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## **Agricultural productivity in Karnataka: A composite regions**

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### **Abstract**

Agricultural productivity is a multidimensional concept, which includes technological advancement, effective management of available resources and organizational set-up for the agricultural production. These factors in turn affect the relative production in any region.

**Keywords:** low, medium and high productivity in agriculture, varieties in agricultural regions, Growth of productivity in agriculture.

### **1. Introduction**

In order to assess the productivity variations in each of the twenty-seven (including newly created) districts of the state, the best two methods (out of seven) <sup>[1]</sup> for the evaluation of productivity have been applied, considering all the major food crops grown in the state, namely, Rice, Ragi, Jowar, Bajra, Maize, Wheat, Other Cereals, Tur, Gram, Other Pulses, Groundnut, Sugarcane and Cotton since the beginning of 1993-94 in the state up to 2007-08.

As said above, the following two approaches have been adopted for evaluating productivity, viz;

- a) Agricultural Productivity Based on Output per hectare of Cropped Land (Price Weighted).
- b) Agricultural productivity Based on Output per Agricultural Worker (Price Weighted).

It would be worthwhile to compare the level of productivity with growth rate by superimposing the growth rate over the level of productivity so that a rational picture of the agricultural development in the state may emerge. The process of super imposition leads to the formation of Six distinct productivity regions.

Theoretically, the following nine combinations as seen from the bottom index of are possible:

- a) High Productivity level and high growth rate,
- b) High Productivity level and medium growth rate,
- c) High Productivity level and low growth rate,
- d) Medium Productivity level and high growth rate,
- e) Medium Productivity level and medium growth rate,
- f) Medium Productivity level and low growth rate.,
- g) Low Productivity level and high growth rate.,
- h) Low Productivity level and medium growth rate.,
- i) Low Productivity level and low growth rate.,

It is clear from that out of these nine combinations only six appear. Among Six Combinations, the combination (ix) comprises two districts (more than 7.00 percent of the total number of districts), and the combinations (i, v and vi) comprise twenty-three districts (more than 85 percent) each, while the combinations (iv and viii) include only two districts and the remaining combinations (ii and vii) consist no districts. Due to negligible occurrences of a few combinations, they are included in some other major combinations after considering their respective characteristics of growth and level. Thus, six major productivity regions are recognized as following:

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## 2. Dynamic Region

It will be seen from that the dynamic region includes seven districts and covers 27.87 percent of the state's total geographical area. It extends over the districts of Shimoga, Belgaum, Bijapur, Bagalkot, Bidar, Kodagu and Mandya. These regions show the high level of productivity with a high rate of growth. The high level and high growth of the productivity of this region are related to availability of developed infrastructure.

The districts falling in this region are well supplied HYV. The fertilizer consumption as well as the availability of agricultural credit is also highest in this region as compared to other districts of the State. The agricultural credit advanced by the Co-operative Banks and by Primary Agricultural Credit Societies is again highest in this region. These factors have thus combined to make these districts a region of dynamic character with a high level and high growth of Productivity.

## 3. Progressive Region

This region is characterized by the medium level of productivity and high rate of growth. The districts of this region are quite progressive in the sense; that despite a medium level of productivity they show a high rate of growth which ushers a promising future development of the areas. But as per the existing data/information this region does not exist at present in Karnataka. The districts of Kodagu, Bidar, Bijapur, Bagalkot were the progressive districts upto 1995 and have now entered into the dynamic region at present. The progressive character of these areas has been due to the different combination of infrastructural facilities developed in these districts, along with progressive intensity of irrigation, which is more than 30.00 percent and increasing coverage of area under HYV due to several rural development programs: The increasing consumption of NPK as well as the facilities of agricultural credit provided by different institutions at an increasing rate in these districts have pushed them from progressive region to the dynamic region in the state.

## 4. Stagnant Region

This region includes all those districts which are characterized by the medium level of productivity and a medium rate of growth. This region comprises totally nine districts which account for 29.843 percent of the total geographical area of the state (Table 6.5). A major part of the region constitutes a continuous belt through the southern districts of Karnataka. The districts which fall in this region are, namely, Chitradurga, Davangere, Chikkamagalur, Hassan, Mysore, Chamarajnar, Dakshina Kannada and Udupi. In addition to these districts, Bellary also shows a similar trend. The medium level of productivity with a medium rate of growth in this region is associated with the intensity of an area under irrigation more than 30 percent in six districts out of nine and in the remaining three districts of the region. It is between the rate of range of 20 and 30 percent. The area under HYV in Six districts of this-region has been registered between 35 and 40 percent and in the remaining three districts around 25 percent. The levels of fertilizer consumption are in between 25 and 30 kg per hectare in the first six districts and 15 to 20 kg per hectare in the remaining districts. The districts of this region are marked for relatively low level of credit advancement as compared to the state average.

## 5. Sluggish Region

The districts included in this region show a medium level of productivity with a low rate of growth. The districts included in this region are Uttar Kannada, Dharwad, Gadag, Haveri, Raichur and Koppal of north Karnataka. In addition to these districts Kolar of South Karnataka also shows a similar trend. All these districts together comprise 24.12 percent of the state total geographical area.

The majority of the districts of this regional type shows a medium level of productivity below average, which is characteristically a consequence of institutional and infrastructural conditions of this region. The intensity of irrigation in two out of seven districts is between the range of 40 and 50 percent which are namely, Raichur and Koppal. The four districts show the intensity of irrigation around 30 percent of area and in the remaining one district i.e., Uttar Kannada, it is less than 25 percent. The coverage of the area under the high yielding variety program extended between the percentage figures 20 and 35 percent. The consumption of NPK in this region ranges between 20 and 30 kg per hectare. The level of agricultural credit advancement in this region is also low compared to the state average.

## 6. Acute Region

The districts of Gulbarga and Bangalore (R) suffer from low levels of productivity and the trend in the productivity growth is of medium level. The total geographical area covered by this region constitutes 11.49 percent of the state's area.

The acute conditions of productivity are due to certain socioeconomic factors and lack of infrastructural facilities. For instance, the intensity of irrigation and area planted under HYV exhibit a similar pattern. The area under irrigation and HYV ranged between 25 and 30 percent in Bangalore (R) district. Whereas, the proportion of area under these two aspects, in Gulbarga is comparatively low being less than 25 percent. The average consumption level of NPK in this region is also low i.e., less than 20 kg/hectare. Similar is the situation in the case of advancement of credit to the agriculture which is comparatively low in this region. As a whole, the levels of infrastructure and institutional facilities in the district of Gulbarga are comparatively low which may be accounted as the causes of acute condition of productivity in this region. Thus, on the one hand, productivity level is to be raised with the help of better supply of inputs and the provision of credit, and on the other the productivity growth rate should show an upward trend. The facilities of better credit will help the farmer to avail these inputs easily and thus raise the level of productivity.

## 7. Problem Region

This region comprises two districts, which account for 6.67 percent of the total area of the state. It includes all those districts which show a low level of productivity with low rate of growth. These districts are namely, Tumkur and Bangalore (U).

It is indeed a matter of great concern that two districts of the state covering an area of 12,788 Sq.km. have a low level of productivity over a period of fifteen years and the growth rate has also been low. This region needs the attention of the state on a priority basis so that its level of productivity is raised to that of about of the medium level, if not to the high level. The main reasons of the low productivity of these districts seem partly physical and partly socioeconomic. For

instance, in the case of Tumkur district it is suffering from lack of irrigation facilities and also required infrastructural facilities. This region has scanty rainfall and moreover, this region is gambling with nature. Whereas, Bangalore (U) district is suffering from the rapid growth of urbanization and increasing use of land for non-agricultural purposes.

### **8. Conclusion**

From the above, it is clear that regional variation exists in Karnataka in respect of agricultural development. Regional imbalance in agricultural productivity caused the undevelopment of agriculture in Karnataka state. Regional imbalances in agricultural productivity are due to special variations in the availability of important agricultural inputs. Provision of agricultural input along with the development of basic infrastructure will help to develop agriculture. Further diverting of human labour pressure from agriculture sectors to some non –agricultural sector will increase the productivity of the agricultural sector and contributes positively towards the agricultural development in the state.

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