CHAPTER VIII

CONCLUSION

Though economists have long recognised the existence of regional dualism at all levels of national development and throughout the historical experience of almost all presently developed countries, the phenomenal increase in their interest in regional analysis has been witnessed since the early fifties only. Most of the Regional Analyses - theoretical as well as empirical — centred around the famous hypothesis that a 'statistic' describing regional inequality will trace out an inverted 'U' over the national growth path. In fact, several empirical studies have been conducted in recent years to test this hypothesis for a number of countries. The evidences collected by J. G. Williamson,[1] inter-alia, show, fairly conclusively, that regional disparities in per capita income tend to widen in the early stages of the development process and then narrow down. In other words, regional inequality tends to increase

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1 J. G. Williamson, op. cit.

in the early stages of development. But there appears to be no time limit for the reversal of this trend. The pertinent question here is, whether the regional inequality should be allowed to continue till the natural reversal takes place. However Gunnar Myrdal points out that, "inequality and the trend toward rising inequality stand as a complex of inhibitions and obstacles to development and that, consequently there is an urgent need for reversing the trend and catering for greater equality as a condition for speeding up development".[2] Therefore, the policy of growth with equity must take into consideration the levels of development and rates of growth.

However, a close examination of the objectives stated in the Indian Five Year Plan Documents reveals that the Indian Planner's interest is continuously increasing, ever since the commencement of Five Year Plans, towards the problems of Regional Disparities in India. Further, increasing attention is being paid in the Indian State Plans, to the regional dimension, particularly since the begining of the Third Five Year Plan. It needs to be noted that Karnataka is one of the states showing keen interest in recognising the problem of regional disparity. In fact, direct and indirect references have been made in the

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2 G. Myrdal, "The Challange of Poverty", Allen Lane, The Penguine Press, London, 1970, pp 50.

Karnataka State Five Year Plan Documents about the issues concerned with regional disparities in the State. The State Planners are attempting to correct regional imbalances through special programmes and resource allocation. In addition to this, the state government has also evolved some planning machinery at the district level. Hence, a systematic and thorough study of levels of development, periodically, of different regions in the state becomes imperative. Such a study will throw some light on the achievements and failures of the policies followed in the past and indicate the direction of change desired in future policies.

The nature of regional development of Karnataka State has been studied so far, of course only by a few researchers, using the index of development as a measure of development. However, it seems, no systematic investigation of testing some of the hypotheses relating to regional development and the factors affecting regional disparity in Karnataka, has been attempted on the basis of District Per Capita Income as a measure of development. Through the using of the 'District Per Capita Income' as the measure of development in the present study, an attempt has been made to test some hypotheses relating to Regional Development and to study factors affecting regional

development with reference to Karnataka state covering the period 1960-61 to 1975-76. It is in this respect that the present study shows a departure from the other studies.

The study covers all the nineteen administrative districts of Karnataka. For examining the extent and factors of inter-district variation in per capita income and agricultural productivity, cross-section analysis has been resorted to. Such a restriction is governed exclusively by the availability of data. The study is conducted on the basis of secondary sources of data. Wherever the published data were not available, the data have been obtained from official records (unpublished), and they are duly adjusted and estimated in concurrence with economic concepts and are made comparable over the period of time. The data have been collected, mostly, from Bureau of Economics and Statistics, State Department of Agriculture, Statistical Abstracts of Karnataka, Population Census Publications, Livestock Census Reports, Census of Land Holdings in Karnataka and C.S.O. Publications.

While examining the various hypotheses given in Chapter One , different statistical and econometric methods, like coefficient of variation, district relatives, correlation analysis, technique of multiple regression , shift and

share analysis, gini concentration ratio, etcetera, have been used. The detailed discussions of the empirical findings of the present work are given in summary form in the succeeding paragraphs.

Although the district per capita income in Karnataka has varied from Rs.327 in 1960-61 to Rs. 418 in 1975-76 (at 1960-61 Prices), and these changes have been accompanied by differential changes among the districts, the rank order of the districts has not changed much. In line with this, the high ranks are, consistently maintained by Kodagu, Shimoga, Uttar Kannada, Chikmagalur, Dakshina Kannada, while, the reverse is true, in general, in the case of Dharwad, Kolar, Gulbarga, Bijapur and Bidar for all the periods of study, viz., 1960-61, 1970-71 and 1975-76.

The analysis of coefficient of variation and the analysis of income relatives indicate that there is convergence of income disparities in the state over the period 1960-61 to 1975-76. However, the disparities are not too small to be ignored.

The correlation analysis reveals that district per capita income of Karnataka, in general, is positively correlated to the share of the primary sector to the total

product and negatively correlated to the shares of the secondary and tertiary sectors to the total product for the years 1960-61, 1970-71 and 1975-76.

From the district-wise growth experiences, it is found that neither the richest district i.e., Kodagu grew faster than any other district, nor the poorest district i.e., Bidar grew slower than any other district in the State of Karnataka. However, it has been observed that the average growth rate of all the backward districts is above the average growth rate of all the developed districts in the state.

The factors affecting the per capita income variations have been examined through multiple regression analysis. The correlation analysis shows that the high per capita income is positively associated with the high levels of productivity, literacy rate and infrastructure in Karnataka. However, there appears to be no definite association between the per capita income and the factors like effective worker participation rate, degree of industrialisation and proportion of active population. The linear multiple regression analysis, conducted for the cross - sectional data for the years 1960-61 and 1970-71 , indicates that, although the effective worker participation rate and the productivity are the significant variables, it

is the productivity which is most important to explain the inter-district income differences in Karnataka. Though the degree of industrialisation was included in the multivariate regressions, its coefficients were not found to be significant in both the periods of study. The selected variables explained most of the variations in per capita income in Karnataka for the years under examination.

Further, an examination of the distributional pattern of net domestic product and workers among the districts of Karnataka clearly indicates the existence of wide differences in productivity in the state for the periods 1960-61 and 1970-71. The analysis of productivity relatives shows that productivity (output/labour) increased at some what higher rates than the state wide productivity in Kodagu, Chikmagalur, Bellary, Mysore, Bangalore, Raichur and Gulbarga districts between 1960-61 and 1970-71. It is also found that there is a convergence of productivity inequality between the years 1960-61 and 1970-71 in the state.

When the pattern of development and employment of labour force in the three sectors was examined with reference to the districts of Karnataka, the findings do not fall along the lines of Colin Clark's Sectoral hypothesis. In fact, agriculture continues to be the most important economic activity from the viewpoint of employment in the

districts of Karnataka. Thus, the three-way classification of labourforce alone is proved to be ineffective in explaining the inter-district income differentials.

The isolation of the sources of inter-district income differentials, in terms of industrial structure, productivity and worker participation ratio, reveals that the industrial structure is ineffective in explaining the inter-district income variations for the years 1960-61 and 1970-71, even when we consider the disaggregation of industries into more than three-way classification. The worker participation rate explains 42 % of the per capita income variations in 1970-71, while, its influence is inconclusive in 1960-61. The shift and share analysis also indicates that productivity explains most of the inter-district income differences in Karnataka for the periods under study. However, the findings show that Mysore and Bidar in 1960-61 and Tumkur and Bidar have, in 1970-71, suffered most due to industrial structure, productivity and worker participation ratio. Further, the findings are indicative of the fact that the district income inequality would have been the least during the sixties and the seventies, if only worker participation ratio and industrial structure, respectively varied from district to district, whereas district income inequality would have been highest during

the same periods, if only productivity varied from district to district, other things remaining at the average level. From the equality point of view, it can be said that productivity is proved to be the most unfavourable in the years 1960-61 and 1970-71 , so far as Karnataka is concerned. It appears, that the growth of different districts might have taken place in such a way that inequality appears to have increased on account of productivity rather than industrial structure and worker participation ratio.

The results, obtained through the standardisation procedure (or shift and share analysis) to examine the factors affecting the inter-district variation in the worker participation rates, suggest that it is the attitude towards work (economic forces) rather than age-sex composition of population (demographic characteristics) that explains the inter-district differences in the worker participation rates in Karnataka for the year 1971. However, worker participation rates lower than the state average in Shimoga, Uttar Kannada, Hassan, Mandya and Bidar are found to be due to the unfavourableness to them, of both the factors i.e., attitude towards work and age-sex composition for the period 1970-71.

The findings further indicate that it is the productivity in the primary sector that explains the variations in overall productivity in Karnataka and hence it explains most

of the regional inequalities in Karnataka. Therefore, the nature of variations in agricultural productivity is studied through product per farm worker and product per hectare of net sown area in the state for the periods 1960-61, 1970-71 and 1975-76.

From the study, it is observed that, although, agricultural productivity has increased over the years 1960-61 and 1975-76, there is a remarkable stability in the rank order of districts with respect to product per farm worker and product per hectare of net sown area over the years under examination. The highest and lowest positions are, in all the periods, those of Kodagu and Bijapur respectively, with the only exception in respect of land productivity in 1975-76. The high ranks are consistently maintained by Shimoga, Uttar Kannada, Chikmagalur and Dakshina-Kannada, while the reverse is true, in totality, in the case of Gulbarga, Raichur, Bidar and Dharwad.

The findings also indicate that there are no conclusive evidences either of convergence or of divergence in the product per farm worker over the period 1960-61 to 1975-76, while the land productivity disparities are, for the period, converging in Karnataka. However, the agricultural disparities are not small in all the periods of study as measured by coefficients of variation. The coefficient of variation

ranges from 79 % in 1960-61 to 76 % in 1975-76 with respect to product per farm worker and 84% in 1960-61 to 69 % in 1975-76 with respect to land productivity.

An examination of the relative importance of factors affecting productivity per farm worker, through fitting Linear Multiple Regressions, reveals that the rural literacy rate and annual rainfall in 1960-61; area under cash crops, tractor density, density of draught animals and rural literacy rate in 1970-71; and area under cash crops, rural literacy rate and concentration ratio of land holdings in 1975-76, are the significant factors to explain the differentials in product per farm worker in Karnataka. However, the selected variables, in the regressions, are unable to provide explanation to the extent of nearly 50 % in 1960-61 and 45 % in 1970-71 and 1975-76 for the inter-district variations in the product per farm worker.

When the product per farm worker was regressed on the selected variables, it was found that cropping intensity, infrastructure, rural literacy rate, annual rainfall, average size of holding and irrigated area in 1960-61; cropping intensity, area under cash crops, tractor density, infrastructure, rainfall and concentration ratio of land holdings in 1970-71; cropping intensity, area under cash crops, infrastructure, fertilizer consumption, rainfall,

concentration ratio of land holdings and irrigated area in 1975-76; are the most significant factors influencing land productivity in Karnataka. The selected variables provide more than 75% explanation in the inter-district variation in the product per hectare of net sown area in all the periods under study.

The findings are indicative of the fact that there is an inverse relationship between the size of land and the output per hectare, the latter falling with the former rising, in Karnataka.

To find out the relative importance and production elasticities of input factors in agriculture, in the state, the Cobb-Douglas type production functions were fitted to the cross-sectional data for the years 1960-61, 1970-71 and 1975-76. The findings are that education of farm workers, rainfall and irrigation in 1960-61; gross cropped area, rainfall, agricutural implements and fertilizer in 1970-71; gross cropped area, rainfall and agricultural implements in 1975-76, have a positive and significant contribution to agricultural production and therefore account for differences in the levels of agricultural development in the state. The selected variables explain the inter-district production differences to the extent of 49 % to 63 % in 1960-61; 58% to 67% in 1970-71; and 62% to 65% in 1975-76. The findings, further, indicate that the contribution of modern inputs, viz., irrigation, fertilizer and HYV crops, to agricultural production is insignificant in Karnataka.