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Analysis of Land Holdings and cropping pattern in Karnataka

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Abstract

Analysis of land holdings and cropping patterns in Karnataka indicates a dominance of small/marginal holdings and a shift from traditional crops toward commercial crops due to urbanization and irrigation. The increasing diversion of Land for non-agricultural purposes signals a need for polices that protect productive agriculture land, especially as the state remains largely dependent on traditional food crops while transitioning toward commercial agriculture. This study analyzes the land holdings and cropping pattern in Karnataka; with a focus on understanding the dynamics of agricultural land use in the state. Using data from the need for polices secondary sources; the study examines the land utilization and Number of operational land holdings in Karnataka. Paper focuses on understanding the current trends and challenges in the state's agriculture sector. Land holding structure and cropping pattern play a crucial role in determining agricultural productivity and rural livelihood. Karnataka, being an agrarian state, has experienced significant changes in the distribution of land holdings and cropping patterns over the years. The present study aims to analyze the pattern of land holdings and cropping trends in Karnataka and to understand the changing dynamics of agricultural land use in the state. The study is based on secondary data collected from various government publications such as Agricultural Statistics reports, Census reports, Economic Survey, and Karnataka at a Glance.

Keywords: *Size of land Holdings, Land use patterns, cropping pattern*

Introduction

Land holding is one of the important characteristics determining agriculture growth. With improper distribution and conversion of agriculture land into unproductive sector does not only hinder growth but also harms the living standard of the common people who are dependent upon agriculture directly or indirectly. Thus, after the agriculture reforms, land holding reforms also played crucial role in the distribution of lands among the farmers. It could easily be identified from the various literatures available that over the period the scenario of land holding pattern has completely undergone a change. As a result of which small, marginal farmers have been enable the part of economic contribution at much faster rate. When the available land with the farmers is more, there tend to be growth of agriculture cropping pattern. As more and different crops can be grown with the available land and thus, over the period in Karnataka the pattern of cropping has simply gone in huge change. The following tables well explains the land holding and cropping pattern in Karnataka.

Objective of the study

1. To analyze the area of land utilization.
2. To analyze the number of operational land holdings.

Research Methodology

The present study is based on secondary data. The data has been collected from various government reports like Agricultural Statistics reports, Census of India, District at a Glance, District Census Handbook, Economic Survey, and Karnataka at a Glance.

Land utilization

Land is a vital resource that supports various human activities, including agriculture, forestry, urbanization, and infrastructure development. The way land is utilized has significant implications for the environment, economy, and society. Effective land utilization is essential for achieving sustainable development, ensuring food security, and mitigating the impacts of climate change. However, land utilization patterns in Karnataka are influenced by various factors, including demographic changes, urbanization, and agricultural modernization.

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Table: 01 Land utilization Statistics
(Area in Lakh hectares)

Classification	2016-17	2017-18	2018-19
Total Geographical Area	190.50	190.50	190.50
1.Forest	30.73	30.73	30.73
2.Not available for cultivation			
a. Land put ton on-agriculture use	14.95	15.01	15.05
B Barren and uncultivable land	7.93	7.93	7.69
3. Cultivable waste	4.00	4.00	4.03
4. Uncultivated land excluding fallow land			
a. Permanent Pastures and other grazing land	9.05	9.05	8.72
b. Miscellaneous tree crops ,groves not included under net area sown	2.75	2.74	2.51
5. Fallow land			
a. Current fallow	15.61	15.21	9.54
b. Other fallow	6.92	6.86	5.81
6. Net area sown	98.55	98.95	106.64
7. Total cropped Area	117.79	119.94	135.51
8. Area sown more than once	19.24	20.98	28.87
Cropping Intensity (%)	**119.52**	**121.21**	**127.07**

Source: Directorate of Economics and Statistics, GoK.

Table-01 shows the total geographical area of 190.50 out of which forest is covered by 30.73 and the net area sown has increased from 98.95 to 106.64 in 2016-17 to 2018-19, however in the period 2017-18 there was no change. But in terms of total cropped area has increased from 117.79 in 2016-17 to 135.51 in 2018-19. The table also reveals that area sown more than once where in 2016-17 it was 19.24, changed to 20.98 in 2017-18 and in 2018-19 increased to 28.87 this shows that due to growth in technology and advances in the fertilizer, drove the soil from infertile to fertile , thereby increasing the cropping intensity from 119.52 to 127.07 during 2016-17 to 2018-19. Another important part of the table reveals is the land that is not under the cultivation where barren and uncultivable land constitutes 7.93 in 2016-18 and declined to 7.69 in 2018-19. In terms of fallow land, there has been considerably decline.

Table: 02 Number of operational land holdings in Karnataka by category

I. Number of Operational Holdings ('000)						Change
Size Class	**1995-96**	**2000-01**	**2005-06**	**2010-11**	**2015-16**	**1995-96 to 205-16**
Marginal	2610	3252	3655	3849	4767	2157(45.25)
Small	1707	1909	2014	2138	2214	507(22.90)
Semi Medium	1204	1259	1278	1267	1193	-11(-0.92)
Medium	594	569	555	511	451	-143(-31.71)
Large	106	90	79	68	56	-50(-89.29)
Total	**6221**	**7079**	**7581**	**7832**	**8681**	2460(28.34)
Area of Operational Holdings ('000 hectares)						
Marginal	1248	1492	1651	1851	2080	832(40.00)
Small	2480	2742	2876	3020	3107	627(20.18)
Semi Medium	3298	3429	3468	3393	3188	-110(-3.45)
Medium	3490	3317	3206	2904	2569	-921(-35.85)
Large	1593	1327	1184	994	861	-732(-85.02)
Total	**12109**	**12307**	**12385**	**12161**	**11805**	-304(-2.58)
Average Size of Operational Holdings (hectares)						
Marginal	0.48	0.46	0.45	0.48	0.44	-0.04(-9.09)
Small	1.45	1.44	1.43	1.41	1.40	-0.05(-3.57)
Semi Medium	2.74	2.72	2.71	2.68	2.67	-0.07(-2.62)
Medium	5.88	5.83	5.78	5.69	5.69	-0.19(-3.34)
Large	15.02	14.74	14.99	14.71	15.45	0.43(2.78)
Total	**1.95**	**1.74**	**1.63**	**1.55**	**1.36**	-0.59(-43.38)

Source: Agricultural Census 2015-16, GoI

Table-02 shows the classes of farmers are bifurcated on the basis of their landholding by size in hectares that is those farmers with below 1 hectares are termed as marginal, Small between 1 to 2 hectares, Semi Medium 2 to 4 hectares, Medium 4 to 10 hectares and Large by Above 10 hectares. The table clearly depicts that number of farmers holding land below 1 ha are

considerably higher than the rest of the categorized farmers. Over the period, there is an increase in marginal and small farmers land holding from 1995-96 to 2015-16. However, in terms of semi-medium, medium and large farmers there is decrease in the number of land holding but in case of medium and large farmers, there is considerable decline in the land holding.

In terms of area, there is significant growth from marginal and small farmers, however, in case of medium and large farmers, there is significant decline. In case of average size of land holding, table clearly highlights that large categorized farmer holding large hectares of land where it has increased from (15.02) in 1995-96 to (15.45) in 2015-16. Likewise, in terms of medium farmers, declined to (5.69) from (5.88) in 2015-16 to 1995-96. Semi medium farmers increased from (2.1) to (2.74) during the same period and Small farmers by (1.40) to (1.45) where marginal farmers from (0.44) to (0.48) during the same period.

Table: 03 Cropping Pattern in Karnataka
(Area in Lakh hectares)

Sl. No.	Crops	Year				Change From B-A
		2016-17 (A)	2017-18	2018-19	2019-20 (B)	
1	Rice	10.34	9.93	11.99	12.48	2.14
2	Jowar	9.48	10.88	9.94	9.14	-0.34
3	Ragi	5.98	7.78	5.55	6.74	0.76
4	Maize	13.70	13.07	14.09	15.00	1.3
5	Bajra	2.42	2.31	1.94	3.39	0.97
6	Wheat	1.68	1.93	1.58	1.58	-0.1
7	Minor Millets	0.21	0.34	0.19	0.52	0.31
	Total Cereals:	**43.81**	**46.24**	**45.28**	**48.85**	5.04
1	Tur	12.14	8.85	15.61	16.26	4.12
2	Bengal gram	10.03	12.65	11.88	9.09	-0.94
3	Horse gram	1.24	1.73	1.84	1.70	0.46
4	Black gram	0.88	1.36	0.90	0.72	-0.16
5	Green gram	4.20	3.97	4.43	4.04	-0.16
6	Avare	0.47	0.67	0.38	0.47	0
7	Cowpea	0.66	0.99	0.62	0.46	-0.2
8	Other pulses	0.04	0.02	0.04	0.04	0
	Total Pulses	**29.66**	**30.24**	**35.70**	**32.77**	3.11
	Total Food grains	**73.47**	**76.48**	**80.98**	**81.62**	8.15
1	Groundnut	6.66	5.64	5.41	5.30	-1.36
2	Sesamum	0.35	0.36	0.25	0.31	-0.04
3	Sunflower	2.20	1.73	1.45	1.36	-0.84
4	Castor	0.09	0.07	0.03	0.04	-0.05
5	Niger	0.06	0.04	0.01	0.01	-0.05
6	Mustard	0.04	0.02	0.03	0.002	-0.038
7	Soya bean	3.18	2.77	2.62	3.37	0.19
8	Safflower	0.32	0.34	0.17	0.27	-0.05
9	Linseed	0.03	0.02	0.02	0.01	-0.02
	Total Oil seeds	**12.93**	**10.99**	**9.99**	**10.67**	-2.26
	Annual Crops:					0
1	Cotton	5.10	5.47	7.18	8.17	3.07
2	Sugarcane	4.88	5.33	7.94	7.65	2.77
3	Tobacco	0.90	0.95	0.88	0.95	0.05
	Total of above	**97.28**	**99.22**	**106.98**	**109.06**	11.78

Source: Directorate of Economics and Statistics, GoK.

Table-03 indicates cropping pattern in Karnataka for the period 2016-17 to 2019-20 that explains about the changes in the area covered under different crops and their production by hectares in lakh. In case of the cereal crops, maize and rice are heavily covered under the area where the area under maize has increased from 13.70 lakh hectares in 2016-17 to 12.48 in 2019-20 except 2017-18 where it was 9.93 lakh hectares. The least crop that is grown under the cereal crop is minor millets where the area coverage has increased from 0.19 in 2018-19 to 0.52 lakh hectares in 2019-20. The total area of cereal crops has increased from 43.81 lakh hectares in 2016-17 to 48.85 lakh hectares in 2019-20. With respect to pulses, the trend in the total area covered is not stagnate and progressive where the highest area covered was in 2018-19 with 35.70 lakh hectares and least 29.66 lakh hectares in 2016-17. The popular crop that is grown highly is tur with the increasing trend except for the year 2017-18 where the area covered was 8.85 lakh hectares less than the present area covering 16.26 lakh hectares in 2019-20. Next is the Bengal gram, where the trend is not stagnating and neither progressive which reduced to 9.09 lakh hectares from the highest 12.65 lakh hectares. To

the least crop that is covered under the area is Avare whose area has declined from 0.67 in 2017-18 to 0.47 lakh hectares in 2019-20. The combination of both cereals and pulses that is food grains has been increased from 73.47 lakh hectares in 2016-17 to 81.62 lakh hectares in 2019-20. In terms of oil seeds, groundnut which is popularly grown has the area covered decreased from 6.66 in 2016-17 to 5.30 lakh hectares in 2019-20. Next soybean with the highest area covered in 2019-20 by 3.37 lakh hectares and least 2.62 lakh hectares in 2018-19. The least crop that is covered is mustard and significantly reduced to 0.002 lakh hectares from 0.04 lakh hectares in 2016-17. The total oil seeds area coverage has not improved where at present 2019-20, it is 10.67 lakh hectares with its highest are covered 12.93 lakh hectares in 2016-17. Lastly, the annual crops like cotton, sugarcane, tobacco has increased. The aggregate of all the crops in the table signifies that area covered under agriculture has significantly improved from 97.28 lakh hectares in 2016-17 to 109.06 lakh hectares in 2019-20.

Conclusion:

The analysis of land holdings and cropping pattern in Karnataka revels a complex and dynamic agricultural land scape. The state's agricultural sector is characterized by small and marginal land holdings, with a significant proportion of farmers owning less than 2 hectares of land. The cropping pattern in Karnataka is dominated by food grains, particularly rice, maize, and ragi.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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