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A Geographical study of cropping pattern in kalwan Tahsil of Nashik District

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Abstract

The present paper aims to analyse the geographical study of cropping patterns in Kalwan Tahsil agriculture is the backbone of the Indian Economy. It provides livelihood. India's major workforce is agriculture, but agriculture depends upon the North-West monsoon, which is uncertain and gambles. The climate in temperature, rainfall, soil, and irrigation influence on the agriculture. The Kalwan tahsil is located North part of the Nashik district. Irrigation is a basic demand for agricultural development. Agriculture is a major and primary economic activity of man in Kalwan Tahsil, nearly 90.73% of the total population of the Kalwan Tahsil is directly or indirectly engaged in agriculture Kalwan Tahsil belongs to the Nashik district of Maharashtra. It extends between 20° 20' 15" to 20° 40' 23" North latitude and 73° 45' 6" to 74° 05' 22" East Longitude The total Geographical area of the taluka is 859.7km². The average height of the Kalwan taluka is 609 meters from the mean sea level. in the western side of the important river basins, Girna and Punad rivers this area has a large catchment area. where agriculture is a dominant activity along with animal husbandry. In Kalwan taluka, crops are grown in large quantities during the kharif and rabi seasons. Six crops have been considered for crop combination analysis. rice, oilseeds, maize, soybean, vegetable and onion etc. are the major crops cultivated in this Kalwan taluka.

Key Words- various land use, cropping land use, cropping Pattern, agriculture development.

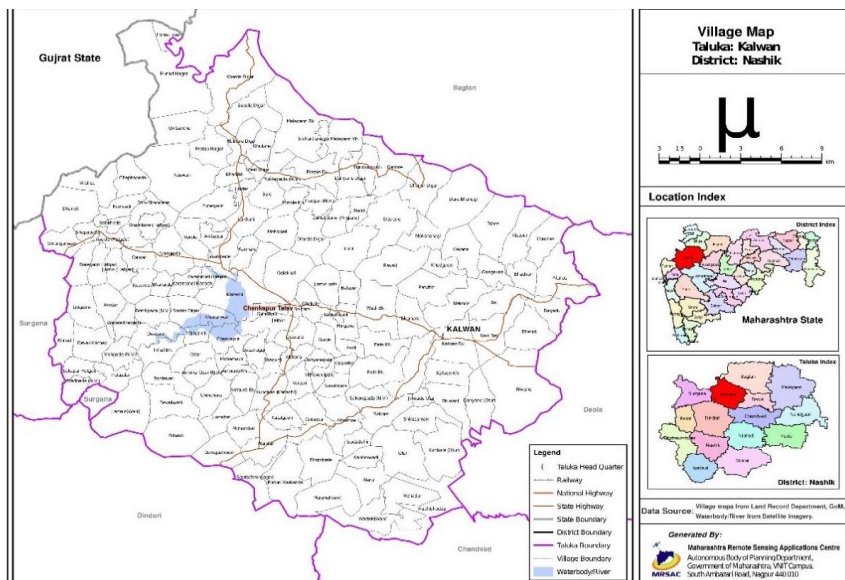
Introduction

The arrangement of land units into various categories based upon the properties of land or its suitability for some particular purpose. Generally, land is used for different activities e.g. agricultural activities, forest, livestock, settlement, construction of roads etc. Kalwan is a Tahsil of Nashik district in the Indian state of Maharashtra. The total population of Kalwan, as per the 2011 Census is 208,422. Literacy is 57.52 per cent, 56.84 for males and 43.16 for females.

Objectives: The main objectives of the present paper are as follows.

- To study the existing land use pattern
- To analyse the cropping pattern between the period 2011-2012 to 2022-2023

Study area:



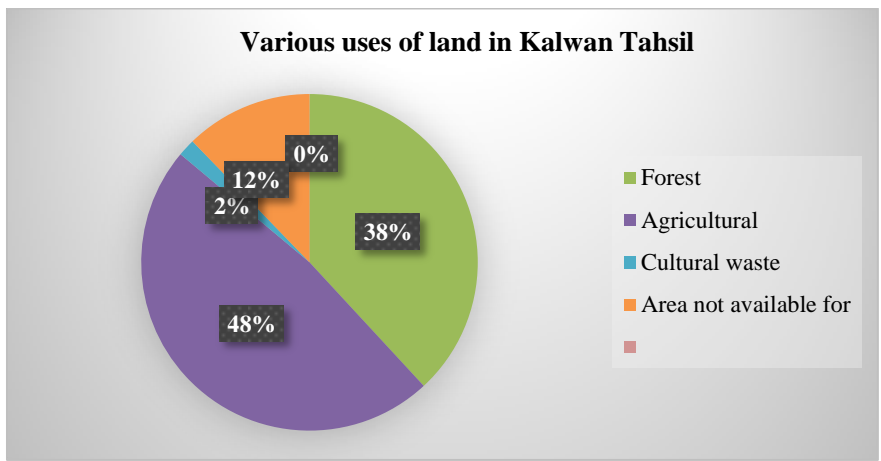
Location Map Study Area

The area under the present investigation includes Kalwan Tahsil of Nashik district. Kalwan Tahsil is situated in the Punad & Girna sub-basin of the Tapi basin. It extends between 20° 20' 15''- 20° 40' 23''N.lat and 73° 45' 6''-74° 05' 22''E. long. Covers 86670.64 Hectares area. Administratively, Tahsil divided the circle into 35 sub-divisions including 150 villages. Tahsil is surrounded by the Dang district of Gujarat state on the west, Surgana Tahsil of Nashik district to the west Dindori Tahsil of the Nashik district on the south-west, Deovla to the east and Baglan Tahsil on the north.

Database and Methodology:

The present study is based on Primary and secondary sources of data. The data on the various land uses has been collected from the Tahsil office, District statistical abstracts, the District Gazetteer and the Nashik district census handbook of 2011 and 2023. Apart from these some of the data also have been generated from the field survey by adopting the various statistical techniques and charts, graphs and maps prepared The Kalwan taluka has been taken as a unit for analysis of the cropping pattern in the study region. To study the changes in Agricultural land use patterns over time and in different decades the percentage of area under various categories of land use to the total reported area of Kalwan was worked out and results were interpreted.

Sr. no	Land use	Hectares	Percentages (%)
1	Forest	33040.71	38.13
2	Agricultural	41581.43	47.98
3	Cultural waste	1443.63	1.67
4	Area not available for cultivation	10604.87	12.2
	Total geographical area	86670.64	100



For the understanding of the land use of Kalwan Tahsil land use data for previous decades also have been collected from the census between the period 2011.

Cropping Pattern:

Cropping pattern refers to the proportion of land under cultivation of different crops at different times. This indicates the time and arrangement of crops in a particular land area. Any change in the cropping pattern would cause:change in the proportion of land under different crops

Sr. no	Crop Name	2011-2012		2022-2023	
		(Hectare)	(%)	(Hectare)	(%)
1	Rice	4222	10.15%	3147	7.56%
2	Wheat	3453	8.30%	3575	8.59%
3	Jawar	389	0.93%	282	0.67%
4	Bajara	4393	10.56%	2156	5.18%
5	Maize	13718	32.99%	17624	42.38%
6	Vari	634	1.52%	181	0.44%
7	Nachni	2127	5.11%	834	2.00%
8	Total Cereals	29300	70.46%	27739	66.71%

9	Gram	1555	3.73%	2293	5.51%
10	Mung	43	0.10%	746	1.79%
11	Udid	740	1.77%	703	1.69%
12	Kulith	745	1.79%	84	0.20%
14	Peas/chickpeas	27	0.06%	176	0.42%
16	Pulses	3487	8.38%	5449	13.10%
17	Total Foodgrains	32787	78.85%	33198	79.83%
18	Sugarcane	2311	5.55%	831	1.99%
19	Mirchi	1332	3.20%	585	1.40%
20	Grapes	102	0.24%	6.58	0.01%
21	Onions	4950	11.90%	26769	64.37%
22	Tomato	916	2.20%	1158	2.78%
23	Groundnut	1027	2.46%	1738	4.17%
24	Soybeans	3511	8.44%	13253	31.87%
25	Vegetables	6042	14.53%	28241	67.91%

Source: Socio-Economic survey Nashik District 2011-12 to 2022-23

In this study area, rice, wheat, and maize were the major food crops in the total crop area in 2011–12, occupying 10.15%, 8.30%, and 32.99% of the area, respectively. Apart from this, 14.53% is vegetable area, 78.85% is food grain area, 70.46% is cereal pulse area, 8.44% is soybean area, and 2.46% is groundnut area in oilseeds. 11.90% is onion area in cash crops.

Also, in 2022-2023, 64.37% of the area under onion crop was the main cash crop in this taluka, while maize, cereals, pulses, food grains, and oilseed crops covered 42.38%, 66.71%, 79.83%, and 31.87% of the area, respectively.

Along with this, in the western part of the taluka, rice, gram, kulith, and udid are cultivated in the areas with high rainfall, and in the areas with irrigation facilities, maize, wheat, and onion are grown. In the pulses group, tur, mung, gram, kulith, udid, and other crops are grown in most of the areas. Among oilseeds, sunflowers, groundnuts, soybeans, and vegetables are grown in the horticultural areas of the taluka. Cash crops like sugarcane, grapes, and vegetables are also grown in various parts of the taluka.

Sr. no	Crop Name	2011-12 to 2022-23 (Hectare)	2011-12 to 2022-23 (%)
1	Rice	1075	-2.59%
2	Wheat	122	0.29%
3	Jowar	107	-0.26%
4	Millet	2237	-5.38%
5	Maize	3906	9.39%
6	Vari	453	-1.09%
7	Nachani	1293	-3.11%
8	Cereals	1561	-3.75%
9	Gram	738	1.78%
10	Mung	703	1.69%
11	Udid	37	-0.08%
12	Kulith	661	-1.59%
14	Peas/chickpeas	149	0.36%
16	Pulses	1962	4.72%
17	Foodgrains	411	0.98%
18	Sugarcane	1480	-3.56%
19	Mirchii	747	-1.80%
20	Grapes	95.42	-0.23%
21	Onions	21819	52.47%
22	Tomato	242	0.58%
23	Groundnut	711	1.71%
24	Soybeans	9742	23.43%
25	Vegetables	22199	53.38%

There are many reasons why the cropping pattern in this Kalwan taluka has changed between 2011-2012 to 2022-2023 Irrigation facilities and an increased area under irrigation have changed how farmers view agriculture.

When crops are taken into account, onion (52.47%), vegetables (53.38%), soybeans (23.47%), and maize (9.39%) have increased in 12 years. The area under cereals, pulses, vegetables and cash crops has increased in Kalwan tehsil.

The area under the main pulses crops like mung, tur, and gram has also increased by about 1% to 2% during the same period. Also, rice (-2.59%), jowar (-0.26%), Varai (-1.26%), Nachni (-3), Udid (-0.8%), Kulith, and Bajra (-5.38%) have seen a decline in traditional crops and the area under cereal crops has decreased by 3.75%.

Conclusion:

A relationship has been established between land use and cropping patterns. The main emphasis is on establishing a relationship between cropping use.

Farmland Available at 49.6%. Subsistence farming is the primary economic activity of man, as is the case with migratory farming in forest and mountainous areas. A total population of about 90.73 Kalwan tehsil is directly or indirectly engaged in agriculture.

The pattern of agricultural development is not the same in all the villages of Kalwan tahsil.

The central level alluvial track in the Girna-Punad valley has a high level of agricultural area.

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Conflicts of interest

There are no conflicts of interest.

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