

STRUCTURAL CHANGES AND AGRARIAN CRISES IN KARNATAKA: ANALYSIS OF EMERGING EVIDENCE

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Karnatak University, Dharwad, Karnataka, India***ABSTRACT**DOI URL: <https://doi.org/10.36713/epra3030>

Agriculture is the primary occupation of most of Karnataka's rural residents. A total of 123,100 km² of land is cultivated in Karnataka, constituting 25.3% of the total geographical area of the state. Agriculture in Karnataka is heavily dependent on the southwest Monsoon since the extent of arid land in the state is second only to Rajasthan. Only 26.5% of sown area (30,900 km²) is subjected to irrigation. The state has three agricultural seasons – Kharif (April to September), Rabi (October to December) and summer (January to March). This study exploits the rapid technological improvement and development during the Green revolution to estimate the effects of agricultural productivity growth on structural change both in Karnataka and across country. The process of development requires structural change. The structural change of an economy takes place mainly along two dimensions: one is the changing sector-wise shares in GDP and the second is the changing share of the labour force, engaged in each sector. In case of Karnataka State economy, it is seen that as a first step, the agriculture sector loses its importance with a simultaneous growth of the manufacturing sector and tertiary sector. In Karnataka State, the service sector has grown by by-passing the secondary sector. Structural changes in agricultural sector it is also one type of the agrarian crises in Karnataka state. Agriculture is mainly depends upon monsoon so rural people more interested to go urban area due to getting jobs and were wages are high compared to village. Agricultural sector facing problem of agricultural labour due to agricultural labourers are shifted to urban area because of wages in agriculture sector is low compared to urban wages. In this context, this chapter is an attempt to mark out the structural change in terms of input structure, production structure and employment structure.

KEY WORDS: *primary sector, Secondary sector, Tertiary sector, Agriculture, Agricultural crops cropping pattern, Cropping pattern.*

1. INTRODUCTION

Karnataka is one of the highest economic growth states in India with an expected GSDP (Gross State Domestic Product) growth of 8.2% in the fiscal year 2010–2011. The total expected GSDP of Karnataka in 2010–2011 is about Rs.2719.56 billion. Per capita GSDP during 2008–2009 was US\$1034.9. Karnataka recorded the highest growth rates in terms of GDP and per capita GDP in the last decade compared to other states. In 2008–09, the tertiary sector contributed the most to GSDP (US\$31.6 billion%55 percent), followed by the secondary sector (\$17 billion%29 percent), and the primary sector (US\$9.5 billion%16 percent). According to details, the Gross State Domestic Product (GSDP) in the year 2017-18 grew at the rate of 8.5 percent as against the rate of 7.5 percent during 2016-17. In this year, Agricultural sector is expected to grow by 4.9 percent. The industry sector is expected to grow at 4.9 percent and the service sector is

expected to register a growth rate of 10.4 percent. With a GDP growth of 7.4% 2017-18 and a Per capita GDP growth of 13,409 (US\$700) 2018-19. Pushing Karnataka's per capita income in Indian Rupee terms to 10th rank and in case of GDP Rank, Karnataka state has 5th rank among the all states in our country. During April 2014 to November 2015, the state received FDI totaling US\$ 6,710.36 million, constituting 12.04 percent of the country's FDI. According to ministry of labour and employment Karnataka has India's second-lowest unemployment rate. Karnataka's unemployment rate is 1.5 per cent in 2015-16.

Between 2011-12 and 2017-18, the GSDP of the state grew at a Compound Annual Growth Rate (CAGR) of 13.11 per cent to reach Rs.12.69 trillion (US\$ 196.88 billion) and the Net State Domestic Product (NSDP) grew at a CAGR of 12.83 per cent to reach Rs 11.45 trillion (US\$ 177.68 billion). After Bangaluru urban district, Dakshina Kannada

(Mangalore) and Belagavi district contribute the second and third highest revenue to the state respectively.

According to details, the Gross State Domestic Product (GSDP) in the year 2017-18 grew at the rate of 8.5 percent as against the rate of 7.5 percent during 2016-17. In this year, Agricultural sector is expected to grow by 4.9 percent. The industry sector is expected to grow at 4.9 percent and the service sector is expected to register a growth rate of 10.4 percent. In case of Karnataka State economy, the agriculture sector loses its importance with a simultaneous growth of the manufacturing sector and tertiary sector has grown by bypassing the secondary sector. The process of development requires structural change. The structural change of an economy takes place mainly along two dimensions: one is the changing sector-wise shares in GDP and the second is the changing share of the labour force, engaged in each sector. The Karnataka economy transform their domestic economic structure from a heavy emphasis on traditional subsistence agriculture to a more modern, more urbanized and more industrially diverse manufacturing and service economy.

The role of agriculture in the Karnataka economy has undergone a major change. Its share of employment has significantly diminished and the productivity per worker as well as overall food production has greatly increased. This was caused not only by technical progress in agriculture, but also by the creation of new job opportunities in the manufacturing and service sectors. Despite population growth, the Karnataka has become less rural and more urbanized, which is associated with a drop in poverty and general improvements in living standards. This process has much more pronounced in developed states than in developing ones. For this reason, the facilitation of structural change is both an opportunity and a major challenge for the developing states.

2. REVIEW OF LITERATURE

Colin Clark (1940) and Kuznets (1957): in their study found a significant relationship between national income and the sectoral composition of output. They had noted that the advanced economies had undergone the three stages of transformation in their economies during the process of national income growth. The first stage of transformation had been identified by the predominance of the primary sectors contribution. The second stage of the transformation is characterized by the shift in the centre of gravity of the economy away from that of primary production and towards the manufacturing activities. The transformation from the second stage to that of the third stage three could be identified by an increase in the tertiary sectors share in national income.

Chowdhury (1992) had investigated sectoral linkages in 13 countries for the period 1968 to 1988. Using the methodology suggested by Granger, the sample of countries chosen for this study were South Korea, China, Japan, Indonesia, Malaysia, Thailand, Philippines, India, Pakistan, Sri Lanka, Bangladesh, Nepal and Australia. The data had been obtained from the World Tables 1990-91. The study had observed that for China, Malaysia, and Sri Lanka the causation was from that of the agricultural sector to that of the industrial sector. For Thailand, Pakistan, Australia, and Bangladesh, Industry was found to

be the leading sector. The Philippines economy had exhibited a bi-directional causality between agriculture and industry and lastly, South Korea, Japan, India, Indonesia and Nepal had shown independence in their sectoral articulation. These findings had been further strengthened by the sectoral growth rates and the sectoral share analysis. **Anilyadav's (1999)** study had found out the relationship between the rate of growth of the GDP and its sectoral shares and their fluctuations over the decades. He had compared the overall sectoral rates of growth among the developing, the faster developing and the developed countries of the world. For, this purposes the growth rates of the domestic product for nearly 25 years (from 1969 to 1993) for different types of countries, nineteen developing countries, four faster developing countries and six developed countries had been examined. The same procedures were followed for studying independent by the sectors of agriculture, industry and the services in order to understand clearly as to how the different sectors had contributed to the growth of the countries. In the case of the developing countries, the process of structural changes was found to be different from that of the developed countries in the sense that, instead of the gradual shifting of the GDP's share from agriculture to that of the industry and then to the services sector as in the developed countries, it had been directly shifted from agriculture to that of the services sector, and India also was not an being no exception to this general trend. Similarly as far the employment was concerned, a close proximity had been observed among the shares of employment in the different sectors among the developed countries while, no such proximity was found in case of the developing countries.

3. OBJECTIVES OF STUDY

- To analyze the structural changes in Agriculture sector in Karnataka.
- To improve the agricultural sector to give more contributions to SGDP as well as its growth.

4. RESEARCH METHODOLOGY

The present study is based on secondary data collected from Agricultural development and Rural Transforming centre Institute for Social and Economic Change, Bengaluru and Karnataka State department of Agriculture Bengaluru, Karnataka Socio-Economic Survey 2017-18. A few simple statistical tools such as averages, percentage and simple Growth rate (Gr) that has been used for the analysis of the data.

5. RESULT AND DISCUSSIONS

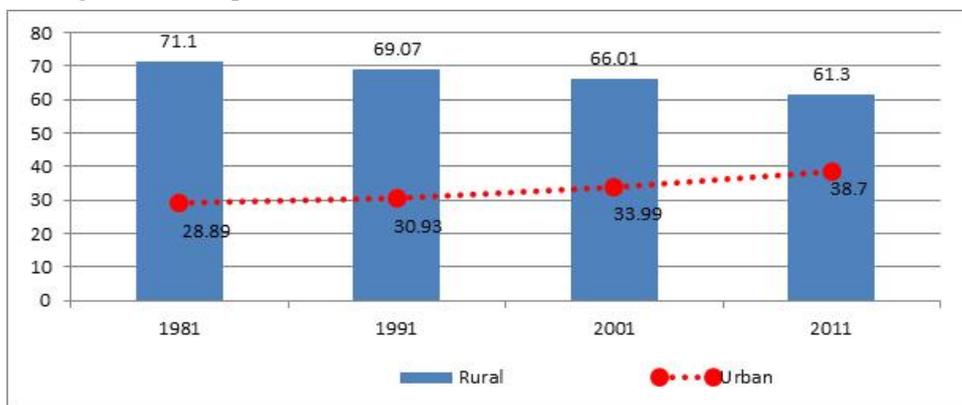
5.1 Karnataka State Population

Data provided in table 1 that shows the Karnataka state has 5.29 crore population in 2001 which is increased to 6.11 crore in 2011. The female population of Karnataka which accounted for 2.68 crore of the total population in the state during the 2001 census has gone up slightly to 3.09 crore in the 2011 census. The total population growth in this decade was 15.67 per cent. Karnataka state has 66 per cent rural population out of total population in 2001 which is declined to 61.3 per cent in 2011. As can be seen from table 1 and fig 1, the rural population has declining trend and urban population has increasing trend.

Table1. Change in Population of Karnataka

Year	Absolute			Percentage		
	Total	Rural	Urban	Total	Rural	Urban
1981	37136000	26406000	10730000	100	71.1	28.9
1991	44977000	31069000	13908000	100	69.1	30.9
2001	52733958	34814100	17919858	100	66.0	34.0
2011	61095297	37469335	23625962	100	61.3	38.7

Source: Karnataka census, 2011

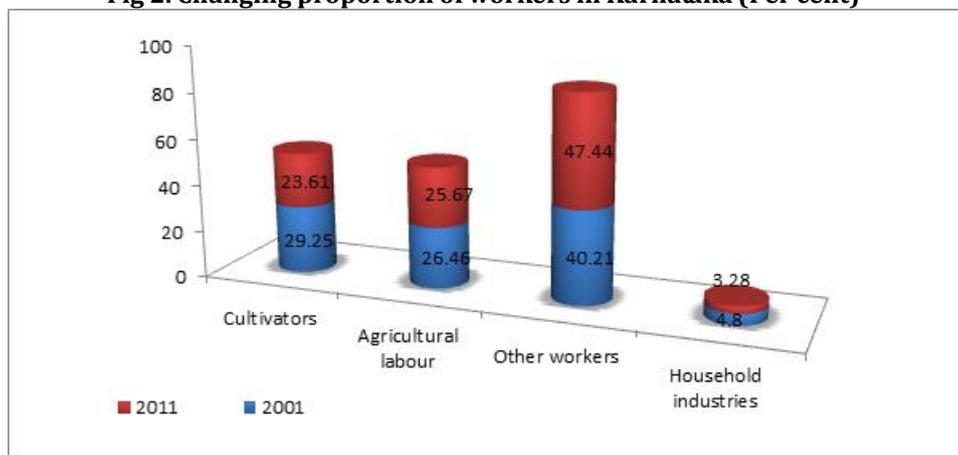
Fig. 1 Share Population Distribution in Rural and Urban in Karnataka

Source: Table 1

5.2 Changing proportion of workers in Karnataka

The Fig 2 reveals that the changing proportion of workers in Karnataka state during 2001-to-2011 census. According to the 2001 census, Karnataka state has 44.53 per cent workers out of the total population and the rest 55.47 per cent were non-workers. The cultivators (29.25 per cent) and agricultural labourers (26.46 per cent) formed 56 per cent of the workforce of Karnataka. Workers in the household industry accounted

for 4.8 per cent and 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 49.28 per cent of the population form the workforce and among these, cultivators accounted for 23.61 per cent and agriculture labour constituted 25.67 per cent in the state. The important observation that the share of both cultivators as well as agricultural workers has been declined in 2011 from the 2001 census.

Fig 2. Changing proportion of workers in Karnataka (Per cent)

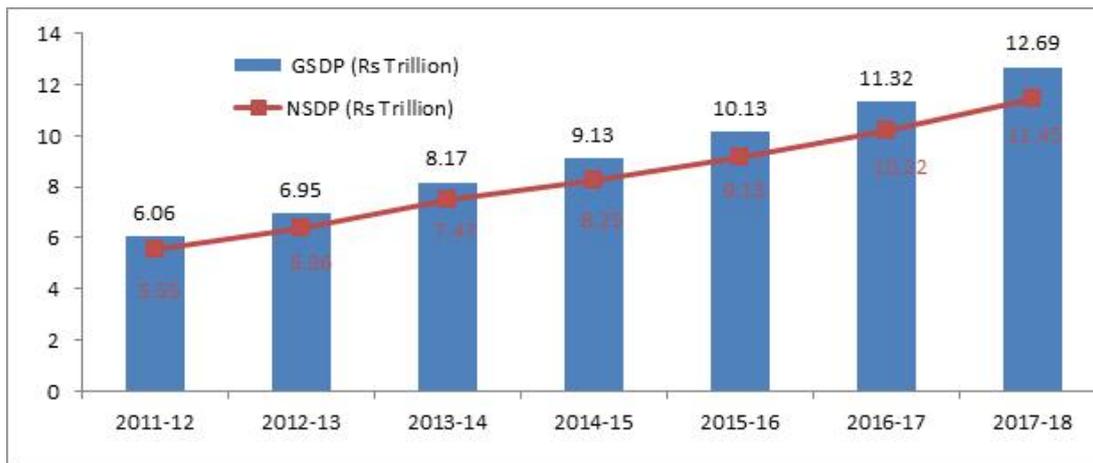
Source: Karnataka census, 2011

5.3 Growth of GSDP and NSDP of Karnataka (at current price)

The data provided in fig 3 that shows the at current price, the gross state domestic product (GSDP) of Karnataka is increasing trend and it is increased from Rs. 6.06 trillion (US\$ 126.38 Billion) to Rs. 12.69 trillion (US\$ 196.88 billion) during the financial year 2011-12 to 2017-18. The Net State Domestic Product (NSDP) of Karnataka was also increased

from Rs. 5.55 trillion (US\$ 115.74 billion) to Rs. 11.45 trillion (US\$ 177.68 billion) during the year 2011-12 to 2017-18. NSDP of Karnataka was recorded at about Rs. 11.45 trillion in 2017-18. The growth GSDP (CAGR 13.11 %) is high compared to NSDP (CAGR 12.83 %) growth in Karnataka State Economy. The Growth has been mainly driven by secondary and tertiary Sectors in Karnataka.

Fig 3. GSDP and NSDP of Karnataka (current price)



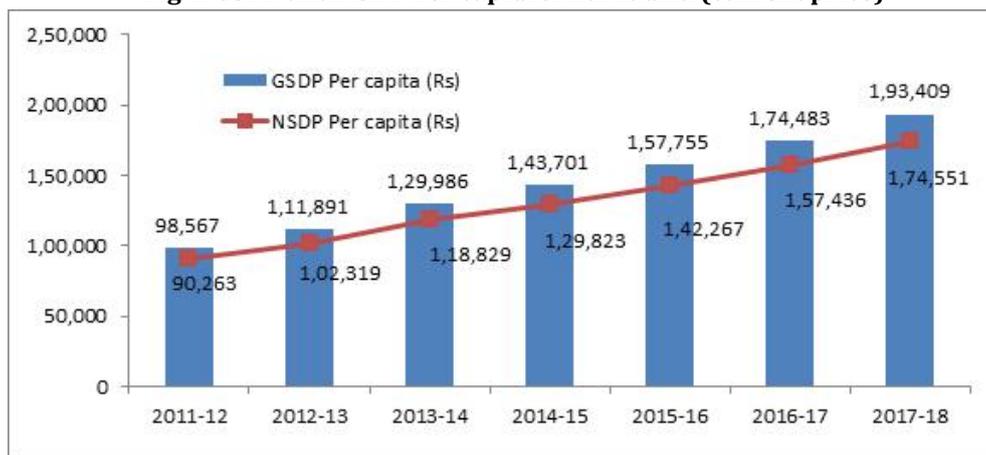
Source: Directorate of Economics & Statistics of Karnataka, Karnataka socio-Economic survey 2017-18.

5.4 GSDP and NSDP Per Capita of Karnataka (at Current Price)

The data provided in Fig 4 that shows the Per Capita GSDP (in Rs) increased at a CAGR of 11.89 per cent between 2011-12 and 2017-18 financial Year in Karnataka state. The Karnataka state per capita GSDP was increased from Rs. 989,567 (US\$ 2,056) to Rs. 1,93,409 (US\$ 3,001) during the

year 2011-12 to 2017-18. The Karnataka State per capita NSDP (in Rs) also increasing trend and it was increased at a CAGR of 11.62 per cent between 2011-12 and 2017-18. The per capita NSDP of Karnataka state was recorded at about Rs. 1,74,551 (US\$ 2,708.32) in the year 2017-18.

Fig 4. GSDP and NSDP Per capita of Karnataka (current price)



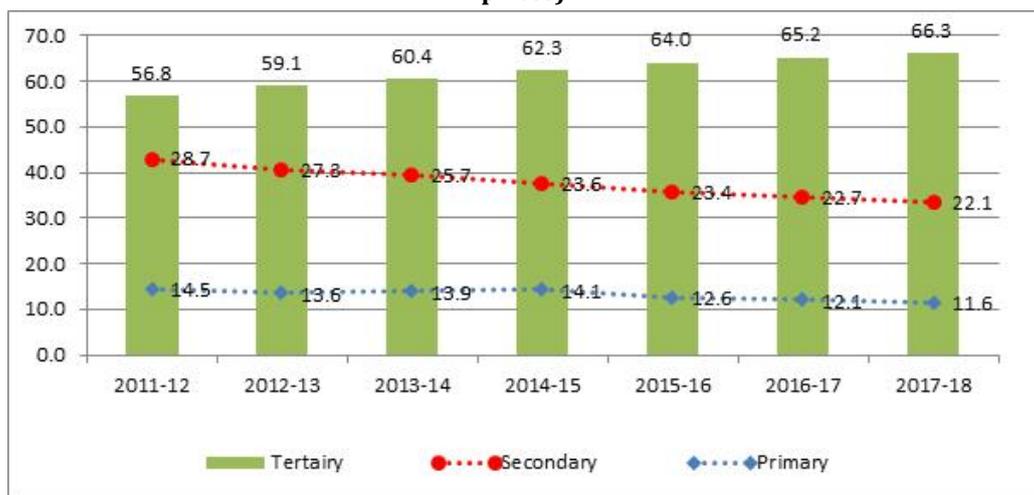
Source: Directorate of Economics & Statistics of Karnataka, Karnataka socio-Economic survey 2017-18.

5.5 Percentage distribution of GSVA

The Fig 5 shows that the tertiary sector contributed 66.63 per cent to the states GSVA at current prices in 2017-18 year. Followed by the secondary sector that contributes the 21.75 percent and also primary sector which contributes the 11.62 per cent to the states GSVA. The tertiary sector have 19.17 per cent compound annual growth rate and tertiary sector has been the fastest growing among the three sector from year 2011-12 to 2017-18. The growth has been driven

by trade, hotels, real estate, finance, insurance, transport, communications and other services. The secondary sectors compound annual growth rate grew at a 9.24 per cent between 2011-12 and 2017-18 year. The compound annual growth rate of primary sector grew at a 10.45 per cent between the year 2011-12 and 2017-18. The important observation that the primary sectors contribution to GSVA is very less compared to secondary and tertiary sector in Karnataka. And tertiary sector presently fastest growing sector among the three sectors and it contributes more to GSVA of Karnataka state.

Fig 5. Percentage distribution of GSVA (Gross State Value Added by economic activity at current prices)



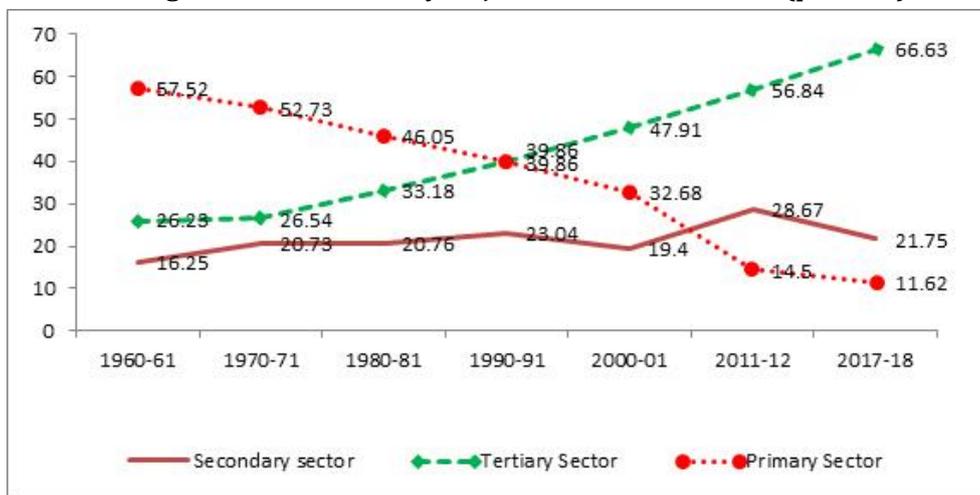
Source: Directorate of Economics & Statistics of Karnataka, Karnataka socio-Economic survey 2017-18.

5.6 Share of Income by major Sectors in Karnataka

Presently tertiary sector started grow faster than primary sector and secondary sector in Karnataka. Primary sector performance has declining trend. Tertiary sectors income share is more compared to other two major sector namely primary and secondary sector. The data provided in fig 6 that shows the Income Share of the primary sector has declined from 57.52 per cent to 11.62 per cent during 1960-61 to 2017-18 and it has declining trend. Income from secondary sector

increasing trend and it increased from 16.25 per cent to 21.75 per cent in 1960-61 to 2017-18. The tertiary sectors income share has increasing trend it has been increased from 26.23 per cent to 66.63 per cent during the 1960-61 to 2017-18. The important observation that in Karnataka state primary sector performance and growth is low compared to secondary and tertiary sector and tertiary sector has growing faster than other two major sectors in Karnataka.

Fig 6.Share of Income by major Sectors in Karnataka (per cent)



Source: Directorate of Economics & Statistics of Karnataka, Karnataka socio-Economic survey 2017-18.

5.7 Growth Rate of Production and Yield of Agricultural Crops in Karnataka

The data provided in Table 3 shows that Food grains production growth rate has increased from -20.6 to 29.1 during 2001-02 to 2007-08 due to increased the growth rate of yield of food grains from -13.7 per cent to 21.3 per cent. After it started declining due to not improvement in growth of food grains yield. The important observation that during the year 2007-08 to 2014-15 the growth rate of production of food grains in Karnataka has been declining trend (fig 7). Table 3 shows the Oil seeds production growth rate has increased from -34.0 per cent to 50.2 per cent during 2001-02 to 2007-08. The growth in oil seeds production was the result of

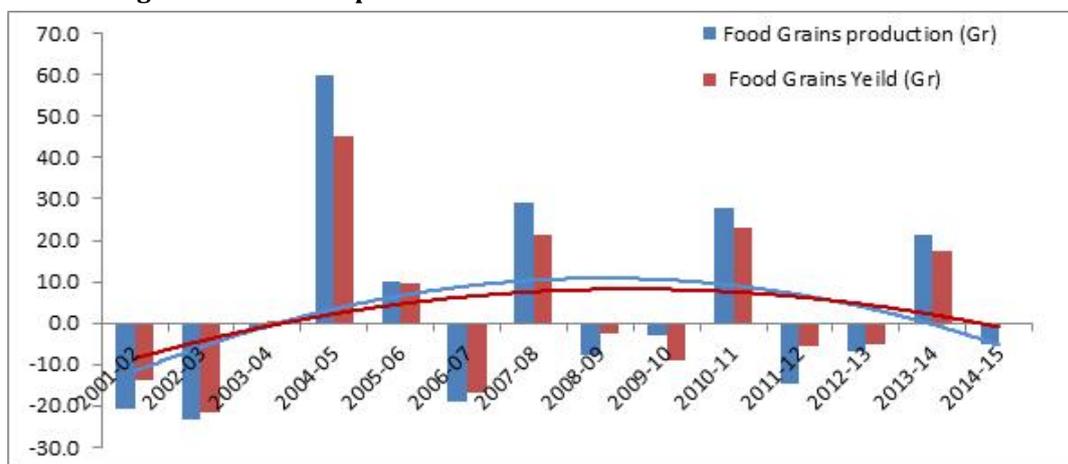
significant improvement in yield during the 2007-08. Then it started declining due to not improvement in growth of oil seeds yield. The important observation that during the year 2007-08 to 2014-15 the growth rate of production of oil seeds and yield growth rate also in Karnataka has been declining trend (fig 8). Table 3 shows the sugarcane production growth rate is raising from -23.1 per cent to 40.4 per cent during the 2001-02 to 2005-06 due to significant improvement in yield in sugarcane, after it started declining. The sugarcane production growth rate and yield growth rate of sugarcane started rising between the year 2009-10 and 2014-15.

Table 2. Growth Rate of Production and Yield of Agricultural Crops in Karnataka

Year	food grains		Oilseeds		Sugarcane	
	Production (GR)	Yield (GR)	Production (GR)	Yield (GR)	Production (GR)	Yield (GR)
2000-01	-	-	-	-	-	-
2001-02	-20.6	-13.7	-34.0	-27.9	-23.1	-21.3
2002-03	-23.4	-21.7	5.3	-8.9	-1.6	4.7
2003-04	-1.5	0.5	-13.0	-23.0	-50.7	-22.5
2004-05	59.9	45.3	54.8	31.3	-12.6	18.8
2005-06	10.0	9.5	5.6	-1.4	40.4	13.4
2006-07	-19.1	-16.9	-38.2	-24.9	20.3	-1.1
2007-08	29.1	21.3	50.2	55.5	10.1	-3.3
2008-09	-7.6	-2.5	-27.5	-24.2	-6.8	2.2
2009-10	-3.0	-9.0	-12.5	-4.8	33.0	11.0
2010-11	27.6	23.2	21.6	49.9	22.8	-2.0
2011-12	-14.7	-5.4	-19.1	-7.2	-0.5	-3.0
2012-13	-6.8	-5.2	1.8	1.2	-9.5	-8.3
2013-14	21.4	17.5	29.1	30.2	6.1	8.0
2014-15	-5.2	-0.5	-17.5	-15.2	15.5	77.2

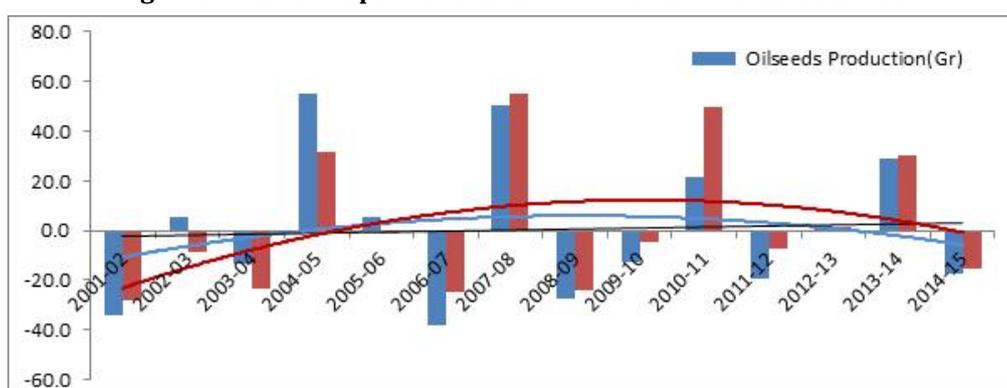
Source: Karnataka state Department of Agriculture, Bengaluru.

Fig 7. Growth rate of production and Yield of Food Grains in Karnataka



Source: Table 2.

Fig 8. Growth rate of production and Yield of Oil seeds in Karnataka



Source: Table 2.

5.8 Cropping Pattern in Karnataka

The cropping pattern of the region is influenced not only by agro-climatic conditions like rainfall, soil, temperature, government policies and programmes for crop production and speed of infrastructure development. The northern dry and central regions are the major producers of oilseeds. Groundnut is cultivated in the central region and sunflower, soybeans are popular in the northern dry region. During kharif

Cotton, pigeon pea and other pulses are planted in the northern dry region. Inter-cropping is practiced more in the northern and central regions compared to the southern region. In the hills and coastal region, the cropping system is rice along with ragi. Sugarcane is grown in sizable areas in all the regions using canal irrigation. In the southern region where Sericulture is an important. Coconut, areca nut, mango, grapes, sapota, citrus, etc. are the important fruit crops grown in the state. Karnataka has good climate condition with good potential for the development of horticulture and floriculture.

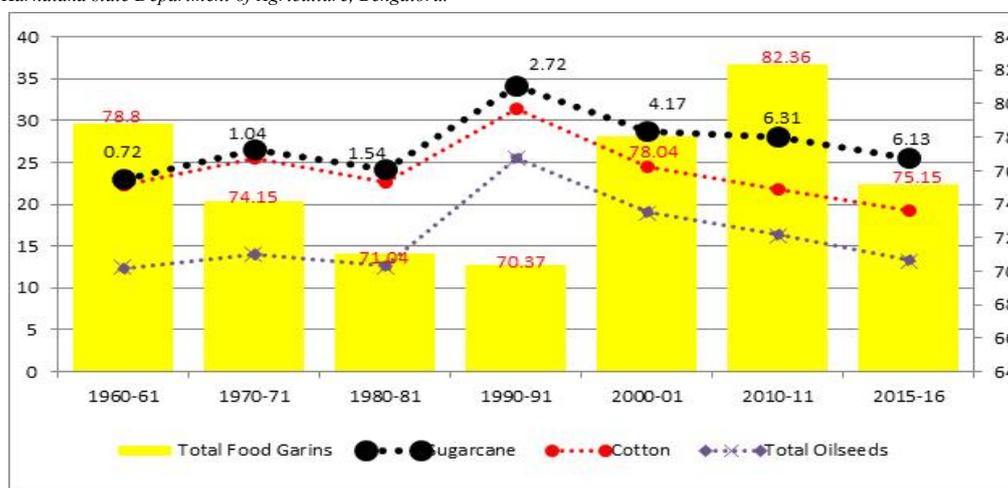
The overall trends in area allotted for various crops during six decades show that cropping pattern in Karnataka is dominated by food crops, with a share of more than 75.15 per cent of the gross cropped area in the state. The important observation from Table 3 and fig 9 that the area under food crops overall declined trend from 78.8 per cent in the year 1960-61 to 75.15 per cent of the GCA in 2015-16. The area under cereals declined from 62.73 per cent in 1960-61 to

44.77 per cent of the GCA in 2015-16. Area under pulses which is increased from 13.06 per cent to 30.38 per cent during the year 1960-61 to 2015-16. The important observation that area under annual crops namely cotton and sugarcane were sugarcane has increased trend and increased from 0.72 per cent to 6.13 per cent and cotton has declining trend, it declined from 9.84 per cent to 6.13 per cent in Karnataka state during the year 1960-61 to 2014-15 (table 4).

Table 3 Changes in Cropping Pattern in Karnataka (Area in Lakh Hectares)

Years	Crops				Annual Crops	
	Total Cereals	Total Pulses	Total Food Grains	Total Oilseeds	Cotton	Sugarcane
1960-61	62.73	13.06	78.8	12.47	9.84	0.72
1970-71	59.71	14.44	74.15	13.98	11.42	1.04
1980-81	55.73	15.31	71.04	12.51	10.12	1.54
1990-91	54.16	16.21	70.37	25.51	5.96	2.72
2000-01	57.57	20.47	78.04	18.94	5.52	4.17
2010-11	54.45	27.91	82.36	16.24	5.48	6.31
2015-16	44.77	30.38	75.15	13.2	6.13	6.13

Source: Karnataka state Department of Agriculture, Bengaluru.



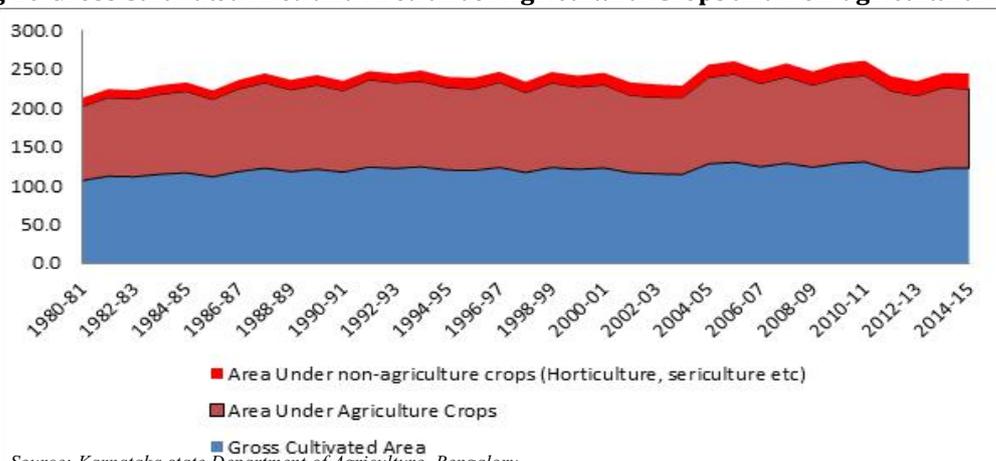
Source: Table 3

5.9 Gross Cultivated Area and Area under Agricultural Crops and Non-agricultural Crops

The data provided in fig 10 that shows the gross cultivated area and area under agriculture crops and Non agricultural crops in Karnataka state during 1980-81 to 2014-15. Gross cultivated area has increasing trend it increased from 106.60 lakh hectare to 122.47 lakh hectare during the 1980-81 to 2014-15. Gross cultivated area included the area under

agricultural crops and Non agricultural crops and both are having increasing trend from 1980-81 to 2014-15. The area under agricultural crops increased from 95.73 lakh hectares to 102.26 lakh hectares and non agricultural crops increased from 10.87 lakh hectares to 20.21 lakh hectares during the 1980-81 to 2014-15. The important observation that the area under agricultural crops were having more share in Gross cultivated area compared to Non agricultural crops in Karnataka State.

Fig 10. Gross Cultivated Area and Area under Agricultural Crops and Non-agricultural Crops



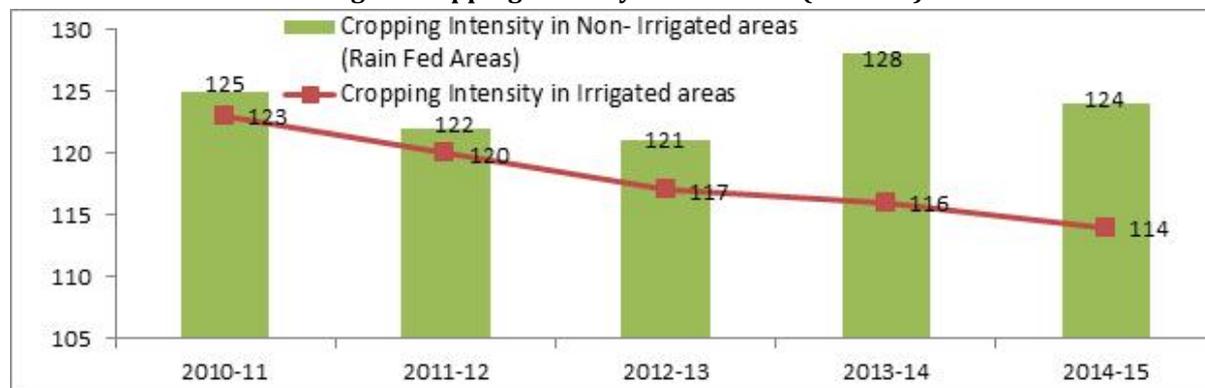
Source: Karnataka state Department of Agriculture, Bengaluru.

5.10 Cropping Intensity in Karnataka

Cropping intensity refers to rising of a number of crops from the same field during one agricultural year. The data provided in fig 11 that shows the cropping intensity in Non irrigated areas in Karnataka has been declined from 125 per cent to 121 per cent during 2010-11 to 2012-13 and next year

it is increased to 128 per cent due to irrigation facility is found to have significant impact on cropping intensity and it indicates the maximum area is cropped more than once. 2014-15 year it again declined to 124 per cent. Cropping intensity in irrigated area it has been declined from 123 per cent to 114 per cent during the 2010-11 to 2014-15.

Fig 11 Cropping Intensity in Karnataka (Per cent)



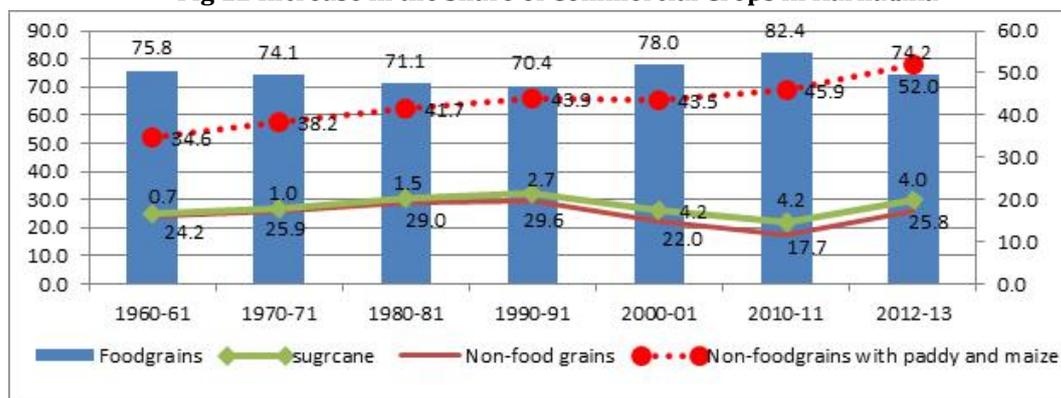
Source: Karnataka state Department of Agriculture, Bengaluru.

5.11 Increases in the Share of Commercial Crops in Karnataka

The table shows that presently food grains has declined trend but commercial crops have the increasing trend in Karnataka. Production of sugarcane, Non-food grains and non-food grains with paddy and maize has been increased trend in

Karnataka, sugarcane increase from 0.7 per cent to 4 per cent, non-food grains increased from 34.6 per cent to 74.2 per cent during the 1960-61 to 2012-13. The food grains are having decreased trend and its declined from 75.8 per cent to 74.2 per cent.

Fig 12 Increase in the Share of Commercial Crops in Karnataka



Source: Karnataka state Department of Agriculture, Bengaluru.

6. MAJOR FINDINGS AND SUGGESTIONS

6.1 Findings

- Rural population share of Karnataka state is declining and Karnataka state has 66 per cent rural population out of total population in 2001 which is declined to 61.43 per cent in 2011.
- The workers proportion has been changed. The share of both cultivators as well as agricultural workers has been declined compared to total workers in Karnataka state 2011.
- At current price, the Gross State Domestic Product (GSDP) and Net State Domestic Product (NSDP) both are increasing trend in Karnataka state.
- The primary sectors contribution to GSVA is very less compared to secondary and tertiary sector in Karnataka. And tertiary sector presently fastest growing sector among the three sectors and it contributes more to GSVA of Karnataka state.

- In Karnataka state, income from Primary sector is less compare to secondary and tertiary sector. Present Karnataka state received more income from tertiary sector rather than secondary and primary sector.
- Food grains and oil seeds Production and yield growth rates are declining trend but sugarcane production and yield growth was increasing trend in Karnataka state. And increasing in commercial crops production in Karnataka.
- The overall trends in area allotted for various crops during six decades show that cropping pattern in Karnataka is dominated by food crops, with a share of more than 75.15 per cent of the gross cropped area in the state.
- The area under agricultural crops was having more shares in Gross cultivated area compared to Non agricultural crops in Karnataka State.
- Cropping intensity has declining in both irrigated area and non-irrigated area in Karnataka state.

6.2 Suggestions for to improvement of Primary (agriculture) sector in Karnataka state.

- Cooperative principles and cooperative farming is major tool for increased the share of agriculture contribution to state economy. Therefore to give more importance to cooperative farming and encouraged formers to adopt it.
- To protect the agricultural producers by providing fare prices, it leads to the growth of the agricultural sector in Karnataka state.
- Surplus land can be providing to landless farmers and marginal farmers.
- To encourage to youths work in agriculture.
- Farm loan is temporary relief, the Government should emphasize on to development of infrastructure.
- Government should take up the responsibility of providing training to the farmers to acquire new skills.

CONCLUSION

Structural changes in agricultural sector it is also one type of the agrarian crises in Karnataka state. Agriculture is mainly depends upon monsoon so rural people more interested to go urban area due to getting jobs and were wages are high compared to village. Agricultural sector facing problem of agricultural labour due to agricultural labourers are shifted to urban area because of wages in agriculture sector is low compared to urban wages. The role of agriculture in the Karnataka economy has undergone a major change. In Karnataka state primary sector performance and growth is low compared to secondary and tertiary sector and tertiary sector has growing faster than other two major sectors in Karnataka. The primary sectors contribution to GSVA is very less compared to secondary and tertiary sector in Karnataka. And tertiary sector presently fastest growing sector among the three sectors and it contributes more to GSVA of Karnataka state. Its share of employment has significantly diminished and the productivity per worker as well as overall food production has greatly increased. This was caused not only by technical progress in agriculture, but also by the creation of new job opportunities in the manufacturing and service sectors. The facilitation of structural change is both an opportunity and a major challenge for the Karnataka state.

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