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GROWTH AND DEVELOPMENT OF AGRICULTURE SITUATION IN KARNATAKA: AN ANALYSIS

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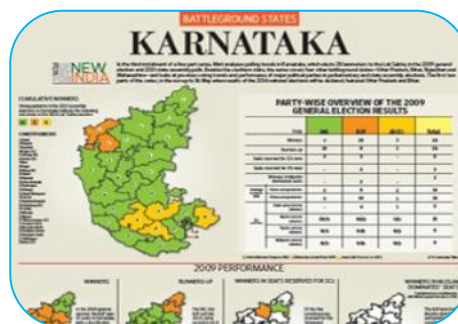
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ABSTRACT:

Karnataka is India's eighth largest state in geographical area covering 1.92 lakh sq km and accounting for 6.3 per cent of the geographical area of the country. The state is delineated into 30 districts and 176 taluks spread over 27,481 villages. In Karnataka, agriculture is the major occupation for a majority of the rural population. As per the population Census 2011, agriculture supports 13.74 million workers, of which 23.61 per cent are cultivators and 25.67 per cent agricultural workers. A total of 123,100 km² of land is cultivated in Karnataka constituting 64.6% of the total geographical area of the state.

The agricultural sector of Karnataka is characterized by vast steppes of droughtprone region and sporadic patches of irrigated area. Thus, a large portion of agricultural land in the state is exposed to the vagaries of monsoon with severe agro-climatic and resource constraints. Agriculture employs more than 60 per cent of Karnataka's workforce.



KEYWORDS: geographical area, agricultural workers.

INTRODUCTION

Agriculture in Karnataka is heavily dependent on the southwest monsoon. While only 26.5 per cent of the sown area (30,900 km²) is under irrigation, 64.60 per cent of the total geographical area is under cultivation. The state ranks fifth in India in terms of total area under horticulture. It stands fifth in production of vegetable crops and third in fruit crop production. It is also the largest producer of spices, aromatic and

medicinal crops and Karnataka is also the second largest producer of grapes in the country, production of 12 per cent of total fruits, 8 per cent of total vegetables and 70 per cent of coffee in the country. It is the third largest producer of sugar and ranks fourth in sugarcane production.

Agriculture plays an important role in the overall growth of Karnataka's economy despite a fall in its share in the state domestic product. In

Karnataka, horticulture crops occupy about 15.21 lakh hectares with an annual production of about 96.60 lakh tonnes. Karnataka is highly progressive with regard to vegetable production, and enjoys this advantage because of favourable climatic conditions without any extremes in temperature. It is also well known for floriculture production and is a major silk-producing state in the country. The fisheries sector is now emerging as one of the most

important in allied agriculture activities in the state.

Agriculture remains the primary activity and main source of livelihood for the rural population in the state. It is characterized by wide crop diversification and remains highly dependent on the vagaries of the southwest monsoon. During 2010-11, foodgrain production in the state increased at an enormous rate of more than 14% over the previous year and this increase was mainly led by an increase in yield as the area increase during the year was only 2.9 per cent. Agriculture contributed 15.94 per cent (at constant prices) to the state's GSDP in 2011-12. There has been a decline in GSDP generated from the agricultural sector and consequently, the SDP per worker in the sector has been declining at a faster rate in the recent past when compared to the last decade.

AGRICULTURAL PRODUCTION PERFORMANCE AND PROSPECTS:

As 2/3 of the cultivated area in the State is under rainfed 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 rainfed 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. The estimates indicate food grain production of 100.87 lakh tonnes against targetted 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. Area and Production of Major crops are given in table 1

Table 1:
Area and Production of Major Crops in the State
(Area in lakh hectares, Production in lakh tonnes) (2018-19)

Crop / Group	2018-19 *		2017-18**		Average growth over previous year (%)	
	Prodn.	Area	Prodn.	Area	Prodn.	Area
Cereals	42.63	86.61	46.24	119.6	-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	4	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.

Source: Karnataka Economic Survey 2018-19

Table.2 :
Area coverage: Kharif, Rabi and Summer (Lakh hectares) 2018-19

Crop/ Groups	Kharif			Rabi (provisional)			Summer		
	Normal	2018-19	2017-18	Normal	2018-19	2017-18	Normal	2018-19	2017-18
Cereals	32.29	30.46	30	13	10.45	13.6	2.19	1.72	2.64
Pulses	14.91	16.34	16.02	13.56	12.4	14.16	0.13	0.18	0.06
Total food grains	47.2	46.8	46.02	26.56	22.85	27.76	2.32	1.9	2.7
Oilseeds	9.46	8.91	8.27	2.91	1.48	0.97	1.67	2.05	1.75
Cotton	5.74	4.71	5.21	0.46	0.07	0.26	0	0	0
Sugarcane	4.63	5.08	4.26	0.5	0.5	0.69	0.35	0.35	0.38
Tobacco	0.96	0.93	0.95	0.04	0	0	0	0	0
Aggregate	67.99	66.43	64.71	30.47	24.9	29.68	4.34	4.3	4.83

Source: Karnataka Economic Survey 2018-19

LAND UTILIZATION

As per the land utilization statistics of 2016-17, out of the total 190.50 lakh hectares geographical area of the State, the net cropped area was 98.55 lakh hectares accounting to 51.73% of the total geographical area. Gross cropped area was 117.79 lakh hectares including 19.24 lakh hectares area sown more than once, this works out to 120% cropping intensity. Around 16% of the area was covered under forests, 7.85% area was under nonagricultural uses, 4.16% land was barren and uncultivable land and 2.10% land was cultivable waste. Permanent pastures, grazing land and miscellaneous tree crops constituted 6.19% of the total geographical area. About 11.83% of the total area falls under current allow and other fallow land.

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. A detail of Agricultural Land Holdings in Karnataka is given in Table 3.

Table 3:
Land Holdings in Karnataka (2018-19)

I. Number of Operational Holdings ('000)	1995-96	2000-01	2005-06	2010-11	2015-16 (Provisional)
Size Class					
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
II. Area of Operational Holdings ('000 hectares)					
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)					
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

Source: Karnataka Economic Survey 2018-19

CROPPING PATTERN

Karnataka State falls in Zone X (Southern Plateau and Hilly region) and Zone XII (West Coast Plains and Ghats region) as per the Agro climatic Regional Planning of Planning Commission. The State is divided into 10 Agro climatic 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. The details on cropping pattern are given in table 4.

Table 4
Cropping Pattern in Karnataka Area in Lakh Hectares 2018-19

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	
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 Pulses:	29.66	30.24	28.92	
Total Food grains:	73.47	76.48	71.55	
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 Oilseeds:		12.93	10.99	12.44
Annual Crops:				
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 of above @		97.28	99.22	95.63

Provisional, @ up to end of Nov.2018

Source: Karnataka Economic Survey 2018-19

DISTRIBUTION OF INPUTS

For Kharif 2018, the State Government had projected the requirement of 24 lakh tonnes of different grades of fertilizers. Based on that, Govt. of India had allocated 22.37 lakh tones of different grades of fertilizers consisting DAP-3.87 lakh tonnes, MOP - 2.50 lakh tonnes, Complex-7.00 lakh tonnes, Urea-8.50 lakh tonnes and SSP & others- 0.50 lakh tonnes. The State received 23.03 Lakh tonnes of different grades of fertilizers by the end of Kharif 2018 consisting DAP - 3.74 lakh tonnes, MOP-1.80 lakh tonnes, Complexes - 8.50 lakh tones, Urea - 8.21 lakh tonnes, SSP and others 0.77 lakh tones

For Rabi/summer 2018-19, the State Government had projected the requirement of 16 lakh tonnes of different grades of fertilizers. Based on that, Govt. of India has allocated 14.12 lakh tonnes of different grades of fertilizers consisting DAP-2.00 lakh tonnes, MOP - 1.50 lakh tonnes, Complex-4.71 lakh tonnes, Urea-5.50 lakh tonnes and SSP& others - 0.41 lakh tonnes. Trends in fertilizer consumption in terms of NPK nutrients are furnished in table 5.

Table 5
Fertilizer Consumption and HYV Coverage in Karnataka

Year	Area under HYV (Lakh hectares)	Nitrogen	Phosphorous	Potash	TOTAL
1970-71	5.30	0.92	0.37	0.24	1.53
1980-81	24.00	1.93	0.81	0.70	3.44
1990-91	31.56	4.12	2.56	1.65	8.33
2000-01	41.28	7.03	3.60	2.31	12.94
2001-02	39.34	6.71	3.60	2.18	12.49
2002-03	38.41	6.01	3.03	1.95	10.99
2003-04	38.74	4.93	2.40	1.86	9.19
2004-05	45.45	6.55	3.63	2.73	12.91
2005-06	47.99	9.85	4.96	3.25	18.06
2006-07	47.50	7.56	4.38	2.91	14.85
2007-08	48.52	7.92	3.93	3.43	15.28
2008-09	47.73	8.64	5.59	4.09	18.32
2009-10	49.06	9.63	6.30	4.66	20.59
2010-11	49.66	10.16	6.96	3.98	21.10
2011-12	46.84	11.04	7.87	3.33	22.23

2012-13	45.33	8.92	3.89	2.49	15.30
2013-14	46.43	9.63	4.91	3.01	17.57
2014-15	44.84#	10.01	4.98	3.32	18.32
2015-16	41.55#	9.30	4.93	2.88	17.11
2016-17	40.70#	6.85	3.70	1.85	12.40
2017-18	42.72#	8.78	4.59	2.58	15.95
2018-19	39.62#	6.99	3.85	2.37	13.21 @

Provisional, @ up to end of Nov.2018

Source: Karnataka Economic Survey 2018-19

POPULATION AND WORKFORCE

The population of Karnataka which was 5.29 crore in 2001 has increased to 6.11 crore in 2011. The female population of Karnataka which accounted for 49.10 per cent of the total population in the state during the 2001 census has gone up marginally to 49.19 per cent in the 2011 census. The total population growth in this decade was 15.67 per cent while in the previous decade it was 17.25 per cent. The population of Karnataka forms 5.05 per cent of the all-India population in 2011 as against 5.14 per cent during the 2001 census. Rural population which formed 66 per cent of the total population of Karnataka in 2001 declined to 61.43 per cent in 2011 (Table 6). The proportion of rural female population declined from 49.41 per cent in 2001 to 49.19 per cent in 2011. On the contrary, the proportion of female population in urban Karnataka rose marginally from 48.50 per cent in 2001 to 48.91 during 2011.

Table 6:
Population of Karnataka during 2001 and 2011 Census Population in '000'

Population	Census 2011			Census 2001		
	Rural	Urban	Total	Rural	Urban	Total
Total						
Persons	61,095	37,469	23,626	52,851	34,889	17,962
Males	30,967	18,929	12,037	26,899	17,649	9,250
Females	30,129	18,540	11,589	25,952	17,240	8,712

Source: Karnataka Census, 2011

According to the 2001 census, workers constituted 44.53 per cent of the total population and the rest 55.47 per cent were non-workers. There were 2.35 crore main workers accounting for roughly 37 per cent of the total population as per the 2001 census. The cultivators (29.25 per cent) and agricultural labourers (26.46 per cent) formed 56 per cent of the workforce of Karnataka (Fig.2). Workers in the household industry accounted for 4 per cent whereas other workers constituted 40.21 per cent of the total workers in Karnataka in 2001. As per the 2011 census, 2.79 crore people accounting for 45.62 per cent of the population form the workforce and among these, cultivators accounted for 21.66 per cent and agriculture labour constituted 18.37 per cent in the state. It is interesting to note that the share of both cultivators as well as agricultural workers has declined in 2011 from the 2001 census figures.

STORAGE, GODOWNS AND MARKETS

It is estimated that about 6 per cent of the foodgrains and roughly 30 to 40 per cent of the horticulture produce, mainly fruits and vegetables, are lost due to non-availability of proper storage facilities. This affects the post-harvest management of agricultural and horticultural produce. Lack of storage facilities creates a glut in the market during the harvest season and producers are compelled to sell their produce at lower prices. The

storages and godowns are operated by private as well as public sector companies. The Karnataka State Warehousing Corporation has a storage capacity 9.04 lakh MT, of which 4.97 lakh MT is owned and 4.07 MT is hired. Similarly, there are 157 cold storages owned by private, co-operative and public sector units with a capacity of 3.97 lakh MT (GoK, 2012).

Most of the agriculture produce in the state is marketed by the Agriculture Produce Marketing Committee (APMCs) yards. There are 504 regulated markets in the state, of which 151 are main markets and 353 sub-markets. The density of regulated markets for agriculture produce varies across the districts and it ranges from 6 markets in Bangalore rural and Udupi to a maximum of 47 markets in Belgaum. The total turnover in the regulated markets is around Rs 22,455 crore per annum.

AGRICULTURAL CREDIT

The State of Karnataka has a good banking network of commercial banks, RRBs and cooperatives. Currently, 27 public sector banks, 16 private commercial banks and six regional rural banks are operating in the state. The growing demand for institutional finance has resulted in the expansion of banking network and credit flow. There were 755 bank branches at the time of nationalization in 1969 and the number reached 7,268 by March 2011. Among the total number of bank branches, 5,122 are commercial banks, 1,256 rural regional banks and the remaining 890 branches of co-operative banks (NABARD, 2011). The rural and semi-urban branches account for 38.61 per cent and 20.57 per cent respectively of the total 7,268 bank branches in Karnataka. Disbursement of credit in rural areas takes place through co-operatives, commercial banks and regional rural banks. The total crop loans disbursed increased from Rs 6,454.84 crore in 2005-06 by more than 60 per cent to Rs 10,592.32 crore during 2009-10 (Table-7). The targets set for disbursal of crop loans were fulfilled from 2005-06 to 2007-08. However, there was a gap of 17 and 10 per cent between the targets and achievements in crop loan disbursal during 2008-09 and 2009-10, respectively.

Actual disbursal of term loans for agriculture increased from Rs 2,598.09 crore in 2005-06 to Rs 4,094.21 crore in 2009-10. The targets fixed for disbursal of term loans for agriculture were achieved or exceeded during 2005-06 and 2006-07, but from 2007-08 the achievements have fallen short of targets. There is a gap of 20 to 25 per cent between the targets and actual disbursal of term loans from 2007-08 to 2009-10.

Table 7:
Ground Level Credit Flow to Agriculture Sector - Targets and Achievements in Rs crore

Category	2005-06	2006-07	2007-08	2008-09	2009-10
Crop Loan					
Target	5773.86	7246.9	8665.52	10161.86	11765.92
Achievement	6454.84	7302.79	8676.38	8483.38	10592.32
Agricultural Tem Loan					
Target	2367.58	3244.74	3865.99	4779.66	5366.39
Achievement	2598.09	3308.79	3157.84	3661.02	4094.21
Total Agri Credit					
Target	8141.44	10491.64	12531.51	14941.52	17132.31
Achievement	9052.93	10611.58	11834.22	12144.4	14686.53

Source: NABARD, State Focus Paper, 2011-12, Karnataka.

CONCLUSION:

The agro-climatic character of the state divides it into varied agro-climatic zones. This influences the cropping pattern and cultivation practices followed across the regions. Similarly, the

resource endowment and delivery system of inputs also differ across the regions. Broadly, one can divide Karnataka into five zones based on agrarian and agro ecological systems, namely, Bombay Karnataka zone, Hyderabad Karnataka zone, Southern dry zone, Southern irrigated zone and Western coastline. Among these regions, the un-irrigated plateau zones of Northern Karnataka and Southern Karnataka are the main lagging regions of the state. Investment from public and private sources in these two regions remained at the lowest rung in the development ladder (GoK, 2003) and failure to bring investment to the rural areas of these two regions has caused impediments to spur growth. Hitherto, agriculture was considered the only alternative to bring these regions into mainstream growth, but climatic conditions and resource endowments do not support such an initiative. On the contrary, weather-induced instability continues to inflict misery on farmers in these areas. However, it has been observed that horticultural crops have been picking up both in terms of area as well as productivity in these regions.

The major challenges faced by agriculture in Karnataka are: threat of stagnation in agriculture growth with possibility of decelerating growth, low value-addition in agriculture, fast approaching optima on technological front, large proportion of rain-fed / dry land area, marginalization of agricultural land base, inadequate growth in public and private investment, regional disparities in investment, low technology adoption and growth, inadequate and inefficient safety nets and finally, conflicting demands of growth versus environmental protection (GOI, 2004). To resolve these issues, it is imperative to focus on rain-fed agriculture, develop initiatives for small and marginal farmers, rebuild natural resource base by promoting an organic approach to farming and develop key infrastructure to provide a boost to growth momentum.

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