Juni KhyatISSN: 2278-4632(UGC Care Group I Listed Journal)Vol-10 Issue-5 No. 15 May 2020GEOGRAPHICAL STUDY OF SUGARCANE AND GROUNDNUT CROPS

UNDER LANDUSE IN PARBHANI DISTRICT (MS).

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Introduction:

In this paper an attempt has been made to analyse the two crops under agricultural landuse at tahsil level in Parbhani District of Maharashtra. Agricultural landuse gives a wider choice for production of variety of crops in any region in order increase production related activities. It is just opposite of crops specialization. The crops agricultural landuse was studied for twelve years (2001-2006 to 2007-2012) in order to find out two crops agricultural landuse. There are three cropping seasons in study region, namely kharif, rabbi and summer. Kharif season begins in June or July and ends in September or October whereas rabbi season starts from March and end in may. Groundnut is the major kharif crops grown in study region while Sugarcane are grown in study region in both kharif and rabbi seasons in Parbhani district. Agricultural landuse grows on large number of crops which are practiced in rain fed land to reduce the risk factor of crop failures either of drought or less rain. Raising a variety of crops on arable land is known as crops agricultural landuse. It is the reflection of physical, socio economic and techno organization inputs. Crops agricultural landuse indicates multiplication of agricultural crops which involves intense competition for region, scope for crop rotation and effect of double cropping. In most of the extensive agricultural parts in world agricultural landuse, it is a common feature due to irrigation, use of fertilizers and pesticides, high yielding varieties, mechanization and technology. Besides climate, farmer's attitude and local surroundings are forced farmers two crops agricultural landuse. These obtained data was later on converted into percent to total geographical area and then categorized into various groups for identification of agricultural landuse. The Sugarcane and Groundnut crops volume of change has studied for twelve years in present paper.

The Study Area:

Parbhani is chosen for a study region. Parbhani district located between $18^0 45$ ' north to $20^0 01$ ' North latitudes and $76^0 13$ ' East to $77^0 26$ ' East longitude. Administratively, it is bounded on the north by Hingoli District, on the east by Nanded, on the south by Latur, on the west by Beed and Jalana districts. The area of study region is 6511 km^2 , which is 2.11 percent of the

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whole area of the Maharashtra state. The population in the study region is 1527715 (2001 census) and 1836086 population in 2011 (Feb-2019 as per aadhar – 1964700) which is 1.63 percent of total population in Maharashtra. The study region is administratively subdivided in to nine tahsils respectively Parbhani, Pathri, Manvat, Selu, Jintur, Gangakhed, Palam, Sonpeth and Purna,.



Map:01 Parbhani District - Location and Boundaries

Objective of the Study:

The present research Paper has been undertaken to make on in-depth and comprehensive study of two crops agricultural land use in Parbhani district by evaluating following objectives: 1. To study the Sugarcane and Groundnut crops under agricultural landuse of study region

2. To study the regional variation and volume of change in Sugarcane and Groundnut crops agricultural land use of study region.

3. Suggesting remedial measures for better Sugarcane and Groundnut crops agricultural landuse of study region.

Data Base and Methodology:

The given data was collected though primary and secondary sources, Secondary data obtained from socio-economic review, district census, were processed and presented by statistical and cartographic techniques, Researcher studied spatial as well as temporal changes in area under major Sugarcane and Groundnut crops agricultural land use in Parbhani district. From 2001-2006 to 2007-2012 for the present research paper work author has been used the following method to calculate different aspects.

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Explanation:

Spatial analysis of Sugarcane and Groundnut crops under agricultural land use in Parbhani district. Agriculture is the main economic activity in the study region. 70.50 % population is engaged in agriculture in study region. Groundnut and Sugarcane are grown in study region in both kharif and rabbi seasons in Parbhani district Due to the location and physical setting, Irrigation and soil the agricultural land use pattern of the region under study differs from tahsil to tahsil crop under agricultural land. The pattern of agricultural land use was shown in map. Table appears to have been resulted from a process of land exploration within the frame of crops extension of the under area change of volume in 2001-2006 to 2007-2012. Physical and socio-economic complex are modified by the expansion of irrigation and growth of population. There is a change in geographical factors as physical phechears, soil, slope, climate, temperature, and rainfall trend study of cropping in the entire study region. Tahsilwise trends in agricultural land use pattern in Parbhani district is shown in table with this Groundnut and Sugarcane are generalized picture of two crops agricultural land use pattern of the study region.

Table:01 Tahsilwise Volume of Change in Sugarcane and Groundnut crops under landuse in Parbhani District (Area in 000 hectare)

Tahsil /	Sugarcane Crop			Groundnut Crop		
Landuse	2001-	2007-	Volume of	2001-	2007-12	Volume of
crops	2006	2012	change in %	2006		change in %
Parbhani	4559	4279	-0.05	1346	17717	+ 9.25
	2.46	2.41		0.73	9.98	
Gangakhed	881	894	+0.43	490	10900	+16.50
_	0.97	1.40		0.54	17.04	
Pathri	1540	3472	+2.42	430	4167	+5.01
	2.27	4.69		0.63	5.64	
Jintur	955	48	-1.04	643	19600	+15.95
	1.08	0.04		0.73	16.68	
Purna	1135	4771	+4.02	605	12083	+13.40
	1.61	5.63		0.86	14.26	
Palum	679	168	-0.63	315	10883	+16.19
	0.89	0.26		0.41	16.60	
Selu	4383	337	-3.82	3006	16083	+11.98
	4.13	0.31		2.83	14.81	
Sonpeth	1634	1707	-0.28	205	8350	+12.22
-	2.85	2.57		0.36	12.58	
Manvat	800	1021	-1.52	495	4250	+4.44
	3.04	1.52		1.88	6.32	
Parbhani	16566	16697	-0.13	7535	104033	+11.62
District	2.15	2.02		0.98	12.60	

Source: Agriculture Department, Land Record Office, Parbhani & Computed by author.

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1. Sugarcane Crop

Sugarcane requires tropical climate. The temperature 20^{0} to 26^{0} centigrade's is suitable for sugarcane cultivation. The rainfall between 1100 to 1500 mm is adequate for the growth of sugarcane. Sugarcane was cultivated on 2.15 percent area in 2001-2006 on irrigation in central and west parts in study region. The distribution of Sugarcane in study region is mainly influenced by soil types, relief and rainfall amount. In 2001-2006, Sugarcane is sown on 16566 hectare (2.15%) of the gross cropped area of the Parbhani district was under Sugarcane crop area. It is increased from 16566 hectare (2.15%) to 16697 hectare (2.02%) of the total gross cropped area but decreased averagely Percentage area in during the investigation period in the study region.





The area under Sugarcane was below 1 percent Sugarcane crop area was found in Gangakhed and Palum tahsils whereas 1 percent to 2 percent Sugarcane was found in Jintur and Purna tahsils while above 2 percent area under Sugarcane crop area was observed in Parbhani, Pathri, Sailu, Sonpeth and Manvat tahsils in the study region in during 2001-2006 (Map No.2A).

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The highest area is found in Sailu tahsil (4.13%). The lowest area under Sugarcane is found in Palum tahsil (0.89%). In 2007-2012, Purna (5.63 percent) tahsil has found higher percent area under Sugarcane. After a span of twelve years, the area under Sugarcane above 2 percent area under Sugarcane was observed in Parbhani (2.41 percent), Pathri (4.69 percent), Purna (5.63 percent) and Sonpeth (2.57 percent) tahsils whereas 1 percent to 2 percent Sugarcane area was found in Gangakhed (1.40 percent) and Manvat (1.52 percent) tahsils while below 1 percent Sugarcane crop area was recorded in Jintur (0.04 percent), Palum (0.26 percent) and Sailu (0.31 percent) tahsils during 2007-2012 in the study region (Map No.2B).

Parbhani district is under Sugarcane area decreasing volume of change in 0.13 percent in this investigation period 2001-2006 to 2007- 2012. Totally Sugarcane under Sugarcane crop area is decliner this study period of Parbhani district. Both positive and negative changes were observed in area under Sugarcane crop area in the study region. Below 1 percent positive change in Sugarcane crop area was experienced in Gangakhed (0.43 percent) tahsil whereas any tahsil not recorded moderate area under Sugarcane between 1 percent to 2 percent area and above 2 percent area was observed in Pathri (2.42 percent) and Purna (4.02 percent) tahsils. Below 1 percent negative change in area under Sugarcane crop area observed in Parbhani (0.05 percent) Palum (0.63 percent) and Sonpeth (0.28 percent) tahsils while Jintur (1.04 percent) and Manvat (1.52 percent) tahsils have negative change recorded moderate area under Sugarcane between 1 percent to 2 percent area between 1 percent to 2 percent) tahsils have negative change recorded moderate area under Sugarcane between 1 percent) tahsils have negative change recorded moderate area under Sugarcane between 1 percent to 2 percent) tahsils have negative change recorded moderate area under Sugarcane between 1 percent to 2 percent) tahsils have negative change recorded moderate area under Sugarcane between 1 percent to 2 percent) tahsils have negative change recorded moderate area under Sugarcane between 1 percent to 2 percent area wheras above 2 percent negative change noticed in only Sailu (3.82 percent) tahsil in the study region in during the period under study (Map No.2C).

2. Groundnut Crop

This is the leading crops in the study region and it is raised in Rabbi and Khrip season in the Parbhani district. Groundnut is a main crop grown on light, sandy loam soil type. This crop requires warm climate and annual rainfall between 500 to 1000 mm. The pods ripen 120 to 150 day after seeds are planted. If the crop is harvested too early, then pods will be unreeled. If they are harvested late, pods will snap off at the stalk and will remain in soil. Groundnut is susceptible to contamination during growth and storage. Groundnut is grown in Khrip as well as in summer season in study region on 0.98 percent area in 2001-06 (Map No.3A). It is increased from 7535 hectare to 104033 hectare of the total gross cropped area in during the investigation period in the study region. The area under Groundnut was below 8 percent Groundnut crop area was found in Parbhani, Gangakhed, Pathri, Jintur, Purna, Palum, Sailu, Sonpeth and Manvat tahsils in the study region in during 2001-2006 (Map No.3A). The highest area is found in Sailu tahsil (2.83%). The lowest area under Groundnut is found in Sonpeth tahsil (0.36%). This crop area has increased 11.62 percent during study period.

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Map No. 3 (A & B) Tahsilwise Distribution of Groundnut

In 2007-2012 (Map No.3B), Gangakhed (17.04 percent) tahsil has found higher percent area under Groundnut. After a span of twelve years, the area under Groundnut above 16 percent area under Groundnut was observed in Gangakhed (24.59 percent), Jintur (16.68 percent) and Palum (16.60 percent) tahsils whereas 8 percent to 16 percent Groundnut area was found in Parbhani (9.98 percent), Purna (14.26 percent), Sailu (14.81 percent) and Sonpeth (12.58 percent) tahsils while below 8 percent Groundnut crop area was recorded in Pathri (5.64 percent) and Manvat (6.32 percent) tahsils in the study region.

Parbhani district is under Groundnut area increasing volume of change in 11.62 percent in this investigation period 2001-2006 to 2007 - 2012 (Map No.3C). Totally Groundnut under Groundnut crop area is incliner this study period of Parbhani district. The positive changes were observed in area under Groundnut crop area in the study region. Below 6 percent positive change in Groundnut crop area was experienced in Pathri (5.01 percent) and Manvat (4.44 percent) tahsils whereas Parbhani (9.25 percent) and Sailu (11.98 percent) tahsils have recorded moderate area under Groundnut between 6 percent to 12 percent area and above 12 percent area was observed in Gangakhed (16.50 percent), Jintur (15.95 percent), Purna (13.40 percent), Palum

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(16.19 percent) and Sonpeth (12.22 percent) tabsils in the study region in during the period under study.

Conclusion:

1. Sugarcane was cultivated on 2.15 percent area and Groundnut is grown on 0.98 percent area in 2001-06. Groundnut is increased from 7535 hectare to 104033 hectare of the total gross cropped area in during the investigation period.

2. Sugarcane covers 2.15 percent in 2001-06 in Parbhani district. The irrigation facility has increased during study period but rain is decline therefore sugarcane has not increased, so it has decline 0.13 percent dawn in 2007-12.

3. Groundnut area found increasing trend while Sugarcane Crops have declined from 2001-06 to 2007-2012 study period in study region due to uneven rainfall distribution.

4. Soil types, irrigation, rainfall distribution, transport and proximity of market centres are major controlling factors for changing the spatio-temporal landuse in study region.

5. Therefore, farmers in this area should be guided and trained for the advanced method of irrigation such as drip, sprinkler etc. which saves water and decreases threat of salinities. Purna, Parbhani, Jintur and Sailu tahsils have scarcity during summer season. It is suggested that, farmers in these tahsils should use drip irrigation. Overdoses of chemical fertilizers are responsible for soil degradation in Pathri, Gangakhed tahsils. The use of organic agriculture and fertilizer management programme is one of prime requirement in study region.

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