %) and lowest in Gaganbavada (0.92 %)

Changing pattern of agricultural land use

In order to study the changes in agricultural land use pattern in Kolhapur district compared the land use data of 1990-91 and 2000-01(table-1). Area put for non-agricultural use, barren and uncultivable land, net sown area, area sown more than once all these showed increasing trend. Some categories showed decreasing trend in forest (1.29 %), total non- cultivable land excluding follow land (1.44 %), current fallow (1.56 %), and other fallow (0.36 %) area are decreased. The total net sown area had increased to 2.82 % (1990-91 and 2000-01) in 10 years period. In the study region land put for non-agriculture uses are increased. The barren and uncultivable land decline in (4.06 % to 3.24 %), but increase in the chandgad tahsil (1.53 % to 8.15 %) but Shahuwadi and, Hatkangale tahsil the barren and un-cultivable land is unchanged. In case of current fallow land is decrease 1.56 % and other fallow 0.36 % over period of ten years. The highest forest area is found in Gaganbavada (37.64 %) and lowest is in Karveer (1.2 %) in 2000-01. The forest area may decline by the expansion of cultivated area. The forest covered area is unchanged in Panahala, Hatkangale, Gaganbavada, and Radhanagri.

Cropping pattern

In study region crops are growing in Kharif season because the region receives most of its rainfall during this time. This region grows crops like Rice, Wheat, Jowar, Makka, Nachini, Tur, Groundnut and gram. Out of this total agriculture area of the district about 57.41 % of agriculture area is devoted to food crops and remaining 42.59 % of land is under non-food crops. Cereals crops dominated by Rice 18.80 % .Groundnut (12.00%) and Sugarcane (17.04%) are the most important crops in the district. These two commercial crops are together nearly one-third of cropped area in the study region. Hence, this part of the Rice belt is included in the Rice-Groundnut-Sugarcane region. In tahsil level, distribution of Rice growing area occupies largest proportion of net sown area is reported in Gaganbavada (15599 hectares) and it followed by Gadhinglaj (14277 hectares), Karveer (13121 hectares), Bhudhargad (11997 hectares) and Radhanagri (11148 hectares). Highest pluses area is occupying in Hatkangale (4317 hectares) and lowest pluses area occupying in Gaganbavada (550 hectares). Oilseeds composed of Groundnut, Sunflower and remaining all others are grown over 23.60 % of cropped area in the study region. Among oil seeds, Groundnut (68130 hectares) is the major oilseed in study region, it occupies 12.00 %. Fruits growing area are occupying 13012 (2.29 %) hectares in study region; out of this highest area is recorded in Chandgad (3860 hectares), Ajara (2011 hectares) and Gadhinglaj (1480 hectares). Vegetables growing area are occupying 5587 (1 %) hectares in study region; out of this highest area is recorded in Hatkangale (944 hectares), Kagal (776 hectares) and Shirol (823 hectares).

Changes in Cropping Pattern

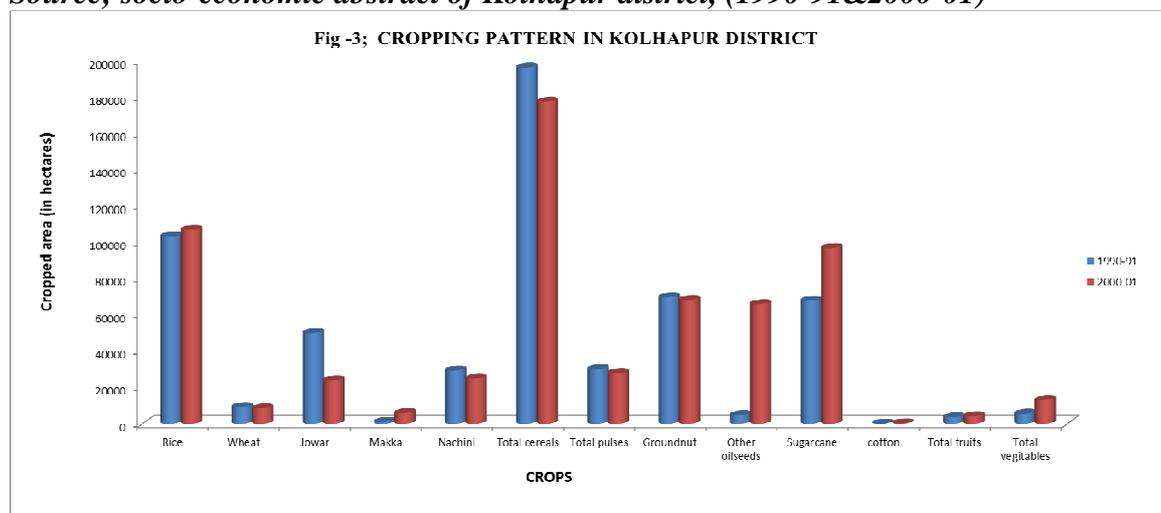
Over a decade, marginal increase in net sown area was affected on changing cropping pattern in Kolhapur district. The proportion of area under food crops, decline from 66.71 to 57.41 %. While the area under non-food crops increased from 33.29 to 42.59 %. However, actual area under food crops has net decreased by 9.29 % and non-food crops in the district have increased by 9.29 %. It indicates that, the growth in area under total food crops could not keep pace with the growth of gross cropped area (+13.62) .The total area under cereals decreased 42.41% to 31.20 % and the total

pluses decreased 6.51 % to 4.92 % from 1991-2001. The Rice (-3.51), wheat (-0.49), Jowar (-6.61), Nachini (-1.98) are cereal crops decreased .The non-food crops Sugarcane (2.37) and other oilseeds (10.37), cotton (0.03) and total vegetables (1.08) hincrease in area. The total area under pulses decreased marginally (1.59 present) from 1991-2001.

Table no. 3; CROPPING PATTERN IN KOLHAPUR DISTRICT

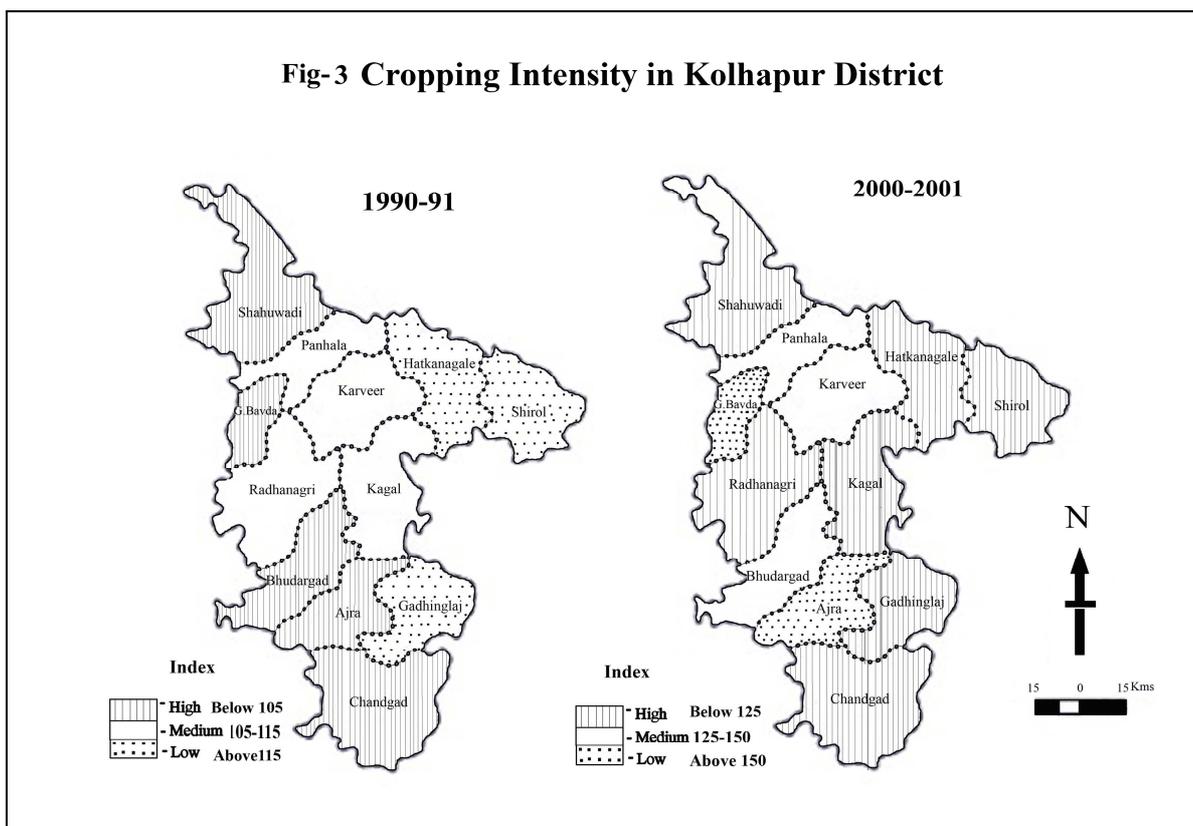
	1990-91		2000-01		Percentage difference (Increase/decrease)
	Cropped area(in hectares)	Percentage To gross cropped area	Cropped area(in hectares)	Percentage To gross cropped area	
Rice	103118	22.31	106768	18.80	-3.51
Wheat	9216	1.99	8530	1.50	-0.49
Jowar	49994	10.82	23910	4.21	-6.61
Makka	1050	0.23	5886	1.04	+0.81
Nachini	29343	6.35	24809	4.37	-1.98
Other cereals	829	0.18	5669	1.00	+0.82
Total cereals	196050	42.41	177220	31.20	-11.21
Total pulses	30103	6.51	27947	4.92	-1.59
Total food grains	226153	48.93	205167	36.12	-12.80
Total food crops	308335	66.71	326100	57.41	-9.29
Groundnut	69574	15.05	68130	12.00	-3.06
Other oilseeds	4771	1.03	65912	11.60	+10.37
Sugarcane	67802	14.67	96800	17.04	+2.37
Cotton	99	0.02	303	0.05	+0.03
Total fruits	3656	0.79	4273	0.75	-0.04
Total vegetables	5587	1.21	13012	2.29	+1.08
Total non- food	153896	33.29	241876	42.59	+9.29
Gross cropped area	462231	100	567976	100	

Source; socio-economic abstract of Kolhapur district, (1990-91&2000-01)



Intensity of Cropping

Intensity of cropping depends upon water supply climate, soil, favourable climate, growing population and lack of irrigation facilities that hinder the cropping intensity, but where the irrigation facilities are more the cropping intensity is high. The net sown area has increased from 54.86 to 57.68 %. The cropping intensity is high in Shahuwadi, Gaganbavada, Bhudhargad, Ajara, Chandgad in 1991 and it change in 2001, Shahuwadi, Hatkangale, shirol, Radhanagri, Kagal, Gadhinglaj and chandgad. The cropping intensity is medium in Panahala, karveer, Radhanagri, Kagal in 1991 and it change in 2001, Panahala, Karveer and Bhudhargad. The cropping intensity is low in Hatkangale, shirol, Gadhinglaj in 1991 and it change in 2001, Ajara and Gaganbavada. In the study area, which tahsil has recorded high cropping intensity



they had low percentage of area sown than once, because more area brought under sugarcane cultivation (multiyear crop), where the low percentage of cropping intensity recorded tahsil have high percentage of area sown more than once, because fruits and vegetables area is more (short period crops).

Conclusion and Recommendations

The increase population, the pressure on land to cause diversified nature of land use pattern and cropping pattern of the Kolhapur district has increased the cropping intensity of the land. The cropping pattern of the district has changed towards commercialization due to increase in irrigation facilities, transport, communication, market facilities etc. In present scenario the study region needs to adaptation of afforestation, changing in the cropping pattern, rural communications, development of farmers and labourers. Hence, to promote agriculture development and restore the ecological balance in the region.

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