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‘Impact of Increasing Population on Economic Development in Ahilyanagar District, Maharashtra’.

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ABSTRACT:

Agriculture forms an integral part of the Indian economy. More than half of the population of the country is engaged directly or indirectly in this economic activity. Only with the development of irrigation and technological improvements in agriculture, will the nation be able to benefit the overall development. With proper and continuous supply of food, which is possible with the help of good agricultural productivity, will the nation be able to enrich its other sectors and economic activities. Ahilyanagar district is the biggest district in Maharashtra. The increasing population in Ahilyanagar district has had multifaceted impacts on its economic development. According to the 1991 census Ahilyanagar district had a population of 33, 72,935, 2001 census 40, 40,642 (4.17%) and 2011 Census of 45, 43,159 (4.04%). The district experienced a population growth rate of 19.80% from 1991 to 2001 and 12.43% from 2001 to 2011. Density of population 1991 is 205 per sq. km., 2001 is 237 and 2011 is 266 inhabitants per sq. Km (17,048 Sq.Km areas). Average literacy rate of Ahilyanagar district in 2011 were 79.05% (Male-86.82 % and Female-70.89%) compared to 2001. For 2001 census, same figures stood at 85.70 and 64.35 in the study area. With regards to Sex ratio 939 per 1000 male compared to 2001 census figure of 940. Notably, urban areas saw a significant increase, with urban population growth rates surpassing those of rural areas in several decades. This urbanization trend indicates a migration from rural to urban centres, likely in search of better employment and living conditions. In the study area partially modern technology, increased other infrastructural facilities and occupational structure, micro irrigation systems, available for nearby village inputs, electricity, irrigation, dairy centres and processing units, nearby sugar factory, good network of transports and markets, good communication facilities, advisory centres etc are available in the study area. Therefore, recently economic development is positively increasing day by day in the study area. This shows the great impact on the socio-economic conditions of farmers as well as the other sectors in this area. It is observed from these areas that there is a greater variation in the changes regarding to land. This is mainly because of the agricultural land is being converted into residential and other uses for the growth and development of the specific area of the A. Nagar district.

General Information in the study Area:

Geographically Ahilyanagar district is the largest and one of the oldest districts of the Western Maharashtra. It is commonly called as ‘The Land of Saints’. Ahilyanagar district is famous for various geographical, historical, religious and cultural heritages. Famous for Shirdi (Sai Baba Temple), Shani Shingnapur (Lord Shani devas Temple), Ahilyanagar Fort, Nevasa (associated with Saint Dnyaneshwar), Meherabad (Meher Baba's Samadhi), Rich cultural and religious heritage with annual fairs and festivals. The location of this district is a somewhat central position in the state of Maharashtra. At present it is divided into 14 blocks or tehsil (including Akole, Sangamner, Kopargaon, Rahata, Shrirampur, Nevasa, Shevgaon, Pathardi, Ahilyanagar, Rahuri, Parner, Shrigonda, Karjat and Jamkhed) and 4 Administrative divisions (Ahilyanagar, Karjat, Shrirampur and Sangamner) with a total of 1585 villages. Bounded by Nashik (north), Chh. Sambhajinagar (Formerly known as Aurangabad) and Beed (east), Solapur (south), Pune and Thane (west). Covers an area of approximately 17,048 sq. Km. Lies in the rain shadow region of the Western Ghats. Comprise plains, hills and plateau regions. Godavari, Bhima, Sina and Mula-Mutha rivers flow through the district.⁽¹⁾

The economic condition of the population in the study area is mainly dependent on agriculture. Industrialization is increasing day by day in the district. For example, sugar factories based on sugarcane, dairy processing industries based on dairy, agricultural processing units based on agricultural products, fruit processing industries, etc. Also, industrial estates have been developed near the city (e.g. Supa, Ahilyanagar, Sangamner, Shrirampur, Kopargaon, etc.), due to which the problem of livelihood of most of the people is seen to be solved. Their economic condition is seen to have improved. The problem of unemployment is seen to have almost reduced. On the contrary, the drought-affected areas of the study area or some regions in the

taluka or agriculture are not seen to have developed much. Since a network of educational institutions has been created in the villages, educational opportunities have been made available to students in rural areas as well. For example, Mahatma Phule Agricultural University (MPKV) Rahuri, Pravara Abhimat University (Deemed Uni.) Loni, Engineering and Medical Colleges, many degree diploma colleges and various primaries to PG level institutes, IT and Technical Training Centres etc. Due to this, the quality of education has increased considerably.

Population in the study Area (Tehsilwise):

Sr. No.	Name of Tahsil	Population (in %)			Increase / Decreased Population (in %)	
		1991	2001	2011	1991-2001	2001-2011
1	Akole	6.59	6.6	6.43	0.01	-0.17
2	Sangamner	10.52	10.92	10.74	0.40	-0.18
3	Kopargaon	10	6.86	6.66	-3.14	-0.20
4	Rahata	NA	7.13	7.05	NA	-0.08
5	Shrirampur	10.09	6.35	6.33	-3.74	-0.02
6	Nevasa	8.1	8.09	7.88	-0.01	-0.21
7	Shevgaon	5.06	5.04	5.41	-0.02	0.37
8	Pathardi	5.51	5.32	5.68	-0.19	0.36
9	Nagar	14.32	15.01	15.06	0.69	0.05
10	Rahuri	7.49	7.3	7.11	-0.19	-0.19
11	Parner	6.35	6.1	6.03	-0.25	-0.07
12	Shrigonda	6.99	6.86	6.95	-0.13	0.09
13	Karjat	5.47	5.09	5.19	-0.38	0.10
14	Jamkhed	3.54	3.32	3.49	-0.22	0.17

Table No. 1

(Note: Data for 2021 is not available due to the postponement of the census.)

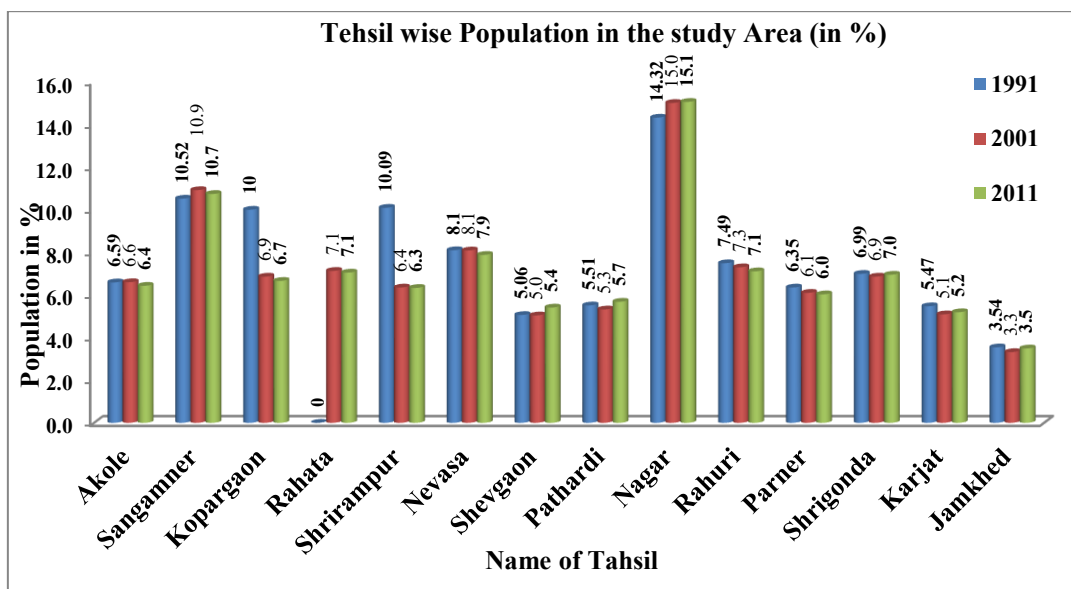


Fig. No.1

The above Table and Fig. no 1 review the population of all 14 talukas of Ahilyanagar district from 1991 to 2011. Since the government population data for 2021 is not available, only the year 2011 has been assumed. It is seen that during the 10 years period from 1991 to 2001, the population has increased in only 03 talukas i. e. Akole (0.01), Sangamner (0.40) and Ahilyanagar (0.69). There is a decrease in the population in the remaining 10 talukas. Since the formation of Rahat taluka was after 2001, the data is not available, hence it appears NA. In the next 10 years, i.e. from 2001 to 2011, the population of 06 talukas, namely Shevgaon (0.37), Pathardi (0.36), Ahilyanagar (0.05), Shrigonda (0.09), Karjat 0.10 and Jamkhed (0.17) has increased. The population of the remaining 8 talukas has decreased. That's the population of both males and females has increased by 6, 67,707 in the 10 years from 1991 to 2001 and by 5, 02,517 in the 10 years from 2001 to 2011.

Economic Overview in the study Area:

Ahilyanagar district's economic structure is diverse, with strong sectors in agriculture, industry and services. Agriculture remains the backbone of the district's economy.⁽¹⁾

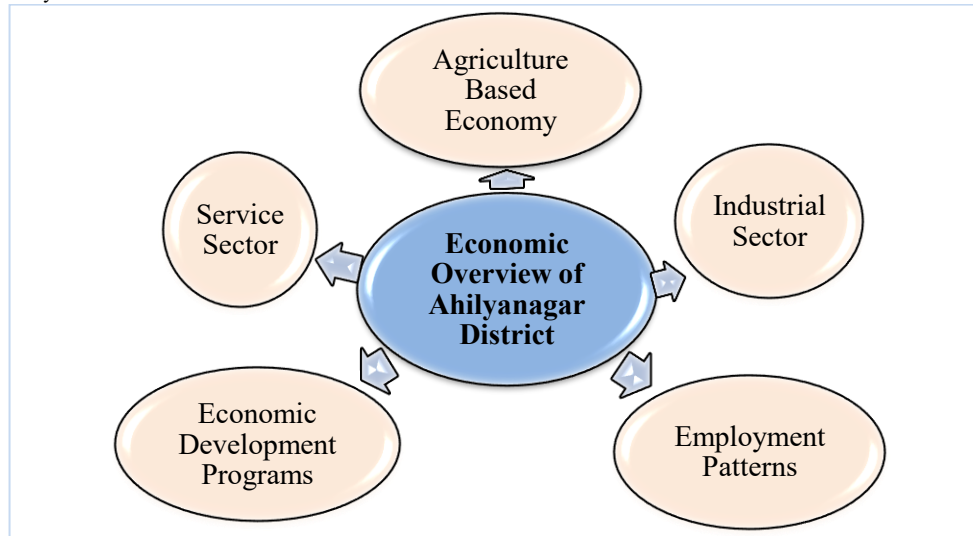


Fig. No.2

Agriculture-Based Economy:

In the study area is a classic example of an agro-based economy in Maharashtra. A large portion of the population is engaged in agriculture and allied activities. The district's rural economy is closely linked to seasonal crop cycles and agro-processing industries. The district's economy is heavily dependent on sugarcane especially in irrigated areas, which are the main cash crop and a driver of local economic progress. Other significant crops include Kharif (monsoon) i.e Soybean, Bajra (pearl millet), Jowar (sorghum), Soybean, Cotton, groundnut etc and Rabi (winter) i.e Wheat, Gram (Harbhara), Onion etc. Fruit cultivation is also notable, especially grapes, oranges and pomegranates. Farming is primarily supported by well water and irrigation from major dams like Gangapur, Bhandardara, Mula, Ghod and Kukadi, which have expanded the area under cultivation. Many areas are drought-prone (like Shevgaon, Nevasa, Pathardi). Heavy dependence on monsoon rains, limited irrigation (though canal systems like Mula and Pravara have improved this somewhat). Despite its agricultural strengths, the district faces challenges such as frequent droughts and non-profitable agriculture in some areas due to water scarcity. The district is a leader in the co-operative movement, with India's first co-operative sugar factory established in Pravaranagar in 1950. As of 2015-16, there were 5,295 co-operative societies and the district hosts 19 sugar factories, producing over half of Maharashtra's sugar.^(2,3) Sugarcane and fruit cultivation as economic pillars, supported by a strong co-operative sector and extensive irrigation infrastructure.

Industrial Sector:

The industrial sector in Ahilyanagar district is characterized by a strong presence of sugar factories, distilleries, spinning mills, paper mills, engineering, auto components, agro-based industries (oil mills, dal mills, sugar mills), food processing and a robust dairy industry largely organized under the co-operative movement. The district is recognized as a leader in Maharashtra for its co-operative model, especially in the sugar and dairy sectors.

- A. **Sugar and Dairy Products:** These are the flagship industries under the "One District One Product" (ODOP) initiative, reflecting their economic importance and employment generation in the region. Over 10 co-operative and private sugar factories situated in study area.
- B. **Manufacturing and Service Sector:** The district's economy is primarily driven by manufacturing, with a relatively lower dependence on agriculture.
- C. **Industrial Estates:** There are several co-operative industrial estates and industrial zones, such as Maliwada Industrial Estate and Bolegaon MIDC (Maharashtra Industrial Development Corporation) estates. Ahilyanagar, Supa, Newasa, Shrirampur and Sangamner are available MIDC sector, hosting a variety of manufacturing and service companies.
- D. **Other Industries:** Besides sugar and dairy, the district has distilleries, spinning mills and paper mills, as well as supporting industries like construction, engineering and food processing.
- E. **Skilled Workforce:** The presence of institutions like the Government Industrial Training Institute (ITI) in Ahilyanagar supports a skilled workforce in trades such as machinist, electrician, fitter, welder and chemical plant maintenance.

The district's strategic location and good road connectivity make it a gateway for trade between Marathwada, Vidarbha and Mumbai, further enhancing its industrial significance.

Employment Patterns:

High rural employment in agriculture and unorganized sectors. Increasing urban migration for jobs. Employment patterns in the study area show a diverse mix of agriculture, industry, and services, with notable trends in recent years. Agriculture remains a significant source of employment, particularly in rural areas but its share is gradually decreasing as the district urbanizes and diversifies economically. Industrial employment is driven by micro, small and medium enterprises (MSMEs) as well as large cooperative sugar factories, dairies and manufacturing units. Factory-based employment and skilled technical jobs are increasing, supported by local training institutes. Service sector jobs are expanding, especially in education, healthcare, finance, retail and government services. Recruitment for roles such as Anganwadi helpers, medical officers and administrative staff is ongoing. Government employment schemes like MGNREGA (rural employment guarantee) provide a safety net for rural households, offering wage employment and supporting livelihoods during lean agricultural periods. Job seeker data from employment exchanges indicate a steady demand for both skilled and unskilled work, reflecting a young and growing workforce. Skill development programs and entrepreneurship initiatives are active, aiming to enhance employability and promote self-employment. Overall, the district is experiencing a gradual shift from traditional agriculture to more diversified employment in industry and services, with government schemes and skill development playing crucial roles in this transition.

Economic Development Programs:

The main economic development program in the study area is the One District One Product (ODOP) initiative, led by the Government of India's Department for Promotion of Industry and Internal Trade. This program aims to Firstly, Promote local entrepreneurship and empower rural areas by leveraging traditional skills and industries. Secondly, create sustainable livelihood opportunities and foster economic growth at the district level and lastly, Select brand and promote one key product from the district to enable holistic socio-economic growth.

The ODOP products are Sugar and Dairy Products, reflecting the district's strong co-operative movement and industrial base in sugar factories, distilleries, spinning mills, paper mills and dairy co-operatives. The ODOP action plan focuses on solving supply chain challenges, improving market access and providing dedicated support to producers. The district benefits from broader infrastructure and connectivity initiatives such as the Connecting Economic Clusters for Inclusive Growth in Maharashtra project, which improves road networks, connects rural communities to markets and industrial zones and supports inclusive growth for disadvantaged groups. These also has a vibrant MSME sector, with numerous micro, small and medium enterprises registered and supported through state and central government programs, contributing to employment and local economic diversification. Watershed development programs to improve water availability. Skill development centres to improve youth employability. In the study area has a mixed economy with dominance in agriculture but it is gradually shifting toward industrialization and services. There is huge potential in agro-processing, dairy, solar energy and tourism. Development challenges include water scarcity, under employment and uneven industrial growth.

Service Sector:

The various service sectors in the study area plays a significant role in the local economy alongside manufacturing. i.e education and training, financial services, business services, social infrastructure, transport and logistics and other services. These all service sectors are a major driver of economic activity in the study area.⁽⁴⁾

- A. Education and Training:** The district hosts computer training institutes and various educational services, supporting skill development and employment.
- B. Financial Services:** There is a robust banking network with over 689 commercial bank branches, 66 private sector banks and numerous co-operative credit societies. Financial inclusion initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) and MUDRA have expanded access to credit, insurance and pension services.
- C. Business Services:** Services such as Xerox, fax and other business support centres are prevalent.
- D. Social Infrastructure:** Housing, healthcare and social security schemes have a strong presence, with government-supported housing projects and widespread coverage under schemes like PMJJBY, PMSBY and APY.
- E. Transport and Logistics:** The district's strategic location and connectivity support a range of logistics and transportation services, facilitating trade and commerce.
- F. Other Services:** The district also features IT services, consultancy and a growing market for retail and hospitality, especially in urban and semi-urban areas.

Overview of Economic development in the study Area (1991, 2001 & 2011):

The population increase in the study area presents both opportunities and challenges for economic development. While it offers a larger workforce and potential market expansion, it also necessitates strategic planning to address infrastructure needs, employment generation and sustainable resource management. Focusing on balanced sector development, particularly enhancing the service sector and improving agricultural resilience will be crucial in leveraging population growth for positive economic outcomes. When reviewing the population censuses every 10 years, the following important points are mainly found. Although the population of district is increasing, the regional and economic development of the district is seen in comparison. For this, the years 1991, 2001, 2011 and 2021 have been reviewed.

Sr. No.	Year	Population in Million (Approx.)	Dominant Economic Sector	Development in Economic Highlights
1	1991	3.37	Agriculture	Co-operative Sugar Industry, Rain-fed Farming, Low Industrializations
2	2001	4.04	Agro-based Mix Industries	SHGs growth, Expansion of Irrigation, MIDC Small Industries Development, Rural Electrification
3	2011	4.54	Mixed Economy (Agri-Industry-Services)	Boost from Shirdi Tourism, Education, SME Growth, Road and Telecom Infrastructure
4	2021	~5.1 (estimated)	Diversified (Industry, Services, Digital)	Rise in Digital Economy, Renewable (Solar) Energy, Rural Enterprises, Agro-Processing, e-commerce, COVID recovery measures

Table No.: 2 (Note: 2021 Population is an estimate based on past growth rates)

Above Table no.2 shows the status of population and economic development of Ahilyanagar district. According to the available data, the population growth rate during the 10 years period from 1991 to 2001 was 0.67 million, from 2001 to 2011 it was 0.56 million and from 2011 to 2021 it is estimated that the population has increased by 0.56 million. The sources of economic development are not traditional but technological development e.g. Industry, Irrigation, Rural Electricity, Tourism Sector, Education, Transport Connectivity, Digital Economy, E-Commerce etc.^(3,5)

I. Census Year 1991:

The total population of Ahilyanagar district in 1991 was 3.37 million. At that time, the economic situation was mainly dependent on agriculture. The population lived in rural areas to a large extent. Since agriculture was dependent on rain, sugarcane, cotton, millet, various pulses, etc. were the main crops. Irrigation seems to be limited. Cooperative and private industrialization is found to a lesser extent. There was slow development in services and infrastructure and development was also limited in electrification, roads, employment, and industrialization.

II. Census Year 2001:

In the 2001s, the population was 4.04 million. Economic growth was moderate in agriculture-based industries. Growth in services and infrastructure was slow. Improvements were being made in small-scale industries, medium-scale industries, large-scale industries as well as in pilgrimage sites, tourism, urbanization, self-help group movements, etc. Development was also seen as such. Mula, Kukdi dams not only increased the irrigation area, but also helped increase agricultural productivity due to the expansion of irrigation projects.

III. Census Year 2011:

The total population increased by 0.50 million in the decade of 2011 to 4.54 million. There has been a significant increase in technology, services and infrastructure, religious, cultural, educational and irrigation capacity. The position of small and medium enterprises has been strengthened. Education, health and banking service facilities have been expanded and developed to a large extent. Religious tourist destinations like Shirdi and Shani Shinganapur have become economic centres. There has been a huge increase in hotels, transport, trade and other businesses there. However, the migration of youth to MIDCs and other service businesses for employment has continued. Due to climate change and water shortage in rain-fed agriculture, there has been no significant change in the agricultural sector. However, there has been a definite increase in entrepreneurs. Regional and economic development has been strongly seen in this decade due to the expansion of transport service facilities and communication.

IV. Census Year 2021:

Although official census data is not available due to delay, it is estimated that the population in 2021 may be around 5.0 to 5.2 million. The remarkable changes in this decade are the development or transformation in economic, social and other sectors. For example, solar power projects, modern communication systems, dairy revolution in the dairy industry, expansion of fisheries, poultry farming, agro-processing units. Strong support for rural entrepreneurship, promotion of trade, increased connectivity has led to the penetration of e-commerce, mobile banking, etc. in remote areas and regional development. Due to digital literacy and economy, we are experiencing a transformation in healthcare, investment services, infrastructure services, etc.

Impact of Population:

Population growth is a factor that has both positive and negative effects on the economic development of any region. This effect is especially visible in developing regions. Since the district has all three types of landforms, namely mountains, plateaus and plains, the development of all 14 tehsil is not uniform. The development of agriculture and other components is not uniform. Therefore, due to the increasing population, Ahilyanagar district of Maharashtra is facing both opportunities and challenges, which is briefly reviewed as follows.

Positive effects of increasing population:

A. Large Workforce:

There is daily employment availability for industries in the MIDC area, agriculture sector and agriculture-related businesses in the district. Due to the increasing population, a large number of workers are available for the desired business. Due to this, outside industries have been attracted to the district. Due to adaptation to employment generation, local production has also started increasing. This is a positive thing in terms of industry and production.

B. Large Market:

Local entrepreneurship and small businesses have started getting encouragement due to the increase in demand for goods and services. The demand for work is also increasing day by day for uneducated labours.

C. Innovation Capacity:

Educated youth and growing population can effectively and efficiently bring in their new ideas, energy and innovations to skilled workers. Many such examples can be seen in the district in the agricultural business. Many youth have created new equipment and agricultural implements according to their intellectual capacity, art and interest and these are being used not only in the district but also in the markets outside the district.

Negative effects of increasing population:**a. Pressure on resources:**

Regional development is a good thing, but it is also necessary to study how good it is to develop the region by using more resources due to more population. Population growth puts pressure on water, electricity, land and other natural resources. Also, due to overuse of these resources, they are deteriorating. Environmental problems (such as deforestation, water scarcity) have started arising. Forest resources like before, extensive agricultural belts are not seen at present.

b. Unemployment:

If the available population does not get employment according to their efficiency, then the problem of unemployment is arising in such places. Ahilyanagar district is no exception. If the population growth rate in the district continues to increase at the same rate, then poverty and social unrest may increase.

c. Stress on infrastructure:

Congestion in roads, schools, hospitals and public transport system, poor quality of public services, deteriorating living standards and many such infrastructures are creating stress and pressure. This is a problem of population growth and there is no doubt that these things will have to be faced in the future as well.

d. Land fragmentation:

Especially in rural and agricultural areas, land is being divided due to the increasing population. The area that is in hectares today has come to some knots. Due to which the productivity and income of farmers is decreasing day by day.

e. Urbanization issues:

The youth, unemployed and the youth class of the rural areas of the district are migrating from villages to cities for jobs and business. Therefore, the number of slums and towns is increasing in major tehsil cities and near tourist destinations. Due to this, problems are being observed in terms of development and cleanliness there.

f. Education and Health Challenges:

Population growth is putting pressure on education and health care systems. If per capita expenditure on health and education starts decreasing, the quality of human capital may be affected over time.

Sectoral Impact of increasing population:

High population can lead to land fragmentation, overuse of agricultural land, and reduction in production and productivity. On the other hand, it can also benefit from a large workforce and market in industry and services. However, if the available population is allocated according to their educational qualifications and experience, as well as the social and modern needs, investment in training, technology and infrastructure can have a positive impact.

Recommendations of increasing population:

1. Family planning and awareness creation.
2. Motivation for skill development.
3. Creation of vocational training and higher education facilities to make workers employable in modern sectors.
4. Development of infrastructure.
5. Efforts at the government level to meet the growing needs.
6. Necessary plans for agricultural modernization e.g. use of technology to improve production despite limited land, promotion of good irrigation and crop diversification etc.
7. Practical implementation for sustainable urban planning e.g. providing adequate housing to prevent slum growth, creation of cities with sanitation and traffic-free, creation of well-planned and developed cities etc.

Conclusion:

The increasing population in Ahilyanagar district (formerly known as Ahmednagar, on 13 March 2024, the Maharashtra Cabinet approved the renaming of Ahmednagar to Ahilyanagar District) has had multifaceted impacts on its economic development. Recently, economic development is positively increasing day by day in the study area. This shows the great impact on the socio-economic conditions of farmers as well as the other sectors in this area. It is observed from these areas that there is a greater variation in the changes regarding to land. This is mainly because of the agricultural land is being converted into residential and other uses for the growth and development of the specific area of the Ahilyanagar district. While population growth can provide a larger labour force and stimulate demand, it also poses challenges related to resource allocation, infrastructure, employment etc. According to the 1991 census Ahilyanagar district had a population of 33, 72,935, 2001 census 40, 40,642 (4.17%) and 2011 Census of 45, 43,159 (4.04%). The district experienced a population growth rate of 19.80% from 1991 to 2001 and 12.43% from 2001 to 2011. Population growth rate during the 10 years period from 1991 to 2001 was 0.67 million, from 2001 to 2011 it was 0.56 million and from 2011 to 2021 it is estimated that the

population has increased by 0.56 million. The growing population of Ahilyanagar district presents both opportunities and challenges for economic development. The uncontrolled growth of population is having a huge impact on resources, infrastructure and social systems, which is creating obstacles to sustainable development. The sources of economic development are not traditional but technological development e.g. Industry, Irrigation, Rural Electricity, Tourism Sector, Education, Transport Connectivity, Digital Economy, E-Commerce etc. If strategic policies are adopted, investment in infrastructure is also managed wisely it would not be an exaggeration to say that population growth can bring prosperity to the development of the district.

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