A STUDY ON CROPING PATTERN IN KARNATAKA

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Abstract
Indian agriculture had reached the stage of development and maturity much before now advanced countries of the world embarked on the path of progress. The share of agriculture in national income is often taken as an indicator of the economic development. Significant facts about the cropping pattern in India are having great role. This paper made an attempt to know the cropping pattern system in Karnataka, Agriculture land holding policies in Karnataka etc. for this purpose the data has been collected from secondary sources such as books journals and websites. This paper is also made an attempt to identify the factors which influence the cropping pattern in various states in India.

Key Words- Cropping pattern system, factors, Land holding.

Introduction
The Department of Agriculture implements various schemes and programmes of the Central and State Government for overall welfare of the farming community and ensures timely supply of essential inputs i.e. seeds, fertilizers, plant protection chemicals, farm equipment's along with effective transfer of technology through demonstrations to achieve maximum output from the available natural resources viz. soil, water etc. This in turn leads to improvement in the economic status of the farming community and fulfill food grain needs of the people. Though the contribution of agricultural sector in the Gross State Domestic Product is declining, agriculture continues to be the largest employment generating activity.

Cropping pattern means the proportion of area under different crops at a point of time, Changes in this distribution over a period of time and factors influencing this change in distribution. Cropping pattern in India is determined meanly by natural factors like rainfall, Climate and soil conditions. Technological factors also played a important role.

Objectives of the Study
The Following are the Specific Objectives of the Study
1. To know the concept of cropping pattern.
2. To identify the crop pattern system in Karnataka.
3. To know the land holding of cropping pattern in Karnataka.
4. To know the factors of the cropping pattern.

Methodology: The data has been collected from the secondary sources such as books, Journals, Economic Survey of India and Karnataka & Websites.

Agricultural Production
The table no.1 reveals the detailed agriculture production in Karnataka for the years 2018 and 2019. As 2/3 of the cultivated area in the State is under rain fed cultivation and failure of rains leave a severe impact on the agricultural production. Failure of rains during July (18 districts), August (14 districts) and September (20 districts) hampered normal area coverage of Kharif crops as well as prospects of rain fed crops. Advance Estimates of agricultural production are worked out considering the progress in area coverage under various kharif and Rabi crops, likely coverage during summer in view of inadequate water storage in major/minor irrigation reservoirs of northern Karnataka, likely loss in yield on account of failure of rains.

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The estimates indicate food grain production of 100.87 lakh tones against targeted production of 135 lakh tonnes (86.61 lakh tonnes Cereals and 14.26 lakh tonnes of Pulses against the target of 115 and 20 lakh tonnes respectively). Oilseeds production is estimated to be 10.67 lakh tonnes against the target of 14 lakh tonnes. Production of cotton is likely to be 9.26 lakh bales against the target of 16.43 lakh bales. The short fall in production can be attributed to failure of rains during July, August, September and October in major parts of the State.

Table no: 1, Area and Production of Major crops in Karnataka
(Area in lakh hectares, Production in lakh tonnes)

Crop	2018-19*		2017-18**		Average growth over previous year (%)	
	Area	Prodn	Area	Prodn	Area	Prodn
Cereals	42.63	86.61	46.24	119.60	-8	-28
Pulses	28.92	14.26	30.24	22.12	-4	-36
Total food grains	71.55	100.87	76.48	141.72	-6	-29
Oilseeds	12.44	10.67	10.99	12.79	13	-17
Cotton #	4.78	9.27	5.47	18.44	-13	-50
Sugarcane >	5.93	342.00	4.00	374.61	48	-9
Tobacco	0.93	0.73	0.95	0.89	-2	-18

Lakh bales of 170 Kg. lint, ** Final Estimates of DE&S, * 2nd Advance Estimates of DE&S. > Sugarcane production for harvest area of 4.00 lakh hectares in 2017-18 and probable area of 4.00 lakh hectares in 2018-19

The table no 2 provides the information about the land holdings in Karnataka up to 2015-16. Agriculture Land Holdings Provisional results of 2015-16 Agriculture Census shows 86.77 lakh farm holdings are operating 117.24 lakh hectares. Small and marginal holdings account for 80% of total holdings and operate 44% of the total operated area, while semi-medium, medium and large holdings account for 20% of the total holdings and their operational land holding is 56% out of the total operational area.

Table: 2, Land Holdings in Karnataka

I. Number of Operational Holdings ('000)					
Size Class	1995-96	2000-01	2005-06	2010-11	2015-16 (Provisional)
Marginal (Below 1 ha.)	2610	3252	3655	3849	4764
Small (1 to 2 ha.)	1707	1909	2014	2138	2213
Semi Medium (2 to 4 ha.)	1204	1259	1278	1267	1193
Medium (4 to 10 ha.)	594	569	555	511	451
Large (Above 10 ha.)	106	90	79	68	56
Total	6221	7079	7581	7832	8677

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II. Area of Operational Holdings ('000 hectares)

Size Class	1995-96	2000-01	2005-06	2010-11	2015-16 (Provisional)
Marginal	1248	1492	1651	1851	2065
Small	2480	2742	2876	3020	3086
Semi Medium	3298	3429	3468	3393	3167
Medium	3490	3317	3206	2904	2551
Large	1593	1327	1184	994	855
Total	12109	12307	12385	12161	11724

III. Average Size of Operational Holdings (hectares)

Size Class	1995-96	2000-01	2005-06	2010-11	2015-16 (Provisional)
Marginal	0.48	0.46	0.45	0.48	0.43
Small	1.45	1.44	1.43	1.41	1.39
Semi Medium	2.74	2.72	2.71	2.68	2.66
Medium	5.88	5.83	5.78	5.69	5.65
Large	15.02	14.74	14.99	14.71	15.35
Total	1.95	1.74	1.63	1.55	1.35

Table no 3 shows that the cropping pattern in Karnataka. Karnataka State falls in Zone X (Southern Plateau and Hilly region) and Zone XII (West Coast Plains and Ghats region) as per the Agroclimatic Regional Planning of Planning Commission. The State is divided into 10 Agroclimatic zones on the basis of distribution and quantum of rain fall, soil quality, height from the sea and on the basis of major crops. On account of this varied agro-climatic features almost all cereals, pulses, oilseeds and commercial crops are cultivated in different parts of the State. Farmers in Karnataka are very innovative and take lead in diversification as per the market trends. The average area (2013-14 to 2017-18) under agricultural crops grown in three seasons' viz. Kharif (67.99 lakh ha.), Rabi (30.47 lakh ha.) & summer (4.34 lakh ha.) is 102.80 lakh hectares. Cereals, Pulses, Oilseeds, Cotton, Sugarcane and Tobacco account for 46%, 28%, 14%, 6%, 5% and 1% respectively of the total agricultural cropped area. Maize, Tur, Bengal gram, Cotton and Soyabean are witnessing higher trend in recent years, whereas as crops like Sunflower, Jowar, Groundnut etc. are witnessing declining trend.

Table: 3,Cropping Pattern in Karnataka

Sl.No	Crops	Year		
		2016-17	**2017-18**	**2018-19**
1	Rice	10.34	9.93	11.37
2	Jowar	9.48	10.88	8.95
3	Ragi	5.98	7.78	5.81
4	Maize	13.70	13.07	13.08
5	Bajra	2.42	2.31	1.89
6	Wheat	1.68	1.93	1.30
7	Minor Millets	0.21	0.34	0.23
	Total Cereals	43.81	46.24	42.63

Sl.No	Crops	Year		
		2016-17	2017-18	2018-19
1	Tur	12.14	8.85	9.97
2	Bengal gram	10.03	12.65	11.00
3	Horse gram	1.24	1.73	1.37
4	Black gram	0.88	1.36	0.89
5	Green gram	4.20	3.97	4.21
6	Cowpea	0.66	0.99	0.96
7	Avare	0.47	0.67	0.51
8	Other pulses	0.04	0.02	0.01
	Total Cereals:	29.66	30.24	28.92
	Total Food grains:	73.47	76.48	71.55

Sl.No	Crops	Year		
		2016-17	2017-18	2018-19
1	Groundnut	6.66	5.64	6.56
2	Sesamum	0.35	0.36	0.30
3	Sunflower	2.20	1.73	1.90
4	Castor	0.09	0.07	0.08
5	Niger	0.06	0.04	0.04
6	Mustard	0.04	0.02	0.01
7	Soyabean	3.18	2.77	3.37
8	Safflower	0.32	0.34	0.17
9	Linseed	0.03	0.02	0.01
	Total Cereals:	12.93	10.99	12.44

Annual Crops				
Sl.No	Crops	Year		
		2016-17	2017-18	2018-19
1	Cotton	5.10	5.47	4.78
2	Sugarcane	4.88	5.33	5.93
3	Tobacco	0.90	0.95	0.93
	Total Cereals:	97.28	99.22	95.63

Factors Determining Crop-Pattern
The following are the important factors which influence the Cropping Pattern:

1. Natural factors
These pertain to the physical characteristics and natural endowments of a region and a most important factor determining its crop-pattern. Nature of soil, type of climate, extent of rainfall, etc., will determine the basic crop-pattern of a region over a period of time.

2. Economic factors
These pertain to prices of agriculture commodities, Incomes of farmers, size of holdings, availability of agriculture inputs, nature of land tenure, etc. The importance of these factors in affecting the crop-pattern is self-evident.

3. Historical factors

In certain areas certain crops are grown by sheer accident or necessity and then that cropping pattern is maintained through the years. Historical pattern of land tenure also plays its role. If the land is divided into a number of small plots with ownership vested in numerous small and marginal farmers, the tendency will be to grow food crops.

4. Social factors

Social environment, customs, traditions, outlook towards material things, etc... Also influence crop-pattern to some extent.

5. Government policy

Policies of the government relating to different crops, exports, taxes, subsidies, supplies of inputs, availability of credit, etc., can affect the cropping pattern in a significant way.

Conclusion

At the time Independence, India's agriculture was in a state of backwardness. Productivity is also very low. After implementing the effective agriculture policies at present the productivity has gone up. Agriculture is the major Backbone of the Indian economy. A part of agriculture cropping pattern system is also giving maximum contribution to the Indian economy. In recent years the Government introduced various programs for increasing the production of oil seeds. In the present generation technology and modern cropping systems are playing a significant role in the growth of crops. However in recent past since 8 to 10 years continuously rains failure. Due to scarcity of water resources the production yield is also became down. For the improvement of the cropping pattern the governments have to take steps to effective implementation of the modern techniques.

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