An Analysis of Regional disparities in Agricultural sector of Karnataka State

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Karnataka is one of the pioneering States, which has undertaken a number of measures for the development of agriculture. The Department of Agriculture and Statistics came into existence as early as 1886. There were agricultural banks in 1894 itself providing financial help to the farmers. Fast-growing varieties of paddy, potato and groundnut seeds were distributed during 1914-15. High Yielding Variety of maize, which was imported from the USA, was introduced in Mandya district during 1949-50. The College of Agriculture at Hebbal, Bangalore, was started on 1st August 1947 to spread higher technical education in the field of agriculture. Kanva reservoir, Krishna Raja Sagar, Vanivilas Sagar, Visvesvaraya Canal and Bhadra Anecut were some of the great achievements of the State before the introduction of Five-year plans,

Unfortunately, the distinction achieved by the State in registering a higher growth rate than that of all India level during the 1970s could not be consolidated in the subsequent decades. The reason for the slowing down of growth rate could be attributed to both technical and natural factors. Low rate of increase in the area under minor irrigation, inefficient distribution of quality seeds at crucial times and inadequate attention to dry land farming along with recurrent droughts retarded agricultural progress during 1980s. Food production has almost remained stagnant throughout this decade due to inadequate utilisation of irrigation potential and tilt towards commercial crops for greater comparative cost advantage.

This paper is an attempt to understand overall agricultural development in Karnataka with particular emphasis on progress across different districts with the following objectives:

1. To study the overall agricultural progress at the state level
2. To trace developments in the agriculture sector across all the districts of the state.
3. To study trends in the development and backwardness in the agriculture sector along with the factors responsible.

This study tries to make a comparative analysis across the four physiographic regions with the help of upward or downward movements of index values of all the districts for the time points starting from 1980-81onwards. CV values have been analysed to study inter-district disparities. It is based on secondary data collected from the agricultural department, Government of Karnataka.

Regional variations in the agricultural sector

With this negative trend at the aggregate level one should also look into another Inherent problem having still wider ramifications, namely, the problem of regional variation In the level of agricultural

development across the four regions of Karnataka The State comes under Zone 10, comprising of Southern Plateau and hilly areas The various districts of the State fall in sub-regions 1, 2, and 5 On the basis of agro-climatic conditions. The State has been divided Into the following ten Zones. Districts falling In each of the Zones are given below -

North Eastern Transition Zone	Bidar, Gulbarga
North Eastern Dry Zone	Gulbarga, Raichur
Northern Dry Zone	Raichur, Bijapur, Bellary, Dharwad
Central Dry Zone	Chitradurga, Hassan, Turnkur and Chikmagalu
Eastern Dry Zone	Tumkur, Bangalore and Kolar
Southern Dry Zone	Mandya, Tumkur, Mysore and Hassan
Southern Transition Zone	Mysore, Hassan, Chikmagalur and Shimoga
Northern Transition Zone	Belgaum and Dharwad
Hilly Zone	Uttara Kannada, Belgaum, Shimoga, Chikrnagalur, Dharwad, Hassan and Kodagu
Coastal Zone	Uttara Kannada, Dakshina Kannada

A regional analysis of agricultural progress in the beginning of the 1970s reveals the fact that the Northern Maidan was the most backward region in Karnataka. All the districts of this region fell into the backward and highly backward category. On the contrary, Southern Maidan was the most progressive, as all the districts except Tumkur were in the developed category. There was a clear cut north-south dichotomy which could be attributed, in general, to the apathy with which most of the northern districts were looked down upon by their previous administrators at the time of their integration into the State as against the progressive policies of the Mysore rulers in the south.

The position was no better in Malnad Region. It experienced a paradoxical situation with Shimoga in the forefront and the rest of the districts in the backward category. A contrasting scene prevailed in the Coastal Region with both the districts at the opposite ends of the ladder. Geographical factors such as forest cover and topography were directly responsible for the relative position of Uttara Kannada and Dakshina Kannada districts, comprising this region.

Thus, there were marked regional disparities across the four regions. This was also proved by the coefficient of variation, which was quite high (15. I9 per cent) during 1970-71. Except for some minor changes in the position of a few districts, the status quo prevailed during 1980-81. On the positive side, Chikmagalur district that was in the backward category in 1970-71 climbed up substantially to the highly developed category during 1980-81. Its index value shot up from 10.30 to 16.26 between the two timepoints. A major factor for this remarkable improvement was considerable expansion of area under high yielding variety crops and increased mechanisation with greater usage of tractors and

other agricultural implements. Area under high yielding varieties, which was 15,525 hect in 1970-71, went up to 73,653 hect in 1980-81.

The progress of the Bellary district during 1980-81 is worth noting. It has moved up from the backward to developed category with a rise of its index values from 10.66 in 1970-71 to 14.67 in 1980-81. The crucial factor that has contributed to this increase in the value was the irrigation infrastructure in the form of the Tunga-Bhadra canal. During this period, the gross area irrigated by canals in this district was next only to Mandya and the net area irrigated by the same source was the largest. Gross area irrigated by canals was 1,07,638 hector and the net area irrigated by canals was 83,276 hect. The area under lift irrigation was the largest in this district. It was 9,264 hect, the State aggregate being 29,631 hect. The district benefited enormously from both major and medium irrigation.

The district of Mandya improved its position, moving up from developed to highly developed category and retained its status throughout the study period. Thus, in all, eight districts attained developed status during the early 1980s. As many as ten districts were in the backward category during 1980-81 as against nine districts in 1970-71. There was only one district in the highly backward category in 1980-81 as against three during the previous time-point.

Agricultural progress received a setback in Mysore district, which slumped down from the developed to the backward category between 1970-71 and 1980-81. In fact, it could not regain its original place in the subsequent years as well. Though its index value went up from 10.96 to 12.57, it could not match up with the pace of development seen in the highly developed and developed districts. It ranked relatively low with respect to most of the indicators analysed. Though the extension of irrigation and cropping intensity were higher, irrigation intensity was quite low in this district. Percentage of gross area irrigated to net area irrigated worked out to be just 113.22 per cent as area irrigated more than once was just 1 1,239 hect out of 85,585 hect of net area irrigated, giving it 12"' place overall. Even the average size of land holding was quite low in Mysore district. A majority of the farmers owned, on an average. 0.5 hectare to 2.0 hect of land. Cultivation of high yielding crops was also comparatively less than other developed districts. 'Though the area under high yielding varieties increased from 69,023 hect in 1970-71 to 1,94326 hect in 1980-81, Mysore could stand only at ninth place overall. In addition, the district occupied the last place in the usage of tractors as well.

As far as other backward districts were concerned, Belgaum continued to suffer from the same factors discussed in the first time-point. It also suffered from the slow progress of high yielding variety programmes. The extent of irrigation, which was 11.12 per cent during 1970-71, did increase considerably to 13.02 per cent over a period of ten years. But even this increase could only marginally improve the position of the district.

The district of Kodagu witnessed substantial expansion in area under high yielding crops. It was only 1,674 hect during 1970-71 and increased to 25.740 hect during 1980-81. This has pushed up its rank from 18th to 12th between two time points. However, there was considerable deterioration in both intensity and extent of irrigation. Even the cropping intensity was quite low. Area irrigated more than once showed a big fall from 719 hect to just 167 hect. Extent of irrigation also declined as net irrigated area decreased from 8,498 hect to just 3,236 hect. In addition, there was a severe decline in area sown more than once from 12,476 hect in 1970-71 to 1159 hect in 1980-81. 'This was because of greater area coverage by plantation crops such as coffee, tea and rubber.

Raichur district which experienced a vast expansion of medium and major irrigation had very high irrigation and cropping intensity but the extent of irrigation declined and high yielding varieties did not make much dent at this stage. In Tumkur district, both extent of irrigation and cropping intensity was on the lower side. Slower rate of increase in extent of irrigation, area under high yielding variety

and fertiliser consumption forced Bidar district to stay in the same group, whereas low irrigation intensity, lower fertiliser consumption and lower usage of tractors hampered agricultural progress in Uttara Kannada district.

Progress in Dharwad and Bijapur districts should be highlighted here. These districts promoted themselves from highly backward category to the backward category. An increase in irrigation intensity has benefited Dharwad district a great deal. 'There was a substantial increase in the area irrigated more than once which rose from 100.63 per cent to 114.29 per cent. Higher irrigation intensity did help Bijapur district to marginally improve its performance enabling it to come out of the highly backward category. Gross area under canals went up from 7,904 hect in 1970-71 to 29,335 hect in 1980-81 and net area under canals from 7,904 hect to 17,282 hect. It may be noted here that in Bijapur district gross area irrigated by wells in 1980-81 was 75,523 hect, which was largest in the entire State

As against this, Gulbarga district presented a dismal picture. Its position remained static as it stood last in both the time-points 1970-71 and 1980-81. Even its index value increased from 8.51 to just 8.95.

A region-wise analysis of agricultural progress during 1980-81 reveals some improvement in the position of Northern Maidan. Particularly, progress in Bellary district is worth noting. As against this, there was some deterioration in Southern Maidan with Mysore district sliding down to the backward category. There was an improvement in Malnad Region also as Chikrnagalur joined Shimoga as a highly developed district. There was virtually no change in the position of the Coastal Region.

The final outcome of all these changes was an increase in the value of coefficient of variation to 16.28 per cent over 15.19 per cent in 1970-71. It should be noted that this is the highest coefficient of variation value for the entire study period. 'This implies that the inter-district disparities have widened to a great extent during the period.

In general, high yielding varieties had a considerable impact between 1970-71 and 1980-81 in all the districts except Tumkur and Gulbarga. The high yielding variety programme, which was started in the State during the late 1960% gathered momentum and recorded very high progress during the 1970s. It was aided by sustained government efforts, expansion of irrigation, provision of requisite inputs and mechanisation. All these steps helped to push up the State average from 10.93 to 13.43 indicating good agricultural progress at the aggregate level. However, even these developments did not help the cause of eleven districts, which fell below the State average during 1980-81.

As we approach 1990 there are some interesting changes in some districts. While Shimoga and Mandya districts have remained in the highly developed category. Other districts of the same category, namely, Daksliirla Kannada and Chikmagalur slid down, the slide being quite drastic in the case of the latter. It should be noted that the index value itself has declined from 16.26 in 1980-81 to 14.20 in 1990-91, which is a rare phenomenon.

The data related to the key indicators of agricultural development in Chikmagalur district clearly indicate the reasons for such a decline. There was a considerable decrease in the area irrigated by canals and tanks. When we compare the position between 1980-81 and 1990-91, we can notice that gross area irrigated by canals was 11,731 hect but it decreased to 7,220 hect. Similarly, net area irrigated by canals was 11,584 hect and decreased to 5,950 hect. Gross area irrigated by tanks decreased from 18,459 hect to 10,881 hect and net area irrigated by tanks also decreased from 16,336 hect to 8,606 hect. A crucial factor in this context is the rainfall, which was below normal fbr most part of the 1980s. In addition, siltation and encroachment were the common problems contributing

towards the decline in the area under tank irrigation. As a result, this district scored a very low value (18' rank) with respect to the second indicator, representing the extent of irrigation. Cropping intensity was also low and area under high yielding varieties was also not very impressive.

As against the negative growth in Chikmagalur district, there was good progress in Belgaum and Kodagu districts. Both of them moved up from the backward to the developed category, thus coming out of the shell of agriculturally backward status in which they found themselves in the previous decades.

Improved irrigation facility was a major factor behind the agricultural prosperity of Belgaum district. Between 1980-81 and 1990-91, there was a vast expansion in area under canals and tube/ bore wells. Gross area irrigated by canals went up frorn 67,199 hect in 1980-81 to 1,06,426 hect in 1930-91 and gross area under tube/bore wells from 1,846 hect in 1984-85 to 33,530 liect in 1990-91. Thus, in canal irrigation, the district held fourth rank and in well irrigation, second rank in the entire State. Taking advantage of the irrigational facilities, area sown more tila11 once increased rapidly from 28,625 hect to 96,157 hect during 1980-81 and 1990-91 respectively. The district had a distinction of being first in the usage of tractors having a total of 8,065 tractors in 1990-91. 'These achievements of Belgaum district can be attributed to the co-operative movement that has a strong base in this region.

As far as Kodagu district was concerned irrigation intensity was the highest in the State during 1990-91(161.82 per cent). Area irrigated more than once in this district stood at 1,700 hect. The district witnessed good rainfall toward the end of 1980s. 'Though it was below normal, the actual rainfall went on increasing up to 1990-91.

While Belgaum and Kodagu districts moved up from backward to developed category, at the bottom, Gulbarga district lifted itself from highly backward to the backward category. This was mainly due to the extension of the high yielding variety Programme. Area under high yielding variety crops went up enormously fiom 40,780 hect in 1980-81 to 3,91,100 hect in 1990-91. This expansion was the direct outcome of the irrigation facility, which expanded to a great deal both in terms of intensity and extent.

The position was just the opposite in case of Bidar district, which has dropped down to the highly backward category mainly on account of the decrease in the area under high yielding variety crops. 11s indicator value with respect to the percentage of area under high-yielding variety to gross sown area has decreased from 13.05 per cent to 10.94 per cent between 1980-81 and 1990-91 respectively. In case of other seven districts falling into the backward category, the same Sectors that were responsible for their status in the earlier decades were also operational to a great extent in 1990-91.

Extent of regional disparities, which had widened during 1980-81, did come down during 1990-91. The coefficient of variation value, which rose to 16.28 per cent in 1980-81, came down to 14.07 per cent it1 1990-91. This was because of sustained improvement in the backward districts, which recorded constantly rising index values between the two time-points.

If we analyse agricultural progress region-wise between 1980-81 and 1990-91 we can notice a constant improvement in the Northern Maidan, whereas the position of Southern Maidan remained unchanged. Number of backward districts has come down from six to five with the addition of' Belgaum district to the developed category. In Malnad Region, remarkable progress was witnessed in Kodagu district, which has moved up from the backward to developed category, but Chikmagalur district has fallen back. In the Coastal Region, Uttara Kannada district continued to remain in the backward category but Dakshina Kannada district has relegated itself from the highly developed to the developed category.

The position during 1994-95 is no different from that of 1990-91 except for two changes. Sustained progress enabled Raichur district to push itself just above the Slate average whereas a slight deceleration in Kodagu district forced it to fall below the same. The Tunga-Bhadra project has enabled Raichur district to have greater utilisation of existing agricultural potentiality. It stood first with respect to canal irrigation in the entire State. However, very high irrigation intensity which elevated Kodagu district in 1990-91 has decreased subsequently as the percentage of gross area irrigated to net area irrigated has come down from 161.82 per cent to 154.87 percent.

As far as the nine backward districts were concerned there was development reflected by a rise in their index values but this rise was not adequate enough to take them above the State average. They could not get rid of the adverse factors discussed earlier, compelling them to remain in the same category.

Bidar district, which was in the highly backward category in the previous time point, witnessed further deceleration. Its index value declined from 11.84 in 1990-91 to 11.49 in 1994-95. Cropping intensity reduced further as the area sown more than once decreased from 79,879 hect in 1990-91 to 73,668 hect in 1994-95. Irrigation intensity also declined from 114.49 per cent to 107.33 per cent.

A region-wise analysis of the progress of the agricultural sector for this period points towards the static position of Southern Maidan and Coastal Regions. Northern Maidan continued to be progressive as Raichur district climbed up to the developed category. Only four districts of this region continued to remain in the backward category. However, the deceleration in Kodagu district forced it back to the backward category causing a negative impact on the Malnad Region. The coefficient of variation value has further decreased to 14.03 from 14.07 in 1990-91 indicating narrowing down of regional disparities.

Conclusion

Thus, in absolute terms, there has been sustained progress in the agricultural sector in Karnataka. It is a welcome trend to notice that most of the districts have recorded increasing index values. Improvements in irrigational facilities, impact of high yielding varieties, greater usage of fertilisers have all led to this progress. Role of minor irrigation with greater utilisation of groundwater is also significant for increasing the rate of development between 1970-71 and 1994-95.

Extent of regional disparities that have widened between 1970-71 and 1980-8 1 have also come down in recent years. This is mainly because of' sustained improvement in the backward districts. Progressive tendencies are quite strong in the Northern Maidan region whereas Southern Maidan region is experiencing a state of stagnation in the recent decades, expansion of medium and major irrigation infrastructure has greatly enhanced agricultural prospects of Raichur, Bellary, Dharwad, Bijapur and Belgaum districts. However, in relative terms the picture is not so bright. A large number of districts which still figure in the backward and highly backward categories give rise to great concern. Their rate of progress is still inadequate to catch up with the progressive districts. While the structural factors have certainly impeded their progress, the lack of adequate efforts to enhance their position over and above the State average draws our attention towards ways and means to further their cause in the future.

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