

# A Block Level Analysis of Decadal Population Growth in Jhargram Subdivision of Paschim Medinipur, West Bengal During 1961 To 2011

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**ABSTRACT:** Population growth refers to the increase or decrease of inhabitants in a particular area during a specific period of time. West Bengal is one of the populous states of India and Paschim Medinipur is a highly populated district of West Bengal. The western part of this district is formed by Jhargram Subdivision which is economically very backward in nature compared to the other subdivisions of the district. This paper analyses the population growth of Jhargram Subdivision during a period of fifty years (1961 to 2011) and finds out that the region had very high population growth rate during 1961 which has come down considerably in 2011. But during each decade a certain undulating trend of population growth in each block can be seen as a result of natural increase and socio-econo-political scenario of the district. The analysis reveals that the study area has entered the late second stage of demographic transition in 2011 from first stage in 1961.

**KEYWORDS:** Population, Decadal population growth, Birth & death rates, Exponential growth rate, Human resources.

## I. INTRODUCTION

Indian population is growing at an alarming rate, the consequences of which have already started to show their impacts on mankind. (Phukan, [10] 2011). With the current status of growth of Indian population, the future of this nation is going to be very difficult in terms of natural resources, environmental issues leading to a depreciation of economic set up of the society. As a result of nature's law, population generally tends to increase. When the percentage of population change is taken into account, it is important to calculate it in terms of rate of exponential growth in order to trace minute ups and downs in the continuous process of population change over time in a particular region. In *An Essay on the Principle of Population*, Malthus states that human population grows exponentially (doubling with each cycle) while food production grows at an arithmetic rate. This scenario of arithmetic food growth with simultaneous geometric human population growth will lead to a situation when humans would have no resources to survive on. (Malthus, [1] 1798). Nature of population growth in Jhargram Subdivision is governed by birth rate, death rate and migration. Being one of the backward Subdivisions of Paschim Medinipur and mainly populated by tribal population, it is important to understand the trend of population growth in the study area. This paper has evaluated the nature and trend of population growth in each block of Jhargram Subdivision during a span of fifty years.

## II. RELATED WORK

The book *Population Growth and Economic Development in Low-Income Countries* assesses the prospect of economic development in the light of population trends in India. (Coale & Hoover, [2] 1958). It does not develop a forecast of the rate of population growth but is instead concerned with an attempt to weigh the influence of possible changes in human fertility in India in terms of the relative rates of economic progress attainable under alternative maximum and minimum fertility trends. The research paper "Migration and Population Growth: A Case Study of

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Assam” by Bandana Chowdhury states that The tremendous influx of migrants into Assam has left it grappling with the massive problem of population explosion and has put enormous pressure on the socio-economic infrastructure of the state. A change in the demographic pattern in a country is an obvious resultant effect of migration, but if the change is significantly high in a short span of time it is bound to cause a serious socio-economic problem for the country experiencing this phenomenon. The paper focuses on the changing demographic structure of Assam in the context of sustained and large scale migration. Besides it estimates the impact of in-migration and immigration on population growth in Assam. Empirical evidence prompts the paper to conclude that the population in Assam is significantly affected by the intra-state and international migration, but not by the inter-state migrants. Besides evidence reveal that the population in Assam is significantly affected by immigration from Bangladesh and Nepal, but not from Bhutan. (Chowdhury, [3] 2013).The doctoral thesis “Population Characteristics and its Impact On Socio – Economic Development Of Ahmadnagar District”-A Geographical Analysis” by Dhanwate Kishor Gajanan highlighted the major characteristics of population and the impact of its on socio-economic development with special reference to the geographical region of the Ahmadnagar district which is located in the state Maharashtra. Having recorded 4040642 population in 2001 the study area invited the attention of the researcher to study the various pattern and the distribution of population on the basis of growth, distribution, composition, occupation and other major and minor components of population. (Gajanan, [4] 2013).Rapid growth of population over the past hundred years results from the gap between birth and death rate. Population growth becomes a threat to socio-economic well-being of human beings, and is more vulnerable where the group is already socio-economically underprivileged. Tough population growth has its positive impact on economic development. West Bengal occupies the third position among states of the country in terms of Muslim population.Muslims are not uniformly distributed in all districts of the state. Moreover, Muslims of West Bengal are largely rural community in comparison to their coreligionists in other parts of the country. This means that Muslims of West Bengal are less urbanized. Lower literacy rate and educational attainment is the overall characteristic of the Muslim in India in general and Muslims of West Bengal in particular.(Mainuddin, [5] 2010).It has been well accepted that if the amount of resource available within a country does not feed its total inhabitants due to excessive population in comparison to existing resource, quality of life of individual and socio-economy of that area collapse, which is very often found in developing nations of the world. Consequently, well-being of common people through provision of basic needs like food, clothing, shelter, education, and health is obstructed. This adversely affects the quality of life of an individual. Increasing rate of population growth brings reduction in per capita income of people by creating pressure on land, making consumer product costlier and decreasing national capital. Moreover, the increase in the population growth rate due to high fertility, low mortality and inflow of migrants prevent improved quality of life also.(Basu Roy & Das, [6] 2011).The article “Migration and Changing Poor Dynamics in a Village: A Case Study” by Harasankar Adhikari is of the view that the urbanization has been significantly created wide scope of employment opportunities through manifold service sectors. (Adhikari, [7] 2013). The mobility or migration of rural people has changed the social and economic condition of the landless labour of the rural area. In this case study migration of the young villagers of East Midnapore district of West Bengal who were from landless labour families with a little education has been noted. Their social and economic position had been remarkably changed within 3-5 years. They were capable to make their family healthy and wealthy through improved shelter, regular diet and creation of other properties.

### III.SCOPE & OBJECTIVES

The objectives of this paper are-

- To identify population growth patterns in Jhargram Subdivision compared to Paschim Medinipur and India.
- To identify and analyse population growth trends in different decades from 1961 to 2011 in each block of Jhargram Subdivision.
- To analyse the reason behind any particular growth pattern prevalent in the area
- To visualise spatio temporal pattern of population change in the study area.

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## IV. METHODOLOGY

The present study is done mainly with the help of secondary data. The data sets of population are collected from District Census Handbook of Medinipur and Paschim Medinipur for the year 1961, 1971, 1981, 1991, 2001 and 2011. Data sets of birth and death rates are collected from various reports from Department of Health, Government of West Bengal. Data and information on migration are collected various books and journals related to the theme. A number of books and journals have been consulted while ideating about the present study. While calculating exponential growth rate of population the following formula has been used-

$$E = \{ \text{Log} (P_1/P) \} * 100$$

Where, E= Exponential growth rate, Log= Natural logarithm, P<sub>1</sub>= Population of succeeding year, P= Population of base year.

To present the data choropleth maps and tables are used to give an account of the spatial variation of the theme on the study area.

### a. STUDY AREA

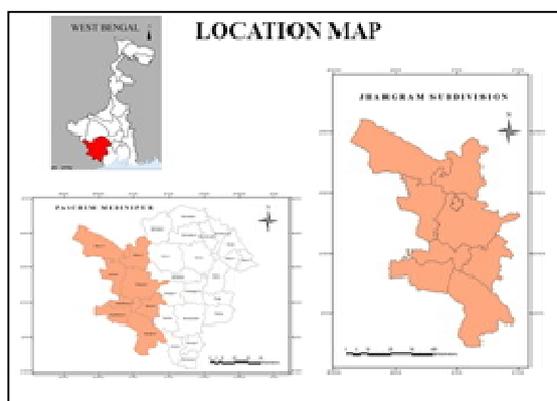


Fig. 1. Location map of Jhargram Subdivision.

Jhargram Subdivision is located between 22°00' N to 22°51'06"N latitudes and 86°32'30"E to 87°14'24"E longitudes. It forms the western part of Paschim Medinipur District. Jhargram Subdivision is surrounded by Orissa and Jharkhand towards its south-western and western part, Purulia District towards its north western part, Bankura District towards its north and Medinipur Subdivision and Kharagpur Subdivision towards its eastern and south eastern part respectively. Jhargram Subdivision consists of eight Community Development Blocks, namely, Binpur-I, Binpur-II, Gopiballavpur-I, Gopiballavpur-II, Jhargram, Nayagram, Jamboni and Sankrail and Jhargram Municipality. These eight blocks contain seventy nine Gram Panchayats. The Subdivision has its head quarter at Jhargram. Jhargram Subdivision is situated among the hilly and rolling uplands of Chhotanagpur plateau and the undulating tract of Rarh Bengal. The geological formation of the area is mainly lateritic, which occupies the central as well as the southern parts of the area, while the eastern part is characterized by alluvium of Lower Ganga Plain. The general slope of the area is from north-west to east south-east. There are three rivers (Kangsabati, Subarnarekha and Dulung) which drain the Subdivision from north-west to south-east. The area is one of the drought prone areas of Paschim Medinipur District. The climate is warm humid tropical in nature and falls under Koppen's Aw type of climatic classification. The vegetation of the Subdivision is dominated by jungles consisting of Shorea robusta (Sal) or by mixed forest where species of Alagia, Schleicheria, Schrebera, Terminalia and similar trees with many shrubs and climbers are found.

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## V. EXPERIMENTAL RESULTS

Table No. 1. Exponential growth rate of population in Jhargram Subdivision, Paschim Medinipur & West Bengal from 1961 to 2011

Years	West Bengal (%)	Paschim Medinipur (%)	Jhargram Subdivision (%)
1961-71	23.80	24.31	19.60
1971-81	20.84	19.74	12.42
1981-91	22.10	19.33	16.04
1991-2001	16.36	14.64	14.18
2001-2011	12.97	12.98	12.00

Computed by author

Data source: District Census Handbook, Medinipur & Paschim Medinipur

A comparative account of population growth in West Bengal, Paschim Medinipur and Jhargram Subdivision on a spatio temporal scale shows that population growth has shown an undulating trend during the mentioned fifty years in West Bengal, Paschim Medinipur and Jhargram Subdivision. During the period 1961 to 1971 the decadal population growth rates were 23.80 percent, 24.31 percent for West Bengal and Paschim Medinipur. These values are considered to be on the higher side of population growth rate, indicating the fact that population grew at a very fast rate during this period. On the other hand Jhargram Subdivision's decadal population growth rate value (19.60%), though a bit higher in nature, is less than that of Paschim Medinipur and West Bengal averages. This show the fact that in Jhargram Subdivision population did not grow to a very large extent as it should be as a part of West Bengal which was one of the highly populated states of India during that time. After independence and partition of Indian subcontinent in 1947 refugees moved from Pakistan to various parts of India especially to West Bengal. The enormous in-migration of people from the then East Pakistan caused a remarkable growth of population all over West Bengal (Kumar, [8] 2007). Jhargram Subdivision also faced this scenario to some extent and thus the population growth showed a high value during 1961 to 1971. Population grew further in all over West Bengal. But during 1971 and 1981 a sharp decrease in decadal population growth rate all over West Bengal can be seen. Paschim Medinipur and Jhargram Subdivision were no exceptions. After the emergence of Bangladesh as an independent state in 1971, the march of refugees continued in West Bengal from Bangladesh. A large chunk of people of minority community infiltrated West Bengal. But there has been a general drop in population growth during this time on the account of expansion of education, family planning programmes and social consciousness. Post 1971 checks on international migration and in migration also led to this decline in growth rate of population in West Bengal. West Bengal had a population growth rate of 20.84 percent while Paschim Medinipur showed 19.74 percent and Jhargram Subdivision had only 12.42 percent population growth rate. During 1981 and 1991 era population size of the entire state showed a rapid increase. Surprisingly population size increased more rapidly than implied by the reported rate of natural increase. This was only possible with substantial immigration. During this period reported death rates have almost formed a plateau and birth rates showed a slow but steady decline, which resulted into the narrowing of gaps between these two components of growth. Thus it can be assumed that the excess growth during this period cannot be fully explained by natural increase (Ray, [9] 1993). Decadal growth rate of population rose to 22.10 from 20.84 percent. Jhargram Subdivision showed a rapid jump in population growth rate which reached 16.04 percent from 12.42 percent. This sudden rise in population growth is not an outcome of birth and death only. In-migration had played an important role in pushing the population growth rate up during this period. Interestingly, population growth rate of Paschim Medinipur showed a very slight decrease in value from 19.74 to 19.33 percent. The census decade of 1991 to 2001 shows a general decline in population growth rate all over India as family planning measures, awareness and education regarding over population have been more in focus as per government's planning check list. As a result population increase slowed down to some extent. In 1991 and 2001

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the decadal population growth rate of West Bengal, Paschim Medinipur and Jhargram Subdivision were 16.36, 14.64 and 14.18 respectively. All the values were lower than that of national average. This indicates that a direct impact of further narrowing of gap of birth and death rates has resulted into such a situation. The decreasing trend population growth further continued till 2011. The 2001 and 2011 decade showed the lowest growth rate of population ever since 1961. Growth rates of West Bengal (12.97%) and Paschim Medinipur (12.98%) were still higher than that of Jhargram Subdivision (12%).

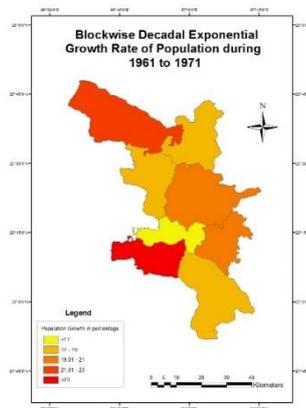


Fig. 2. Blockwise population growth in Paschim Medinipur during 1961 to 1971

Given the Subdivisional picture of nature of population growth compared to state and regional level, this paper will now examine decadal population growth of individual CD Blocks of Jhargram Subdivision.

Table No.2. Block wise exponential growth rate of population in Jhargram Subdivision from 1961 to 2011

CD Block	1961-71	1971-81	1981-91	1991-2001	2001-2011	Change from 1961 to 2011
Jamboni	17.44	8.84	18.06	12.07	10.69	-6.75
Jhargram	19.94	17.12	-6.21	13.62	10.37	-9.57
Binpur II	22.98	11.21	13.69	11.55	11.95	-11.03
Binpur I	18.89	13.19	15.59	12.98	11.52	-7.37
Gopiballavpur II	7.38	8.38	14.36	12.81	11.8	4.42
Gopiballavpur I	35.29	12.87	14.4	16.76	13.23	-22.06
Nayagram	17.1	11.11	14.76	15.17	13.74	-3.36
Sankrail	19.73	13.15	12.84	15.74	11.73	-8
Jhargram Municipality	NA	NA	NA	23.31	14.94	Change from 1991 to 2011 -8.37

Computed by author

Data source: District Census Handbook, Medinipur & Paschim Medinipur

Jhargram Subdivision as a whole showed a moderately high population growth of 19.60 percent during 1961 to 1971 decade, which was lower than both national and state averages. But it is observed that the range of population growth rate varies from 7.38 in Gopiballavpur II to 35.29 percent in Gopiballavpur I. It is interesting to note here that both the CD Blocks are adjacent to each other. During 1961 these two Blocks were non-existent, there was only one Block called Gopiballavpur which consisted of present day Gopiballavpur I and II. Both the CD Blocks are near Subarnarekha River, but the concentration of schedule tribes in Gopiballavpur I was more than that of in Gopiballavpur II. Thus it is possible that the birth rate amongst the tribes of Gopiballavpur I was much higher than the death rate due to unawareness and lack of education. Thus the natural increase has resulted into the high population growth in the area. Also being situated near the river banks has helped in attracting more number of people to the particular block. On the

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other hand Gopiballavpur II is also situated near river bank but the least rate of growth indicates that not a very big number of people lived there during that period, the majority of Gopiballavpur II was covered with agricultural land. The second highest population growth is observed in Binpur II. Again this area was populated by mainly tribal people in large numbers during 1961 & 1971, thus the high birth rates might have led to high growth rate of population in this region. There was no such division as Binpur I and II in 1961, but Binpur was an undivided CD block consisting of all the villages of present day Binpur I and II. Except for one CD Block of Gopiballavpur II all the other CD Blocks show decadal birth rates more than 17 percent. This means almost all the blocks experienced high population increase during this decade. Some of it owed to natural increase and some of it owed to in-migration of refugees.

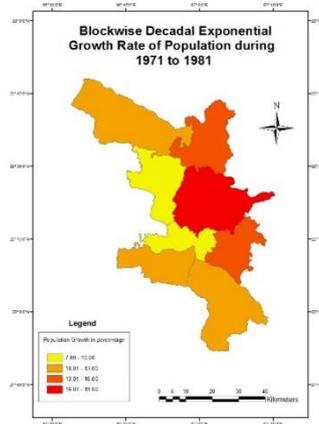


Fig.3. Blockwise population growth rate in Jhargram Subdivision during 1971 to 1981

It is observed that population growth all over West Bengal declined during 1971-81 era. All the CD Blocks of Jhargram Subdivision showed a decline too in decadal population growth rate except for Gopiballavpur II. The whole region of Jhargram Subdivision can be classified in two groups i.e. the western part having lesser population growth and the eastern part having higher population growth. Although there has been a slight increase in growth rate, but the least rate of population growth is still seen in Gopiballavpur II (8.38%). Again this situation was relevant mainly due to less number of people inhabiting the area and presence of more agricultural land. The highest value of population growth rate is seen in Jhargram block (17.12%). The developmental initiatives in Jhargram block was the main reason in growth of population in this region. Although the block recorded a decrease in population growth rate from that of the previous decade. All the remaining blocks show population growth of more than 11 percent in the Subdivision. The decrease of population growth rate was a result of growing social awareness and development in education sectors. Overall all the blocks represent low to middle population growth rate during this era.

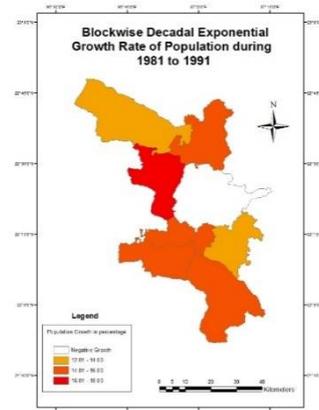


Fig.4. Blockwise population growth rate in Jhargram Subdivision during 1981 to 1991

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In 1981-91 population growth rate once again showed an increasing trend during this period. All the CD Blocks of Jhargram Subdivision experienced an increase in decadal population growth rate from the previous decade except for Jhargram and Sankrail Blocks. The increase in population was partially due to high birth rate and mostly due to in-migration of people from Bangladesh who came and settled in various districts of West Bengal after the independence of Bangladesh in 1971. During this decade Jamboni Subdivision showed a marked increase in population growth, ranking first among all the other CD Blocks of Jhargram Subdivision. Here population growth during 1971 and 81 was 8.84 percent which rose to 18.06 percent in 1981-91 era. On the other hand Jhargram Block had undergone an important politico-administrative change during this decade. A part of Jhargram block was separated from its jurisdiction to form Jhargram Municipality in 1982. Jhargram town became the Subdivisional headquarter of Jhargram Municipality. Naturally the area and the population both got affected due to this change. Some people automatically fell under the jurisdiction of Jhargram Municipality who were initially under the CD Block of Jhargram and some shifted to Jhargram Municipality from other areas of Jhargram Block for better future opportunities. Thus during this period Jhargram Block showed a negative growth rate of -6.21 percent. Sankrail was another block which showed decreased population growth rate of 12.84 percent. All the remaining blocks had population growth rates which fell within the range of more than 12 percent and less than 18 percent in general. Thus a general increase in population growth can be seen during the above mentioned era.

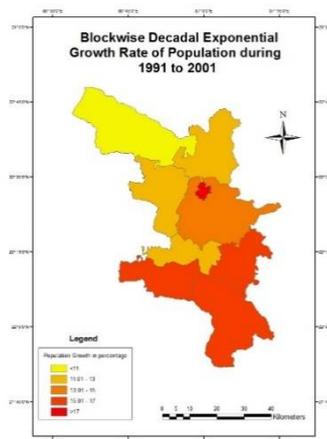


Fig.5. Blockwise population growth rate in Jhargram Subdivision during 1991 to 2001

During 1991 and 2001 era population size increased but the decadal rate of population growth was even lower than that of the previous decade in almost entire West Bengal. Paschim Medinipur and Jhargram Subdivision apparently followed the same trend. But when block level situations are considered it portrayed a different trend. Four out of eight Blocks showed an increase in population growth and the other four blocks showed a decrease in population growth rate from that of the previous era. It is worth mentioning here that during 1981 to 1991 census period Binpur was divided into Binpur I and II and Gopiballavpur was divided into Gopiballavpur I and II. The maximum population growth rate was in Jhargram Municipality (23.31%) and among the blocks the highest was Gopiballavpur I (16.76%). In Gopiballavpur I the growth rate increased from 14.4 to 16.76 percent. This situation is can only be explained with the fact that since the particular block was covered with mostly tribal population, thus the positive sides of family planning were not totally understood by the people of that place. Also, people from neighbouring states and districts came to work in agricultural fields here in a good number. All these factors must have affected the rise in population growth in Gopiballavpur I. Actually Jhargram Municipality showed the maximum growth rate in the area but since it just came into being in 1982 a lot of people moved to this area. The educational, social infrastructure were better, medical facilities were improved, connectivity was growing, job opportunities were better, which attracted a lot of people to this Municipal area. More than the natural increase the migration has resulted into this high rate of population growth in Jhargram Municipality. Jhargram, Gopiballavpur I, Nayagram and Sankrail blocks experienced increase in population growth rate from previous decade. For the decade 1991 and 2001 the block wise population growth rate shows a

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descending pattern from south to north. It is quite obvious that after experiencing a negative growth rate in the previous era, the settling of political and administrative situations must have led to rise in population in the area. Also being situated near municipal town and Sub divisional headquarter Jhargram, CD block of Jhargram experienced an increased growth in population. Thus overall a trend of population growth can be observed in the blocks of Jhargram Subdivision which does not match with that of state and regional level population growth rate trends.

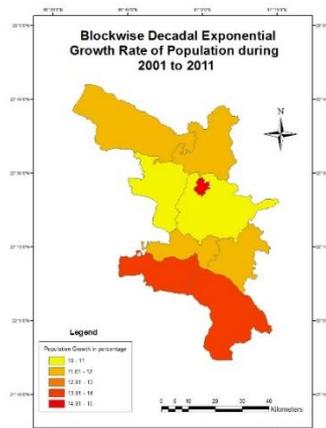


Fig.6. Blockwise population growth rate in Jhargram Subdivision during 2001 to 2011

In 2001 to 2011 decade the major administrative change that occurred at district level was the division of Medinipur to East and West in 2002. All the blocks of Jhargram Subdivision during this period have shown considerable low values of population growth. During this era the general trend of population growth conforms to the state and regional level averages and shows the similar pattern at block level. It is found that all the blocks except Binpur II have decreasing population growth from the previous era. The highest population of 14.94 percent was found in Jhargram Municipality, while the lowest was in Jhargram Block. The Blocks of Nayagram and Gopiballavpur I rank second and third in population growth having a growth rate of 13.74 and 13.23 percent respectively. Along with Jhargram, Jamboni Block also shows relatively low population growth of 10.69 percent. Binpur II recorded a slight increase in population growth rate during this period. Jhargram Municipality is surrounded by Jhargram block, yet two extreme growth rates (the highest and lowest in the Subdivision) are present in these two regions. In general the population growth rate is much lower than the national and state levels which indicates that population did not grow to a very high extent in Jhargram Subdivision.

## VI. CONCLUSION

Population if taken as numbers, is always increasing but the rate of increase is declining almost all over the world. This pattern of decreasing population growth is not always a very smooth decline, but is often affected by several physical as well as socio-economic factors that cater to sudden increase or decrease in population size on a spatio-temporal scale. Jhargram Subdivision shows a declining population growth rate. The equilibrium between birth rate death rate and migration has put the status of the subdivision in the late second stage of demographic transition where birth rates have started to decrease and death rate has already decreased to a large extent resulting into a slower growth rate of population. But in order to stabilise the situation to an optimum level the birth rate has to decrease more in coming years. The in migration and out migration have very little influence in the area in recent times. The CD Blocks have shown a declining trend of population growth except for Gopiballavpur II. Various socio-econo-political reasons are responsible for an uneven pattern of population growth rate in the blocks. Still the availability of population as a resource is ample and it is crucial to convert the population to an asset from a liability.

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