IMPACT OF POPULATION GROWTH ON AGRICULTURAL LAND UTILIZATION IN KARNATAKA, INDIA

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ABSTRACT

Background

The impact of population growth on agriculture and natural resource management has been debated at least from the time of Malthus. Although the dismal predictions of Malthus regarding the inability of agricultural production to keep pace with population growth have not come to pass in the industrialized nations, agricultural production per capita has fallen and poverty has increased in many developing countries including India in recent decades (John Pender, 1999). In addition, there are serious and growing concerns about the impacts of rapid population growth on environment and natural resources, including forests, land, water, biodiversity, and other resources (World Commission on Environment and Development 1987; Ehrlich and Ehrlich 1990). Consequently, the effect of population changes on agricultural development has attracted more attention recently, partly because of aspirations, plans and programmes for expanding national production and the increasingly pervasive pattern of rapid decline in death rates. It has been a point of debate for long time as to whether the relationship is positive or a negative; whether the population growth deters or promotes development or vice-versa and whether two can ultimately settle down at a point of equilibrium.

This paper reviews hypotheses about the impacts of rural population growth on agricultural change in terms of land utilization and cropping and irrigation intensity and the implications for agricultural productivity and poverty. The impacts of population pressure, particularly on natural resource conditions, may be very different in different contexts, depending on the nature of local markets, institutions, and other factors. It is also believed that this will provide a strong empirical basic for formulating effective

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district level policies in reducing imbalances, which has become a major concern in the state recently.

Methodology

The study was conducted in Karnataka state, which offers an appropriate case study, for it has been under the influence of rapid demographic and agricultural changes for the last several decades. The study is primarily based on secondary data sources published by the government of Karnataka and other sources. The data on population and its component viz., size, structure, distribution and other characteristics were obtained mainly from following sources: (1) Various census reports from 1961 to 2001 for Karnataka; (2) Human Development in Karnataka, 1999, Planning Department, Government of Karnataka; and (3) Selected Indicators of Population and Health-2001 and others. The district-wise time series data for the period from 1960-61 to 2000-01 pertaining to land utilization, area, production, productivity of principal crops and the pattern of irrigation, area under high yielding varieties were obtained from the Directorate of Economics and Statistics, Government of Karnataka, Bangalore as well as from Fertilizer statistics.

District-wise analysis has been made by computing triennium average, ratios, percentages, and cross tables, besides correlation and regression analysis.

Findings

The analysis of the demographic data revealed that the population is growing rapidly with fluctuating growth rates in different decades. The population in the state had quadrupled during the last century. Though it has been noticed that there are some indications of declining growth rate, the current population of the state is still growing every year by 2.01 percent per year. In view of the limited natural resources in the state, further increase will have serious consequences on agricultural development.

Regarding agricultural change, there is a large variation in the general land utilization pattern and availability of cultivated land in different districts of Karnataka. During the study period, a negative trend was noticed with respect to barren and

uncultivable land, cultivable waste land, permanent pastures and grazing lands, miscellaneous trees not included in net area sown, fallow land other than current fallow in the state. While area under forest, land put to non-agricultural use, net area sown and area sown more than once shown an increasing trend during the same period.

Bivariate analysis suggests that the growth of al cropped area lagged behind the population growth in all the districts of the state during the overall study period. All the districts except Bellary, Dakshina Kannada Kodagu, Uttar Kannad and Bidar showed a higher rate of increase in foodgrain crop productivity than that of population growth. The considerable changes in cropping pattern were also observed in the districts. The data did not however support the Bosurupian hypothesis that the increase in labour force increases area under foodgrain crop. In fact, reverse of which is evidenced in Karnataka, even that was not consistent in some districts over the different decades. In addition, many districts with low population growth also had higher level of production and productivity of foodgrains and non-foodgrains. There are many factors responsible for an increase in productivity such as rainfall and other agro-climatic conditions. Therefore there is a need to control population by reducing the birth rate through strong family planning program and integration of population, agriculture and various developmental programs. Transformation of this labour force from agriculture sector to other non-agriculture sector is needed may be encouraged. Cottage and small-scale industries are the possible sectors, which can absorb the growing labour force.