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IMPACT OF URBANIZATION ON GROWTH OF AGRICULTURE IN KARNATAKA

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ABSTRACT

Towns and cities play a greater role in regional development of a state or country. A settlement with more than 75% of pupulation other than agricultural activites can be termed as town. Karnataka has good number of towns and cities but lack in million cities. Bangalore is the only million city, it is located in the most southern part of Karnataka. Urban influence is of varying nature, it may have its influence of agriculture, on industry, on administration and also on certain services like medical, cultural including educational, recretional, etc. The secondary data are collected from various government organizations the trend in which the towns and cities of Karnataka expanded and the urban agglomeration in the 2011 is given emphasis in this paper

Keywords: *urbanization,*agriculture, growth

INTRODUCTION

Urbanization is a process by which towns and cities grow continuously in an area or region. Karnataka state has been experienced a good trend in urbanization during 1961-2011. The research paper address the trend of urbanization that has happened since 1961. Geographical information system has been used here to understand the trend of urbanization in the Karnataka state. The result reveals that the urbanization process is high in south Karnataka, low in North Karnataka and very low in western areas of karnataka. Statistical techniques have been used have to come out with meaningful results. In India urban-rural population in 2011 census was 31.16 percent and 68.84 percent respectively. At the national level slowing down of population growth was due to sharp decline in the growth rate in rural areas, while the growth rate of urban areas remains almost same. The total population of the state, 61.1 million is distributed among the rural and urban areas of the state almost in the ratio of 2:1. In other words 61.43 percent of the population is living in rural areas whereas, the remaining 38.57 percent lives in the urban areas. Thus, 37.5 million population is in rural areas whereas, the urban population is about 23.6 million. The percentage of urban population of the state 38.57 percent is much higher than the percentage of urban population of India which is about 31.16 percent of the total population of India.

Agriculture

Agriculture encompasses crop and livestock production, aquaculture, and forestry for food and non-food products. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. While humans started gathering grains at least 105,000 years ago, nascent farmers only began planting them around 11,500 years ago. Sheep, goats, pigs, and cattle were domesticated around 10,000 years ago. Plants were independently cultivated in at least 11 regions of the world. In the 20th century, industrial agriculture based on large-scale monocultures came to dominate agricultural output.

As of 2013, small farms produce about one-third of the world's food, but large farms are prevalent.The largest 1% of farms in the world are greater than 50 hectares (120 acres) and operate more than 70% of the world's farmland.Nearly 40% of agricultural land is found on farms larger than 1,000 hectares (2,500 acres).However, five of every six farms in the world consist of fewer than 2 hectares (4.9 acres), and take up only around 12% of all agricultural land.Farms and farming greatly influence rural economics and greatly shape rural society, effecting both the direct agricultural workforce and broader businesses that support the farms and farming populations.

Importance of agriculture

1. Supply or provide us food and fiber

2. Contributes about 25 % in GDP

3. Agriculture provides raw materials to industries.

4. Agriculture provides 80 % in foreign exchange.

5. 45 % labor force in Pakistan are engaged in agriculture

6. It is backbone of our country.

Types of Agriculture

Agro-ecology

Broadly stated, it is the study of the role of agriculture in the world. It is the study of the relation of agricultural crops and environment. Agro-ecology provides an interdisciplinary framework with which to study the activity of agriculture. In this framework, agriculture does not exist as an isolated entity, but as part of an ecology of contexts. Agro-ecology draws upon basic ecological principles for its conceptual framework.

Sustainable Agriculture

Sustainable Agriculture refers to the ability of a farm to produce food indefinitely, without causing severe or irreversible damage to ecosystem health. Two key issues are biophysical (the long-term effects of various practices on soil properties and processes essential for crop productivity) and socio-economic (the long-

term ability of farmers to obtain inputs and manage resources such as labor). SA integrates three main goals: environmental stewardship, farm profitability, and prosperous farming communities.

Urban agriculture/ Peri-urban agriculture

Urban agriculture is the practice of cultivating, processing and distributing food in, or around (peri-urban), a village, town or city . Urban farming is generally practiced for income-earning or food-producing activities though in some communities the main impetus is recreation and relaxation. Urban agriculture contributes to food security and food safety in two ways: first, it increases the amount of food available to people living in cities, and, second, it allows fresh vegetables and fruits and meat products to be made available to urban consumers.

Organic Agriculture

Organic agriculture is a production system that sustains the health of soils, ecosystems and people4 . It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.

Conservation Agriculture

Conservation Agriculture is a concept for resource-saving agricultural crop production that strives to achieve acceptable profits together with high and sustained production levels while concurrently conserving the environment" (FAO 2008) . The first key principle in CA is practicing minimum mechanical soil disturbance which is essential to maintaining minerals within the soil, stopping erosion, and preventing water loss from occurring within the soil. The second key principle in CA is much like the first principle in dealing with protecting the soil. The principle of managing the top soil to create a permanent organic soil cover can allow for growth of organisms within the soil structure. This growth will break down the mulch that is left on the soil surface. The breaking down of this mulch will produce a high organic matter level which will act as a fertilizer for the soil surface. The third and final principle that is exercised by the FAO is the practice of crop rotation with more than two crop species. This process will not allow pests such as insects and weeds to be set into a rotation with specific crops. Rotational crops will act as a natural insecticide and herbicide against specific crops.

Precision agriculture

Precision Farming is a new technology that allows farmers to look at their fields more site specifically than before and apply inputs in a manner more specific than a blanket application. This technology saves money while holding or enhancing yield output of the field. Environmental pollution is also be reduced using this method6 . Precision agriculture uses ICT to cover the three aspects of production namely for data collection of information input through options as Global Positioning System (GPS) satellite data, grid soil sampling, yield monitoring, remote sensing, etc; for data analysis or processing through Geographic Information

System (GIS) and decision technologies as process models, artificial intelligence systems, and expert systems; and for application of information by farmers.

OBJECTIVES

1. to assess the growth of the urban centres,
2. to analyse the urbanization trends, during the study period.

METHOD

Study Area

Karnataka is the seventh largest urbanized state in India with 38.67% of urban population as of 2011. With one out of every seven people in Karnataka live in Bangalore, it addresses pertinent questions as to how much of this growth is contributed by various regional pockets. This paper aims to identify regional imbalances in urban growth in Karnataka 2011 at the regional, divisional and district level and to examine the distribution of urban population across cities during the same period. It uses secondary data from the Census of India to compute measures of percent urban population, urban rural growth differential (URGD), Results show that Karnataka exhibits a fluctuating trend of urbanization with a high regional variation and a high urban primacy.

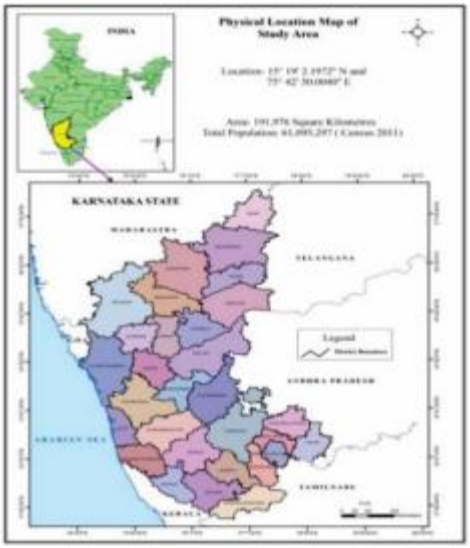

Fig. 1. Study area

Source of Data

The research study applied quantitative and statistical technique analysis for the data collected relating to urban trends and regional analysis in Karnataka state. In this research, data has been be collected from both primary and secondary level. The secondary data has been collected from various government and non-government departments, such as Town Planning., Census Department. Relevant data has also been generated from newspapers, weekly and various websites. Data has been extracted from Census Data 2011,

Urban Development Policy of Karnataka - 2009, Karnataka Economic Survey 2012-20, Urban Development Annual Report and National Remote Sensing Centre, ISRO.

ANALYSIS

Urbanization and economic growth are strongly associated, and hence, urban areas, in general, and cities, in particular, have been identified as the 'Engines of Economic Growth'. and 'Agents of Change' . Karnataka, one of the frontline states of India, ranks 6th by per ca itap net state domestic product, per cent share of urban population, life expectancy, infant mortality and maternal mortality rates, 7th by literacy and 9th by population size. Karnataka accounts for almost 63 per cent of national urban population and 5.4 per cent of the total number of towns in the country. By share of urban population, Karnataka .(33.98 per cent) stood much above the national average (27.78 per cent) in 2001. With its conducive location characteristics for industrial and commercial development, the two engines of economic growth and urbanization, Karnataka's urbanization has been consistently progressive with gradual increase in urban population from 12.59 per cent to 33.98 per cent during 1901 and 2001. In addition, during 1901-2001. the State's, favorable climate and primitive policies of the State Government attracted the people within the country and outside alike leading to higher growth of urban population and t he urban areas (cities).

Hence Karnataka with its urban population at 34 per cent of total population is at present ranked 5th most urbanized among the Indian states The main reason for such high urban population growth peak during 1941-51 in Karnataka was the state's initiative towards industrialization. This process has obviously led to rapid increase in city and town sizes in the state. Similarly, to begin with, the distribution of towns in Karnataka by size class reveals a well balanced typical pyramidal shape with strong base, with highest concentration of class VI (less than 5,006 population) and least share of class 1 toms 8 (more than 100,000 population) at the top. Subsequent urban development policies which encouraged higher size towns have led to redistribution in concentration of towns by eroding the pyramidal base. A similar growth pattern is evident at the national level as well. While the concentration of urban population by size class is concerned, the issue has been more serious as the population distribution has assumed a perfect inverted pyramid with highest and least concentration of population in class I and VI towns respectively in Karnataka as well at the national level during 1901-2001. This implies that both state and national urban development policies have consistently reinforced each other to encourage highest concentration of population in class I cities (Karnataka: 67 per cent; India: 70 per cent).thus highlighting the' top heavy' character of Indian urbanization. The UAs/Towns which have at least 1,00,000 persons as population are categorized as Class I UA/Town. At the Census 2011, there are 468 such UAs/Towns. The corresponding number in Census 2001 was 394.

Around 70% of the total urban population lives in these Class I UAs/Towns. UAs/Towns which have a population of one million (10 Lakh) or above each are known as Million Plus UAs/Cities. Out of 468 UAs/Towns belonging to Class I category, 53UAs/Towns are Million Plus UAs/Cities in the country. 160.7 million persons (or 42.6% of the urban population) live in these Million Plus UAs/Cities as per Census 2011. UAs/Towns which have a population of four million (40 Lakh) or above each are known as Metro Cities. 74th Constitutional Amendment Act, 1992 has inserted a definition of "Metropolitan area" as an area having a population of ten lakhs or more, comprised in one or more districts and consisting of two or more Municipalities or Panchayats or other contiguous areas, specified by the Governor by public notification to

be a Metropolitan area; UAs with more than 10 million (100 lakh or 1 crore) persons are known as Mega Cities. Among the Million Plus UAs/Cities, there are three very large UAs withmore than 10 million persons in the country, known as Mega Cities. These areGreater Mumbai UA (18.4 million), Delhi UA (16.3 million) and Kolkata UA (14.1million).

RESULTS AND DISCUSSION

The total population of the state, 61.1 million is distributed among the rural and urban areas of the state almost in the ratio of 2:1. In other words 61.43 percent of the population is living in rural areas whereas, the remaining 38.57 percent lives in the urban areas. Thus, 37.5 million population is in rural areas whereas, the urban population is about 23.6 million.The percentage of urban population of the state 38.57 percent is much higher than the percentage of urban population of India which is about 31.16 percent of the total population of India. Patterns of Urbanization: Karnataka accounts for almost 6.25 percent of national urban population. It is one of the seventh highly urbanized states of India. There are two peaks of urban population growth in Karnataka one in 1951 and the other in 1981. The main reasons for high urban population growth during 1941-1951 is the strong initiations of industrialization. This is the period in which both government of India and government of Karnataka have encouraged industrialization. Large industrial units in the public sector like Hindustan Machine Tolls, Indian Telephone Industries, Bharat Electronics Limited, Hindustan Aeronautics Limited, and Government Electric Factory, Radio Manufacturing Company were established in the state. The second peak of urbanization between 1971-81 is also attributed to industrialization and commercialization which has continued even in the Census of later period.

The state has 23.6 million urban population which constitutes about 38.57 percent of the total population of 61.1 million 2011. During the decade of 2001-11 the absolute increase of population has been more in urban areas than in rural areas. For the first time since independence. The rapid urbanization is attributed to concentration of economic activity and urban focused employment opportunities. The decadal growth of urban population is highest in Bengaluru district, which has recorded 51.39 percent of growth rate followed by Udupi with 41.90 percent. Analysis of the patterns of urbanization reveals that urbanization process is highly concentrated at Bengaluru which is the largest urban agglomeration of the state with 8.42 million population. It is the primate city of the state. It alone accounts for nearly 36 percent of the total urban Population of the state. At the same time the growth rate of Bengaluru is also highest with 51.39 percent. The only other district which has high decadal of growth rate is Udupi. There are 11 corporations in the state.These are Bengaluru, Mysore, Mangaluru, Hubballi-Dharawada, Davanagere, Ballary, Kalburgi, Belagavi, Tumkur, Shivamogga and Vijayapura.

Table 2. Urban Trends in Karnataka

Year	Karnataka's total population (lakhs)	% of Urban population in Karnataka	% of Urban population in India

1951	194	22.95	17.29
1961	236	22.33	17.96
1971	293	24.31	19.91
1981	371	28.29	23.33
1991	448	30.91	25.71
2001	527	33.98	27.78
2011	611	38.67	31.15

Source: Census of India. 2011

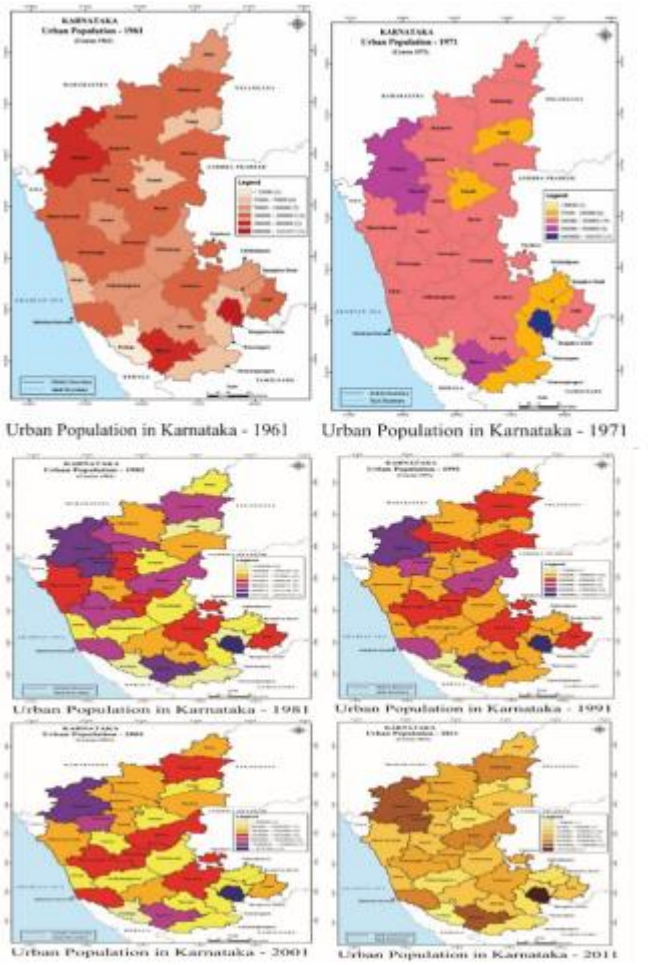

Fig. 2. Urban Population in Karnataka

CONCLUSION

The concentration is increasing in Class I, Class II and Class V towns, while all other classes record a reduction in share of population. This is reflected in the Gini Coefficient Index which was 0.68 in 1991 and declined slightly to 0.66 in 2001 but further increased to 0.72 in 2011. According to the study ofurbanisation in 10 UAs (Urban Agglomerations)in Karnataka. As of 2011, Bangalore isthe only metropolitan city in Karnataka. The other populous urban regions being Mysore UA, followed by Hubli-Dharwad, Mangalore UA, and Belgaum UA. There is no change in the position of the first 8 UAs from 1991 to 2011, while there are slight changes in the rest of the cities. In 1991-2001, three UA/Towns (Bangalore, Gulbarga, Shimoga) had more than 3% exponential growth rate. In 2001-2011 only Bangalore UA had a much higher rate (4.02%). In 2001-2011, except for Bangalore,Mysore and Bellary most of the towns especially Shimoga (-1.89%) experienced a slower pace of urbanisation when compared to the previous decade. Disparity exists in the distribution of urban population across cities as well. The increasing polarised growth of Bangalore over the years, is reflected in the four-city primacy index increased from 2.39 in 1991, 3.33 in 2011 (i.e. in 2011 the population of Bangalore UA was more than three times that of the combined population of the next three large cities). Similar is the case with the eleven-city primacy index, which increased from 2.33 in 1991 to 3.09 in 2011.

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