STALLED FERTILITY TRANSITION IN ASSAM – EXTENT AND NATURE

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CERTIFICATE

I, MEGHNA BURAGOHAIN, certify that the dissertation entitled "STALLED FERTILITY TRANSITION IN ASSAM – EXTENT AND NATURE" of MASTER OF PHILOSOPHY is my bonafide work and may be placed before the examiners for evaluation.

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INTRODUCTION

1.1 Introduction

One of the most important demographic events of the past few decades has been the onset of fertility decline in a number of developing countries. In the long run, the level of fertility has the greatest effect on population growth because of its multiplier effect; additional children born today will have additional children in the future. Fertility projections are made to trace the future course of population growth of nations till it reaches its eventual level, assuming mortality and migration rates as fixed. Once fertility reaches its eventual level the population will reach a stable age structure and constant growth rate. If the eventual fertility is at replacement level and net migration is zero, the growth rate will eventually be zero, i.e. , the population will not only be stable, but stationary as well.

The general course of fertility trends as a country progresses from a rural, agrarian and under-developed economy to a predominantly urban, industrial and developed economy has been well documented by the demographic transition theory. In 1945 it was Frank.W.Notestein who presented the theory of demographic transition. He noted that the rapid growth of population during the past three centuries was mainly due to decline in the death rate, resulting from the process of modernization, which involved rising standards of living, rising incomes, and advances in sanitation and in medical knowledge

Empirical evidence from all parts of the world overwhelmingly confirms the relevance of the concept of demographic transition. The transition is well advanced in all regions except the sub-Saharan Africa and parts of the middle-east, and even here the beginnings of a fertility decline are becoming apparent. In several countries such as China, Taiwan, and Korea, fertility is already at sub-replacement levels. In many other countries in

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Southeast Asia and Latin America, fertility has fallen to levels seen just a few decades ago in the developed countries.

The experience of many countries, both developed and developing, has shown that once decline in fertility sets in, it continues until low levels are reached (Watkins, 1987). This transition from high to low fertility is seen as monotonic, representing a clear break from the past. However, the pace of decline has varied across countries.

Demographers have long sought indicators reflecting the socio-economic conditions that would determine the timing and speed of transition. In Europe, North America and Japan, mortality fell slowly for two centuries as food supply stabilized, housing and sanitation improved, and progress in medicine was made. In contrast, mortality in less developed countries fell over the course of just a few decades after World War II, as Western medical and public health technology and practice spread to these regions. One result was that in less developed countries populations grew at a much faster pace than in the more developed countries at a comparable stage of their own transition.

It is difficult to single out one specific or even a 'most important factor' which is responsible for triggering declines in fertility and this renders the task of predicting future fertility trends difficult. The earliest attempt to explain the demographic transition cited industrialisation and urbanization as the ultimate driving force (Thompson, 1930; Notestein, 1945). According to this classical transition theory, economic modernization leads to improvements in health and nutrition that decrease mortality. Modernisation also leads to changes in economic and social conditions that make children costly to raise and reduce the benefits of large families. Eventually this leads to lower fertility.

The idea that reduced demand for children drives fertility decline was given theoretical rigour in the 1960's with the development of a theory based on changes in determinants of parents' demand for children (Becker, 1960), which provided a micro-economic model describing choices parents' are assumed to make between numbers of children and

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consumption of material goods at the household level. This framework has been extended and made more flexible by taking into account sociological aspects. Easterlin (1969, 1975) added supply factors (environmental and cultural effects on fertility in the absence of regulation) and costs (including the psychic, social and monetary costs of fertility regulation) to the focus on demand.

The way in which non- physiological factors affect fertility in any society may be explained on the basis of the widely acclaimed model devised by Davis and Blake (1956), which tries to describe the factors which influence fertility directly with the help of "intermediate fertility variables". Bongaarts identified direct determinants of fertility which he called "proximate determinates of fertility". According to Bongaarts and Potter (1983) the proximate determinants of fertility are the biological and behavioural factors through which social, economic and environmental variables affect fertility.

Over the years, explanations have given much more weight to sociological over economic factors. It came to be argued that reproductive decisions are not based strictly on a rational weighting of the consequences of childbearing, but are strongly influenced by cultural and normative contexts. Caldwell (1982) elaborated a theory that identified a shift away from extended family structures toward the child-centered nuclear family as the cause of a reversal in the flow of wealth (money, goods, services, and guarantees against risk) from children to parents typical in pre-transitional societies to a flow benefiting children. As children replace parents as beneficiaries of the family, fertility falls.

Other researchers have emphasized the role of cultural over socio-economic factors. Based on analysis of the fertility transition in Western Europe it was seen that the differences in fertility across societies were largely due to differences in religious beliefs and the degree of secularism, materialism and individuation. Cleland and Wilson (1987) concluded that ideational change in general, and the spread of new ideas about the feasibility and acceptability of birth control in particular was a key factor in fertility

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decline and likely more important than economic conditions. Bongaarts and Watkins (1996) demonstrated that diffusion of ideas and information about limiting fertility are important. They showed that fertility transitions typically start in leader countries where development levels are relatively high, then spread to other countries in the region, often before they have achieved the same level of development.

Demographic transition theory has been and continues to be a central focus of demography. While there are many ideas, each offering important insights, no single, simple theory explains the multi-faceted historical experiences with transitions. The question remains as to which factors are more important in tracing fertility decline and does a fast pace of decline in the recent past ensure a continuation of such trends?

There have been instances of stalls in such a transition in a few populations. This is in contradiction to the presumed notion that once fertility decline starts it continues its downward trend unabated. But the case of the post war baby boom in North America and Europe has been well documented, the rises in the 1960's in China, stall in the mid 1970's in Malaysia, and the recent stalls in Egypt, Bangladesh etc. are also aberrations which do not seem to conform to the model of demographic transition. Concern has already been expressed by some observers about what appear to be not only stalls in the fertility declines of a number of developing countries but even a possible leveling off of fertility well above the replacement level. The causes are varied - policy change trigged by revolutions, regime change, etc.

India was the first country in the world to introduce an official programme for family planning in 1952. Initially, there was hardly any change in fertility but the early 1970's experienced a perceptible, albeit small, decline in fertility. However, a fertility stall was observed in almost all the states in the period following the emergency. This was a result of the temporary setback suffered by the Family Planning Programme. For the state of Assam, a scan of trends of fertility and mortality observed from the 1960's till date points

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to certain deviations from the all India trend, peculiar to this state alone. The stall in fertility transition in the 1980's was prolonged as compared to the all India level and was sustained over a fairly long period of time.

Various theories of economic development have underlined the importance of demographic factor as one of the key variables. The classical economists like Ricardo and Malthus built their concept of economic development around quantitative implications of expanding population, inelasticity of resources (land) and the operation of the Law of Diminishing Returns. Karl Marx propounded a labour theory of value, exposed the exploitation of labour by capital and predicted the capitalist crisis while Keynes emphasized savings and investment as crucial variables in a theory of macro-economic development which aimed at full employment as the desideratum.

With due awareness to the significance of demographic factor in socio-economic development it is necessary to study objectively the demographic situation in the North Eastern Region so as to arrive at the broad approach and policy thrusts of development planning. In the state of Assam which is rich in resource endowments but poor in infrastructure and manpower, the process of socio-economic transition is dragging a hithero subsistence-based economy towards market-orientation and exposing a tradition bound society to the forces of modernization. It is in this background that the demographic aspects of socio-economic development need to be studied so as to gear regional planning to the changing circumstances. Planning with a broad sweep to ensure regional benefits cannot afford to overlook the intricate problems of intra-regional diversities and disparities. In deciding the goals and targets of micro-level planning the demographic diversities, settlement and livelihood patterns and socio-cultural ethos are as important as factors like land-use patterns, land tenure, institutional setup and technology. In this context, the observed stall in the decline in fertility assumes importance and requires an in depth investigation.

1.2 Objectives

The purpose of my dissertation is to look into the phenomena as stated above for the state of Assam, especially from the viewpoint of fertility and its correlates. Traditionally the studies pertaining to the demographic changes in Assam have chosen to focus on the issue of migration and its socio-economic implications. Notwithstanding the fact that migration and insurgency have played a dominating role in shaping the socio-economic trends and contours of the state, yet any study of demographic trends has to encompass the issue of fertility, mortality and migration. From the literature available and reviews it can be gathered that not much work has been done on this aspect and is a yet to be explored field of study. Therefore, the present work seeks to examine the fertility trends in Assam, compare these to the national trends, and look for reasons for divergence and to assess whether these are related to socio- economic development or other factors peculiar to the state of Assam.

1.3 Research Questions

The study proposes to address the following research questions.

1. Is there any deviation in fertility trends of Assam from the all India fertility trends?

2. To what extent do the trends in the level of contraceptive acceptance in Assam correspond to this deviation in fertility levels?

3. Is the level of fertility in Assam compatible to the level of socio-economic development vis-à-vis corresponding levels observed in the other states of India?

4. Are there areas within the state where fertility levels are considerably high and what are the reasons?

1.4 Methodology and Study Area

The aim of the study is to do an analysis at two levels:

Meso-level:

1. A comparison of fertility levels of Assam with All India level on the basis of Sample Registration System data is the first step in the analysis. The retrospective fertility data provided by the National Family Health Survey have also been analysed. The meso level study also includes the decomposition of the CBR change into its major components in order to assess what part of the decline in CBR could be attributed to changes in age structure, marital status, marital fertility and proportion of women in reproductive ages. The standardization method given in Manual IX of United Nations (1979) has been used. Trends in contraceptive acceptance and prevalence and prevalence rates are also examined.

2. Regression analysis of fertility levels with different socio-economic variables to see if Assam is an outlier compared to other states has been done. Such an analysis has been carried out at different time points so as to identify temporal changes in the pattern.

Sub regional level:

1.The study also examines fertility at the district level in the state. An attempt has been made to see whether fertility levels within the state are commensurate with the existing level of development with the help of a regression analysis.

Figure 1.1

**STUDY AREA
(ASSAM)
2001**

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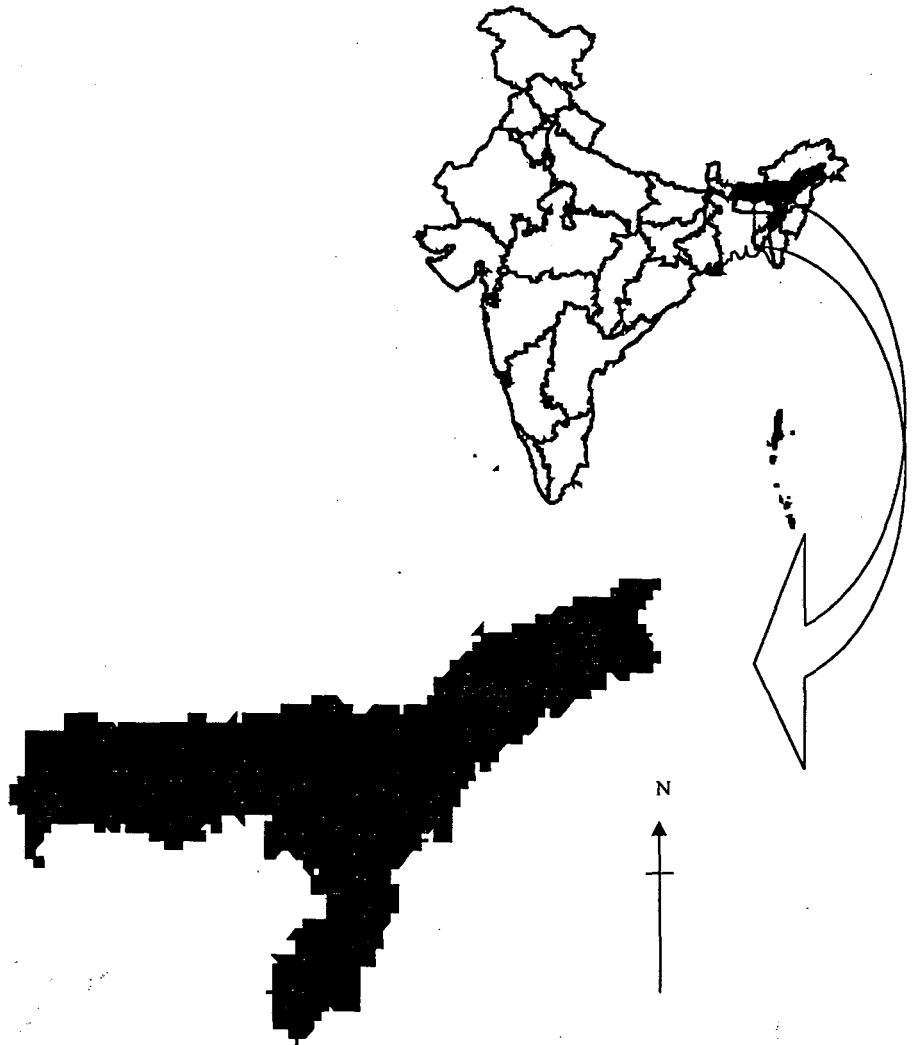
NOT TO SCALE

1.5 Chapterisation

The first chapter deals with the introduction and purpose of study. A literature review of cases of similar stalls in fertility decline observed in other countries of the world has been presented in the second chapter. The third chapter the geographical setting of the study area has been outlined along with a comparative socio- demographic profile of Assam vis-à-vis India. The problem of migration and its related political implications on the demography of the state have also been attended to. The fourth chapter presents an analysis of the fertility trends in India and Assam from both Sample Registration System and National Family Health Survey data. Decomposition of the Crude Birth Rate to assess the contribution of the component parts and the trends in family planning acceptance has also been correlated with the political developments over time. Relationship between fertility levels and development and the way it has changed over time have been examined in the fifth chapter. This has been done covering the time period when fertility decline had stalled in Assam. A sub- regional level study of the same has also been done. The concluding chapter includes a summation of the observed facts and findings, and implications of these.

Chapter 2

Review of Literature

Chapter – 2

REVIEW OF LITERATURE

2.1 Fertility Transition and stalls in Fertility Decline

Fertility transition is identified as a decline from a plateau of 'natural fertility' leading to replacement-level fertility gradually over a period of time. This transition is a generalization of the sequence of events observed over the past two centuries in the more developed countries. While different societies experienced the transition in different ways, in broad outline these societies have gradually shifted from small, slowly growing populations with high mortality and high fertility to large, slowly growing populations with low morality and low fertility (Knodel and van de Walle, 1979). During the transition itself, population growth accelerates because the decline in death rates precedes the decline in birth rates.

While most Sub-Saharan African countries as well as a number in the Middle East and West Asia have yet to participate in this phenomena, fertility in countries elsewhere in Asia and in much of Latin America has started down a path towards levels far lower than ever prevailed in their modern histories. Given that mortality declines preceded the fall in fertility, and that most of these populations have been experiencing unprecedented rapid population growth rates at levels that would lead to extraordinarily large numbers of people in just decades, most observers concerned with population matters view the onset of fertility decline as a logical and welcome development. In its broadest outline, the changes in many of the current developing countries can be seen as conforming to the pattern typically referred to as the demographic transition. This process is already close to completion in most of the more developed countries of the world where fertility is generally below replacement level and population growth is slow or even negative.

The demographic history of the more developed countries suggests that, once begun, the secular decline in fertility associated with the demographic transition is typically continuous and ceases only after far lower levels than previously experienced are reached (van de Walle

and Knodel, 1980). It is already clear that the pace of fertility and mortality declines currently taking place in the developing countries is usually considered faster than experienced many decades earlier in the more developed world. Whether fertility declines will follow the largely continuous and irreversible process that previously characterized the demographic transition remains to be seen and is an interesting empirical question for investigation. Concern has already been expressed by some observers about reported stalls in the fertility declines of a number of developing countries. When viewed with a longer historical perspective, a stall of a few years or even a few decades may seem insignificant. Nevertheless, such stalls can have substantial implications for population size at any given point of time in the foreseeable future, especially when a considerable gap between birth and death rates still exists.

Of special interest, therefore, are not only countries which have yet to embark on a fertility decline, but also those in which the fertility decline has apparently stalled. One study commissioned by the World Bank focuses on apparent fertility stalls in Costa Rica, the Republic of Korea and Sri Lanka (Gendell, 1984). In addition, the issue of retardation of fertility decline was one of the major topics addressed in a recent IUSSP (International Union for the Scientific Study of Population) seminar on the fertility transition in Asia (Knodel, Chayovan, Frisen; 1988).

Although fertility transitions tend to homogenize fertility rates across countries (Watkins 1986), post transitional populations nevertheless show considerable variation in fertility levels. In particular, while some post transitional populations have total fertility rates close to the long term replacement level of approximately 2.1 children per women, others have far lower levels, 1.5 per woman or less. While these latter countries face the prospect of extreme population aging and population decline, there are countries where the decline in fertility trends have slowed down resulting in a "fertility stall"

This trend was demonstrated in an analysis by Bongaarts (2002) of a comprehensive set of data for developing countries who observed that as countries approach the later stages of the

transition the pace of decline will slow down. The main reason for expecting this deceleration is that diffusion and social interaction processes accelerated the decline early in the transition. Once this process has largely run its course, fertility rate in the transition becomes closely tied to the level of socio economic development.

This study undertaken to examine the patterns and determinants of fertility in 143 developing countries from 1950 to 2000 to infer future trends revealed three findings.

1.   The pace of fertility declines decelerates as countries reach the later stages of the transition.

2.   It is highly likely that a substantial number of developing countries will fail to converge on replacement fertility of 2.1 children per woman as is often assumed in population projections.

3.   The key causes of stalling fertility are low levels of human development (education and health) and weak family planning programs, which lead to higher levels of wanted and unwanted fertility that are consistent with attainment of replacement level fertility.

To get a further insight into the phenomena of fertility stalls and their probable cause the following literature review deals with specific cases of the 'stall' in fertility of different counties of the world.

2.2 The 'baby boom' phenomenon

In most Western countries, birth rates, which had fallen to their lowest recorded levels during the world depression of the 1930's, rose slightly toward the end of the decade as nation after nation slowly recovered economically. Short-run fluctuations of the birth rate had occurred before in the course of the long decline in fertility. But to the surprise of most

demographers, birth rates continued to rise in several nations during World War II, and in the immediate post war period the entire Western world, with the exception of war- ravaged Germany, experienced a resurgence of fertility which carried birth rates to levels well above those of the 1930's. This phenomenon has been popularly called the 'baby boom'. Since it was the first clear cut reversal of the fertility trend since the decline of the birth rate which had begun in the nineteenth century, its long range significance has been widely debated. (Wrong, 1965)

In the 1930's there was widespread concern over the falling birth rate and this led many to make sweeping conclusions that modern society was by its very nature inimical to reproduction. Some writers passed equally broad judgments on the subsequent rise of the birth rate, proclaiming that it represents a departure from the small family system and a revival of the values associated with domestic life. Although the long decline of the birth rate earlier was primarily a result of a spreading preference for small planned families in the short run, other factors played a leading role in the baby boom. Although all Western nations experienced a postwar rise in current fertility, it was more pronounced in some countries than in others. In all of them it appeared to have been primarily due to higher rates of marriage, earlier ventures into both marriage and parenthood, and declines in childless and one-child marriages. However, in the United States, Canada, Australia, and New Zealand, and also to a lesser extent in the older western European nations of France and Finland, a trend towards slightly larger families among families with more than one child appears to have taken place.

If depression brings about the postponement of marriages and births, prosperity encourages both the making up of the postponed marriages and births of the preceding depression period and the moving ahead of marriages and births which might otherwise have occurred at a later date. Economic circumstances favourable to family building may also induce people who might otherwise have remained single to marry and people who might otherwise have remained childless to have children. All these things may happen in the absence of any trend towards an increase in the proportion of large families. Although an

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understanding of the precise nature of the link between economic conditions and fertility behaviour requires analysis of partially independent cultural and psychological factors, the broad generalization can be made that the post war baby boom in the West took place during a period of prosperity and increased economic security from which all groups benefited and this was at least a necessary condition for its occurrence.

The baby boom phenomenon in the United States of America

By the 1930's the spread of family limitation in the American population had reached the point where, on the average, women were bearing only a little more than two children – barely enough to replace the parents. This low point reached in the 1930's was a culmination of a decline in fertility that had lasted 130 years. Had the fertility rates of the 1930's continued until today, the growth of the American population would virtually have ceased. But fertility did not remain at the pre-war level, and the average size of the American family rose by more than 50% after the war. The recovery of the birth rate in the United States during the 1940's and the 1950's was not simply a reversal of the forces that had caused the birth rate to decline to its pre-war minimum. The post war *'baby boom'* was not a return to the family building habits of the 19th century America. (Bogue, 1959)

There were two reasons for it. First, among couples who consciously choose the number of children they have, a consensus developed in favour of moderate- size families instead of small ones. In the 1920's and the 1930's, couples with better education and higher incomes married late and had few children, but in the 1940's and the 1950's, young people generally married rather than remaining single, married at an earlier average age than did their parents, avoided childlessness, and rarely stopped with one child. Their preferences appear nearly evenly divided among two, three and four children. There seems to have been a change in attitude among the more prosperous, better educated segments of the population. The other reason for the great post war increase in births lay in the lack of effective limitation of family size among the underprivileged, relatively impoverished, and less educated Americans. There was an increase in fertility among the more deprived segments of the population, caused partly by earlier marriage and partly by a decline in sterility.

2.3 China's fertility stall

In the past three decades, China has experienced a remarkable fertility transition from a level of about six children per woman to less than two children per woman. Such an unprecedented transition in a very short period of time was to a significant extent, initiated by a government sponsored family planning program promoted under unfavorable economic and demographic conditions and this has enabled China to join the countries, mostly developed countries that have achieved below replacement fertility. An analysis of the fertility trends since 1949 however shows that there were distinct periods in China's demographic history when the decline in fertility stalled (Banister, 1987).

The fertility transition as such can be roughly divided into six phases.

1. *Initial high fertility period (1949-1957)*

The return of peace after the foundation of the People's Republic in 1949 led to a period of high fertility with declining mortality. The Crude Birth Rate was 32 (per 1000) and the Total Fertility Rate (TFR) Rate was six per woman. There was little urban-rural differential in fertility.

2. *The Great Leap Forward (1958-1961)*

During this period, mainly due to policy errors and a nationwide natural calamity, China experienced a large drop in fertility and a large number of excess deaths. The Crude Birth Rate dropped from 34 in 1957 to only 18 in 1961 while the TFR dropped from 6.2 to 3.3.

3. *Post famine Recovery (1962-1970)*

In this period, which can also be called as the "baby boom" period of China, the birth rate and the total fertility rate reached a peak in 1963, as high as 43 and 7.4 respectively because of compensatory childbearing after the big drop in 1958-1961. Urban-Rural differentials widened with fertility remaining high in rural areas and starting to decline in urban areas.

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4. *Rapid fertility decline (1971-1979)*

In this period the Chinese government introduced a national family planning program that promoted a policy of later birth, longer spacing and fewer births (Wan, Xi, Shao). The Total Fertility Rate declined sharply from 6 in 1970 to 2.8 in 1979.

5. *Stagnation period (1980-1989)*

In spite of the one child policy introduced in 1979 and various family planning campaigns, fertility decline slowed down after the rapid decline in 1970's. Both the CBR and TFR experienced significant fluctuations around a level of 20 per thousand and 2.5 children per woman.

6. *Below replacement level fertility period (1990 onwards)*

Fertility declined further and reached the below replacement level (2.1) around 1991 and fertility in the urban and rural areas started to converge.

2.4 Fertility stall in Malaysia

Malaysia's population has more than doubled over the past three decades growing from 7.4 million in 1957 to an estimated 18.4 million in 1991. After independence, and more particularly since the early 1970's the socio economic context of Peninsular Malaysia became more and more conducive to sustained fertility transition, that is, to a progression from high to low levels of fertility. Every socio economic measure of the welfare and well being of Malaysia's multi ethnic population continued to improve markedly. Despite the expectations, the downward trend in Malay fertility did not continue after the mid 1970's although the Chinese and Indian communities registered a decline during the same periods.

One factor is that Malays are still more agrarian and have not been subject to modernization to quite the same extent as have the above other communities. The more rural lifestyle of the Malays, support from extended family members, and economic subsidies lessen the economics costs of bearing and caring your children. However, these factors alone do not adequately explain the leveling of fertility, given the spread of education, economic and

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other welfare gains that have benefited the Malay community. It has been contended on the basis of a multivariate analysis of desired family size against several explanatory variables, that the new economic policy has had a pro- natalist effect on Malay fertility (Leete, 1996). However, the results from the study are open to the alternative argument that without benefits of the NEP, Malay fertility would have been higher than the currently prevailing.

Malay fertility trends have not neatly followed the so called "logic of socio economic development and the momentum of demographic transition". Explanations of changes in fertility, or lack of them, often need to go beyond economic causation, and can be more complex than suggested by demographic transition theory. Value systems, including cultures norms, that are less supportive of the notion of prevention of births or the spread of modern birth control methods, continue to have an important impact on Malay fertility. The Malays adhere strongly to the Islamic faith and around the mid 1970's, there was distinct Islamic resurgence in Malaysia. The spread of fundamentalism tended to reinforce and strengthen traditional values and perceptions about the role of women, as well as the actual social behaviors of women. The effects of the Islamic resurgence heightened Malay identity in a context of increased awareness and concern about the links between population size and political power. The movement was probably largely responsible for the observed decline in the use of modern contraceptives and the rise of traditional methods. From around the mid to the late 1970's, there was also widespread dissemination of the idea that resource rich Malaysia, with its relatively low population density, was under populated. The idea was expressed by the government in late 1982 and incorporated in the country's pro-natalist new population policy of 1984.

2.5 Fertility stall in Romania:

Between 1965 and 1975 the population of Romania rose some 11 percent, from 19 million to 21 million. While the death rate remained unchanged at 9 per 1000 population (1965 to 1974), the birth rate climbed by a third, from 15 to 20 per 1000, resulting in a 1.1 percent

annual rate of natural increase in 1974. Romania's population data fail to reveal the dramatic story of an abrupt, though short lived fertility change clearly wrought by government policy- a change probably unique in demographic history. (Watkins, 1986)

Following the example of Soviet Russia two years earlier, Romania adopted in 1957 what quickly became recognized as the world's most liberal abortion policy. Abortion solely at a woman's request in the first trimester of pregnancy became available on an outpatient basis at hospitals throughout the country. No bureaucratic procedures were involved, thus safeguarding secrecy, and costs were low. Despite some official efforts to encourage modern contraception, the number of abortions rose sharply, reaching a total of over one million in 1965, or four abortions per live birth.

Meanwhile, the birth rate dropped from 22.9 per 1000 population in 1957 to 14.3 in 1966. Alarmed at the implications for the country's future population and women's health, the Government reversed its abortion policy in October 1966. Legal abortion was restricted to cases involving risk to the mother's life or of fetal defects, rape, women over 45 (lowered to 40 in 1972) or supporting four children, and to cases involving an explicitly defined set of physical and mental conditions. Also, family allowances were increased, and lump sum payments were instituted for each birth beginning with the third child. Further a childlessness tax on persons aged over 25 was reintroduced, divorce was sharply curtailed, and official importation of pills and IUD's was discontinued.

The effect on the birth rate was immediate. From a low of 12.8 births per 1000 population in December 1966 (one month before the new law took effect), it tripled to 39.9 in September 1967. Thereafter, however, the rate receded slowly on an almost month to month basis. Legal abortions were reported to have dropped to 51,700 in 1967. Registered abortions then mounted again to 381,000 in 1972. Included in these totals was a disproportionate proportion of 'spontaneous' abortions treated in hospitals. This and a striking rise in maternal deaths associated with abortion suggested that illegal abortions contributed to the resumption of falling birth rates after 1967.

Thus the case of Romania is an example of how Government intervention may induce a rise in fertility or a decline.

2.6 Fertility stall and the 'Honecker Berg' in Germany

Births rates in the former German Democratic Republic (GDR) reveal some interesting patterns. From the early 1960's to 1990, the Total Fertility Rate, decreased from 2.5 to 1.4 children per woman. After about 1970 this rate was well below the level of 2.1 children, i.e., replacement level fertility. With respect to the two German states, both show a parallel tend in fertility until about 1974 and a divergence thereafter. While in the earlier phase both experienced rapid decline, in the second phase West German fertility stabilized at a low level, whereas the East experienced a pronounced but short lived upswing. The temporary upward trend in fertility in the second half of the 1970's followed the introduction of several measures under the family policy initiatives of the Honecker regime. The rise is often casually referred to as the 'Honecker Berg' or the Honecker mountain. The use of the term implies not only that the policy initiative preceded the upward trend, but that it contributes significantly to the change in the fertility behavior of East Germans. . (Conrad, Lecher, Werner, 1996)

Measures introduced in 1972 combined the liberalization of abortion and a wider availability of the contraceptives with a number of pro-natalist measures ranging from financial incentives for marriage and birth to the provision for the overwhelming majority of East German parents of cost - free day care for children older than one year. The impact of the Honecker regime is much debated. It seems clear from studies that young women did not increase their average number of children but only changed their timing of Births (Buttner and Lutz 1990). These differences between East and West Germany show that fertility is influenced by a number of individual and social factors. A pronounced difference between them lay in the childbearing age. The relatively early childbearing age of East Germen women finds ·a rational explanation in a system in which marriage and family

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formation were the most important steps for young people leading to independent lives away from parental households (Conrad, Lecher, Werner, 1996). In most cases, it was the only way to get an apartment in the state controlled system. Realistic chances of acquiring an apartment existed only for people with priority status which was earned through marriage, motherhood, or especially a combination of both.

2.7 Fertility stalls in Egypt and Bangladesh - a comparison

In countries like Bangladesh and Egypt after a persistent fall, fertility has leveled off above three births per woman in the 1990's. The finding raises the possibility that some countries may not continue their past rapid fertility transitions. Sajeda and Llyod (1998) in their study have tried to compare the experience of Bangladesh and Egypt. Comparison between the two show that women in both countries have little autonomy and only a small minority of women in either country work for cash. Nearly half of women in Bangladesh and Egypt have no education, although access to education for girls is improving in both the countries. But despite the poor situation of women in both these countries, a comparison of general socio – economic conditions suggests that Egypt should be further along in the demographic transition than Bangladesh.

Egypt is more urbanized, wealthier, with better educational attainment, and low mortality rates. Fertility trends in the two countries, however, do not mirror Egypt's relatively better socio economic situation. The current rural fertility of 4.2 children per women for Egypt compares with 3.4 in Bangladesh. Bangladeshi women, furthermore, typically get married much earlier than Egyptian women, which would tend to raise the fertility rate. Several factors account for Bangladesh's unexpectedly low levels of fertility; women in Bangladesh breastfeed for longer durations than do women in Egypt; ideal family size is lower in Bangladesh, suggesting a stronger motivation to control fertility and menstrual regulation is more readily available and contraceptive services offer a more varied method mix in Bangladesh than in Egypt. Different development styles may also account for some of the

factors that lower fertility in Bangladesh. Egypt follows a traditional approach of infrastructure development, whereas Bangladesh follows an approach focused on poverty alleviation that targets resources and services to the poor and to women. The difference in approach is probably most pronounced in the areas of family planning services and the availability of rural credit services.

In Bangladesh, development programmes have historically concentrated on improving women's access to services. To that end, female health care workers offer contraceptive methods and limited health services to women in their homes. The main thrust of service delivery in Egypt has been the distribution of contraceptives in family planning clinics by trained medical personnel. Beginning in the 1970's, nongovernmental organizations (NGO's) have played an increasingly important role in rural development in Bangladesh, whereas in Egypt their activities are small scale and highly localized. The four largest NGO's in Bangladesh are best known for providing credit to rural women. These credit plans, which generally involve community meetings and outreach services, contribute to the process of social change.

Notwithstanding the above stated, fertility in Bangladesh as well as Egypt has experienced a stall in their fertility declines.

2.8 Fertility stall in Post- revolutionary Iran:

Another particularly interesting demographic case is that of post-revolutionary Iran. There, a brief increase in period fertility after the 1979 revolution interrupted a trend of decline that had started in the 1950s. This increase in fertility led to speculation of a stall in Iran's demographic transition. The rise in fertility, however, appears to have lasted only a few years: in the late 1980s fertility decline resumed course at an even faster pace. The Total Fertility Rate (TFR) dropped by almost 30 percent from 6.2 in 1987 to 4.5 in 1995. This

rapid decline is very surprising when compared to other developing counties during their demographic transition, especially for an Islamic country.

The fertility increase in the aftermath of the revolution is generally understood to be a response to pro-natalist policies of the Islamic government. The leaders of the revolution, the Islamic clergy, expounded on virtues of a large family and, in particular, emphasized the role of women in society as mother and homemaker. Early marriages were strongly endorsed by the government and the legal age at marriage was lowered from 18 to nine. Furthermore, Iran officially discontinued the previous government's fertility control policy and contraceptive supply was severely restricted. Family planning Council was dissolved. Less than a year after the revolution the war with Iraq started, bringing with it additional pro-natal policies and statements from the leadership. War-induced rationing of a wide array of consumer goods provided additional incentives for larger families as the rations were based on family size. In additions to these measures that affected the costs and benefits of children, the revolution appears to have reduced the opportunity cost of time of parents, in particular women, thereby encouraging fertility. Women were discouraged from seeking formal employment, especially in the legal profession and upper-level government positions. Various other policies such as early retirement schemes and closure of day-care facilities were enacted to encourage women to stay at home. Labour force participation of women declined by 20 percent(Isfahani ; Tandon, 2000).

In the late 1980s, the government reversed its pro-natal policies. The 1986 census revealed a much larger population that had been expected. The implied annual growth rate was 3.9 percent. The end of the war reduced or even eliminated the need for rationing of consumer goods, hence reducing the benefits of having additional children. The parliament passed a new family planning law and, significantly legislation that barred the government from extending any subsides (for such things as education and health) beyond the third child. Rural fertility control was pursued with vigor using rural healthy centers to effectively implement population control (Abbasi- Shavazi, 2002).

2.9 Fertility dynamics in Israel and Nigeria

To understand the role of ethnicity and religion in determining fertility trends, the cases of Israel and Nigeria can be studied where the fertility decline stall has more to do with the ethnic makeup of the indigenous and immigrant populations rather than government backed policies and programmes.

In Israel, the dynamics of fertility patterns revolve around three major socio- demographic dimensions, religion, ethnicity and socio economic structure. Jews, Moslem Arabs, Christain Arabs, and Druze Arabs are the major ethno-religious groups. The second dimension is ethnicity among the Jewish population. Distinction is made between populations of European or American origins, and of Middle Eastern and North African origins. The Jewish population has grown and developed primarily as a result of extensive immigration during the twentieth century. Up to the foundation of the state in 1948, immigration was predominantly from European countries. Later migrants came from Moslem countries in the Middle East and North Africa plus Asian countries. These people created a Jewish society marked by different cultures, languages, and demographic regimes. Each of the two major Jewish ethnic groups contain a subgroup of orthodox population experiencing fertility levels over and above their group averages (Friedlander, 2000)

It was seen that among the three sub-groups of the Jewish population, the National and the Ultra-orthodox (of both ethnicities), and the Asian-African and the European-American non-religious groups, the two latter have completed their fertility transitions within 2-3 decades, the National –Orthodox has maintained its moderately high fertility, while the Ultra- orthodox population has increased its fertility over time.

The Arab population, ranks far lower on the socioeconomic scale than the Jews. There are not only large differences in human resources between them but even for those Arabs whose educational status is relatively high, entrance into higher status employment is difficult. This results in reduced motivations for the attainment of higher educational levels. The military

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administration ended in 1960's which increased social and economic interaction with the Jewish sector. Hence, agriculture, the main economic branch of the Moslem population at that time, started to modernize, associated with a rapid decline in the percentage of agriculturally based households. Also, interaction with the Jewish sector introduced new, more costly, consumption goods which could not be attained under conditions of high fertility. As such, TFR started to decline subsequently to reach a rate of 4.6 in mid 1980's, remaining at that level through 2000.

The non religious population of European and American origins. comprised 30 percent of the population during the 1970's and it has practiced relatively low fertility levels for over three quarters of a century, similar to Western populations. Hence, their total fertility declined to 2.5 in 1970's and to replacement levels towards the end of the 1990's.

The populations of Asian and African origins had migrated from less developed countries with both high fertility and high mortality. This group tended to assimilate quite rapidly into the mainstream population in various aspects and accepted modern education for their children which replaced the traditional religious education before immigration and also modernized their consumption behavior. Hence, the process of fertility decline started within this group soon after their arrival in Israel and was quite rapid, without government intervention and with relatively simple family planning means. The TFR which was 5-6 prior to immigration declined to just over 3 in the early 1970's and reached nearly replacement level.

The national and the Ultra orthodox Jewish Population: forms a large part of the Jewish religious population and has the highest fertility rates with TFR of around 7.0. This group has its own independent educational system, which is the key for its intergenerational survival within a very materialistic outer world. Education begins at an early age and students remain in the more advanced educational institutions (yeshiva) until their mid-thirties or forties. Marriages are arranged and take place at an early age. Couples are expected to have their first child within a short time following marriage, and high fertility is an encouraged norm. The major economic resource to support the same is the larger society of Israel through generous governmental child allowances, assistance in housing young religious couples, etc. Another important source is specific funds which are allocated to

families by their own community institutions. Hence, the socioeconomic structure of the Ultra-orthodox population, its internal educational system and its political power within Israel's society, are conducive to its survival as a high fertility group whose families conform to community norms of early universal marriage and high fertility. (Goldscheider, 1996).

An analysis of Israel's society thus brings to fore the characteristic heterogeneity and contrasts. The Ultra Orthodox population with high education levels and better socioeconomic status and yet with the highest fertility rates present a contradiction to the established studies. While most of the immigrant populations have managed to curb fertility levels at lower levels of development the former groups which supports the two major political parties, has held the balance of political power for most governments. Consequently, they succeeded in transforming political power into direct financial support for their independent educational system, securing generous child allowances for large families, for highly subsidized housing projects for young couples etc. It can be thus assumed that as long as these political realities persist in Israel's society, high fertility levels will be maintained.

In their study of Fertility transition in Nigeria, Feyisetan and Bankole (2002) note the start of decline in the fertility levels. This has been attributed to various causes. There has been a perceptible change in the desired fertility as the percentage of women with four living children who wanted to more children from 5.4 in 1981-82 to 16.9 in 1990, (an increase of about 300 percent) and to 22.6 in 1999 (an increase of over 400 percent). In decomposing the factors responsible for differences in fertility among sub-population groups, Feyisetan and Bankole (2002), found that marriage was the second most important factor. Although for the entire country, fertility inhibiting effect of marriage is 25 percent, the national value masks the large differences among the regions (45 percent in the Southwest, 41 percent in the South East, 9 percent in the North East and 8 percent in the Northeast), among educated groups and between rural and urban women.

Nigeria is composed of major ethnic groups that have struggled against one another for several years to control power at the center. With populations that have strong affiliation to their ethnic groups and with a return to party politics, numerical strength plays a crucial role in the determination of which group controls power at the center. As earlier indicated, the decline in fertility, observed at the national level, results mainly from the South, especially the Southwest. Fertility transition has always begun among some segments of the population from where it spread to others. Thus, ethnic communities in the south are not averse to the practices of population control, especially the women there can be regarded as demographic innovators. It is expected that the current transition which has begun, particularly in the Southwest, will spread to other parts of the country to accelerate the speed of decline.

But one cannot overlook the fact that politicians are likely to be conscious of the impact of the regional differences in fertility on the populations of their regions as well as the implications for their ability to have access to power at the center. Unless reduction in fertility becomes accelerated in other regions of the country and unless there is political reorientation or restructuring that engenders national as against sectional thinking, politicians, especially from the south, may formulate policies that reduce child-bearing cost in order to stall further declines in fertility. The possible impact of ethnic politics on the pace of decline is compounded by certain economic measures. Currently, population factor accounts for a significant component of the formula of revenue allocation to the states and by implication to the regions. The amount of national resources accruing to a region through the states and local governments depends partially on its population. As a major determinant of population growth, further declines in fertility may be stalled by regional government policies in order to ensure that the populations of their regions compare favourably with those of others.

2.10 Overview and Research Gaps

Analyzing the cause of fertility stalls, John Bongaarts suggests that such stalls occur when women who have delayed child bearing start having children. Fertility declines that proceed rapidly are in part the result of changes in the timings of childbearing. If childbearing delays come to an end you lose this effect and the decline pauses or halts. He has explained stalls in Taiwan and Colombia on the above basis. Thus many developing countries are now experiencing rapid fertility declines that are in part attributable to tempo changes. These changes have accelerated past fertility transitions, but they also make these countries vulnerable to future stalls in fertility when the delays in childbearing end.

These and various other studies worldwide have drawn attention to the fact that the fertility transition of many countries have slowed down the reasons being many. The review of the particular cases stated above covers only among the better known and thus is only a modest attempt to understand the underlying causes.The case studies have drawn on the experiences of both developed and developing countries and there in no one single reason for the stall. The various causes can be listed as follows:

Political – Governmental policies and programmes play a dominant role in deciding the course of fertility in a country. Pro- natalist policies like those of Sweden, France, Hungary, Romania and others are reflective of a populationist philosophy which equates power and prosperity with large numbers. The expansionist motivation in population policy reached a climax in Germany, Italy and Japan during the period between the two world wars.

Ethnicity – Religion and ethnicity are important factors affecting fertility. The study of differential fertility of various religions as well as ethnic groups has important social and political implications. In a democratic society where each person has the right of vote, the size of a particular religious, caste or ethnic group may be an important factor in determining the political power- structure. This has been clearly observed in the case of Israel, Nigeria and Malaysia where fertility decline has stalled due to the high fertility of

certain groups within the population. While in Israel it is the orthodox Jewish population with better educational and income levels which keeps the fertility high, in Malaysia it is the indigenous Malays who to increase their numbers vis-a-vis the migrant Chinese and Indians contribute to high fertility.

Economic – Economic development or the lack of it can lead to stalls in the fertility decline. Examples of where a period of prosperity propelled fertility rates to rise were well documented in the case of the baby boom observed after the World War II. In China, South Korea, Sri Lanka, Costa Rica etc. also a spurt in population growth occurred during periods of economic well being.

These could be stated as the broad reasons and they do not operate in isolation but several factors may operate simultaneously to cause a rise in fertility. The baby boom in United States can be explained by change in attitude of the people towards early marriage and preference for moderate sized families. But governmental intervention plays a dominant role in deciding the growth of population in a country. Some Governmental methods may benefit women more than others. As seen in the case of a comparative study of Bangladesh and Egypt, social trends, political climate and the strategy of development in the former created an environment that was more conducive to innovation and change. Delivery of family planning services to the home enhances the status of women over time, even though it might not be able challenge the more strongly rooted traditions like *purdah* or female seclusion (Amin, 1998). Thus governments need to focus not just on formulation of policies but care should be taken to deliver the same and it is particularly in this area that NGO sector can play a crucial role.

It has been seen that government policies play a crucial role in determining fertility trend. The benefit of strong government support is exemplified by the experience of the Family Planning Programme in the Islamic Republic of Iran. In addition to launching an official family planning programme in 1967, the Family Protection Act was passed, which gave

women greater equality in marriage and improved their status. Despite the suspension in 1979 of the pre-revolutionary family planning programme and the adoption of a pro-natalist approach, in 1989 a new Family planning programme was officially announced, with a major goal of preventing unwanted pregnancies in order for families to improve their physical health (Hoodfar and Assadpour, 2000), it was accompanied also by widespread efforts involving various government organizations, with the support of religious leaders and mass communication networks. Governments can also promote a pro-natalist policy like the Government of Japan has taken measures to create an environment in which men and women could combine marriage, child – rearing and work. In 1994, the Ministry of Health and Welfare established the "Angel Plan", which was designed to, through family policies , to create such an environment : providing support for simultaneous child rearing and work, support for child rearing at home, and reducing child rearing costs (Kandiah,2000).

In India a stall was observed in the post emergency period when the decline in fertility slowed down in all states. Although the case for the country as a whole has been well documented, a similar exercise for the states is not available. Keeping in mind the peculiar case of the state of Assam where the stall was sustained over a longer period of time it is perhaps necessary to look into the causes.

Chapter 3

Geographical Setting and Socio-Demographic Profile of Assam

Chapter 3

GEOGRAPHICAL SETTING AND SOCIO-DEMOGRAPHIC PROFILE OF ASSAM

Assam, an ethnic and cultural mosaic, carrying in its embrace *Ahoms, Bodos, Koch Rajbonshis, Santhals, Mishings, Dimasas, Kukis, Hmars, Zemis (Nagas), Karbis* and innumerable other smaller tribes with a significant presence of Bengalis, Biharis, Oriyas, Nepalis, is truly a miniature replica of India with several layers of identity, often superimposed one over other. This has resulted in absorption, fragmentation and contestation as to which group can stake its claim to distinct territories in the state. It also enhanced the levels of competition and confrontation between the original inhabitants, the immigrants, the colonizers and the conquerors.

3.1 Physical setting and historical background

The state is located in the north-eastern frontier of India. It lies between 21° 51' N to 27 ° 58' N latitude and 89 ° 49' to 97 ° 26'E longitude. It is bound by Bhutan and Tibet (China) in the north; on the north and north-east by the state of Arunachal Pradesh; on the east and south-east by the states of Nagaland and Manipur; on the south and south-west by the states of Mizoram, Tripura and Meghalaya; and in the west the state of West Bengal and Bangladesh. Assam covers an area of 78,438 sq.km, and has a population of 26,655,528 persons (India, Registrar General, 2004). Nearly 85 % of the state's population is classed as rural. Besides the dominant population group of the Assamese, the state has substantial population that has been termed as the Scheduled Tribe population. These constitute nearly 14% of the total population and are found distributed in all the districts of the state.

Generally speaking the acceptable interpretation of the term 'Assam' is its derivation from the Anglicized variation of 'Asom' – a name given to the valley by the Ahom rulers belonging to the Tai family, when they conquered the area in the thirteenth century. They were a people of Shan origin but later adopted Hinduism and the culture of the land. After about four centuries, the internecine power struggle and continuous pressure from the

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Burmese weakened the Ahom empire so much so that the Ahom rulers had to seek the help of the British East – India company to compel the Burmese to relinquish their claim on the Ahom territory. This resulted in first Burmese occupation and devastation of the Ahom territory, followed by the Anglo – Burmese wars and finally by the Treaty of Yandabo, through which the Burmese relinquished their claim on the area. It also established a strong foothold for the British to expand and annex the region with the rest of the Indian sub – continent in distinct phases. The British annexed Cachar in 1832, Jaintiya Hills in 1835 and Upper Assam in 1839. Immediately after the war in 1826, the Lower Assam was brought within the British East India Company's administrative control. The tribal intermediary territories and the east of the valley (the area occupied by the western Nagas) were supervised by Manipur (the separate status of Manipur was maintained after the 1826 war) till brought under British political and administrative control so that from the administration under the Agent to the Governor – General in 1832, this area came under the Chief Commissioner in 1874 (Gopalakrishnan, 1995).

With the partition plan of Bengal being approved in 1905, this area came to be included with the new province of East Bengal and Assam. However, with the annulment of the partition in 1911, the Chief Commissioner's status of Assam was restored. It was elevated to the Governor's province in 1921. During the partition, the district of Sylhet was ceded to East Pakistan (now Bangladesh). Dewangiri tract in the north Kamrup district was given back to Bhutan. These were followed by administrative re-organisations of the provinces, which started with the formation of the state of Nagaland (Naga Hills and Tuensang area district) in 1963, the state of Meghalaya in 1972 and the Union Territory of Mizoram in 1972 so that in 1980's, the original province of Assam was truncated to include only the Brahmaputra valley and the Barak valley (Cachar plains) with the hill districts of Karbi Anglong and North Cachar Hills. In a way, this reorganization gave recognition to major social formations in the region. Yet, there were still prominent formations in the truncated area that clamoured for separate status and it was in this area that major socio – political activities dominated all transactions, particularly from 1980's (Gopalakrishnan, 1995).

According to the records available, it is clear that Assam was historically divided into three distinct sectors of Kamrup or the western territory, the Namrup – the eastern territory and the area between the two – known as 'Gor or Godhagam' (Baruah,1986). Assam covered areas with diverse relief and multiplicity of people and economy, who were alternatively at peace and war with each other. The *Ahom* dominance of the area brought semblances of territorial stability and unity. They developed a clear pattern of relationships between the lowlands and the highlands that varied from friendliness to hostile responses. Later, with the British India's consolidation of the region, the patterns of traditional relationships were irreversibly transformed. The area was thrown open for commercial exploitation and was one of the areas of the country that was brought within the gambit of global trends and processes. The colonial administrators initially adopted the *Ahom* system of transactions and gradually began enforcing measures that highlighted the imperial priorities and objectives. Their phase – wise territorial expansions and the building up of infrastructural facilities created employment opportunities in the region.

This induced population movement from areas that already experienced colonial administration – the Delta region. The latter was a densely populated area with very high rural density. This population found the North East not only sparsely populated and well endowed with resources but also one that provided immense economic and employment opportunities. They filled up the personal requirement in the colonial administration of the area, they penetrated the interior and established trading and transit centers for collecting of raw materials. Expansion of commercial activities, opening of tea plantations, exploitation of timber and other forest products resulted in transportation and communication network. This, along with the under – populated character of the region provided the needed impetus for immigration to take place in a large scale. (Dasgupta, 2001)

The problem of immigrants has now assumed wider social, economic and political dimensions. Partly it has been responsible for the rise of militant activity in the state. The organization ULFA (United Liberation Front of Assam) was active in the 1980's and early 1990's. Besides this, other dominant minorities in the state, the plain tribals, particularly the Bodos had simultaneously launched their movement for the formation of a separate

Bodo state. All this culminated in the anti-foreigners movement launched in the 1970's in the state. At first there was a coalition but later, individual, group, and sub-group interests overrode all other considerations. But the fact remains that governments in Assam have been directing their efforts to resolving the various conflicts and as a result resolutions towards development have proceeded in fits and starts.

3.2 Comparative demographic profile of Assam and India:

The North Eastern zone of India is, culturally, a very heterogeneous area and markedly different from the mainstream of Indian culture both essentially and existentially. Therefore it is necessary to examine the patterns and problems of population growth in this zone.

Table: 3.1

Percent Intercensal increase of population, North Eastern India, 1901 -2001

	1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81	1981-91	1991-2001
Assam	16.99	20.51	19.93	20.41	19.92	34.98	34.76	36.11	12.73	18.81
Arunachal Pradesh	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	38.91	35.15	36.33	26.21
Manipur	21.71	10.92	16.04	14.92	12.80	35.04	37.53	32.46	29.29	30.02
Meghalaya	15.71	7.21	13.83	15.59	8.97	27.03	31.50	32.04	32.86	29.94
Mizoram	10.61	7.93	26.40	22.84	28.42	35.61	24.93	48.55	39.70	29.18
Nagaland	46.84	6.60	12.63	6.03	8.65	14.07	39.88	50.05	56.08	64.41
Tripura	32.05	32.62	25.63	34.13	24.56	78.71	36.28	31.92	34.30	15.74
INDIA	5.81	-0.31	11.04	14.23	13.31	21.60	24.84	24.81	23.86	21.34 ·

Source: Census: India , Registrar General 1993a

Census: India, Registrar General 2004

From the Table 3.1 it can be seen that other than Assam all the states of this zone had a faster population growth than the total population of the country and the state of Nagaland had the highest rate of growth of population in the country. Assam had a higher than average growth up to 1981, but the growth was lower in the last two decades.

Table 3.2

Population density, sex ratio and urbanization, North Eastern states, 2001

	Population (as % Of India's total Population)	Persons/sq.km	Sex ratio (females per 1000 males)	Percent of people living in urban areas
Arunachal Pradesh	0.11	13	893	20.8
Assam	2.60	340	935	12.9
Manipur	0.23	107	978	23.8
Meghalaya	0.22	103	972	19.6
Mizoram	0.09	42	935	49.6
Nagaland	0.19	120	900	17.2
Tripura	0.31	305	948	17.1
India	100	324	933	27.8

Source: Census: India, Registrar General, 2004

North Eastern states together have an area of 255028 sq.km, constituting 8 % of the total area of the country and is the home of nearly 5 % of India's population. The broad density pattern of the region reveals very low density of population in all the constituent states except Assam and Tripura. Arunachal the largest state, in north east supports the lowest share of population. In fact, Assam and Tripura together account for about 85 % of the region's aggregate population. The primary reason behind this uneven spatial distribution of population lies in the fact that the plains and valleys offer more congenial conditions for absorption of large influx of population than the hills and difficult terrains, which have fostered virtually isolated existence of tribal communities. Besides, existing economic factors, which vary within the region also account for the uneven population density.

Assam is the eighth most densely populated state in the country after West Bengal, Bihar, Kerala, Uttar Pradesh, Punjab, Tamil Nadu and Haryana. The broad density pattern of the region shows the important high density areas forming a compact tract along the Brahmaputra Valley and stretching horizontally from Goalpara in the west to Dibrugarh in the East. This fairly long stretch of area is almost sandwiched by the low density areas of Arunachal Pradesh in the north and Meghalaya, Nagaland, Manipur and Mizoram in the south with some intercepting exceptions of a few high density pockets of Central Manipur, Cachar and Tripura. Another important factor is the migration causing higher densities in Assam and Tripura in particular.

Sex ratio is an important indicator of population structure. Among the states of North East, it is the highest in Manipur followed by Meghalaya, Tripura and Mizoram while other states are lying below the national level of 933 females per 1000 males in the total population.

Dutta (1998) observed that urban population significantly affected the literacy rate and per capita net domestic product. The urbanization level varies from 12.9 % in Assam to 50% in Mizoram. It is generally seen that the urbanization in India is structurally imbalanced and is going to maintain the same trend unless there is a policy intervention to reorient the urbanization in favour of small and medium size towns along with metropolitian decentralization.

3.2.1. Population Trends in Assam and India

The proportion of Assam's population as a percent of All India has been consistently increasing since 1901 reaching the highest in 1981 (2.91 %). Thereafter there has been a gradual decline to 2.66 % in 1991 and 2.59 % in 2001 (Table 3.3). The phenomenal growth of population in the period immediately after 1951 can be attributed to the large scale migration from neighbouring Bangladesh and Nepal. This was coupled with heavy inflow of population from the rest of India for working in private and public industrial concerns

like Oil Refinery at Guwahati, Oil India Limited at Duliajan Oil Exploration by O.N.G.C in Upper Assam, Petro – chemical complexes at Namrup and Bongaigaon etc.

Table 3.3

Population Trends in India and Assam, 1901-2001

Year	India's population (000's	Assam's population (000	Percent of India's population
1901	238396	3290	1.38
1911	252093	3849	1.52
1921	251239	4637	1.85
1931	278867	5561	1.99
1941	318539	6694	2.10
1951	360950	8029	2.22
1961	439072	10837	2.67
1971	547949	14625	2.67
1981	683329	19896	2.91
1991	843930	22414	2.66
2001	1027015	26638	2.59

Note   : 1981 figures for Assam are Projected figure.
Source: India, Registrar General (1993a, 2004)

Assam records a consistently higher decadal growth of population since 1901 and this confirms the fact that migration into the region is not an issue of the present but has been taking place for a long time (Table 3.4). The settlement which was encouraged in the beginning and was treated as internal transfer of population between the East Bengal districts of Mymensingh, Rangpur, Bogra, and Pabna into the Assam valley upto the partition and independence of the country, became a trend, which once set could not be stopped, and continues even now although with lesser intensity.

Table 3.4

Decadal percentage variation in population, Assam and India, 1901-2001

Year	Assam	India	excess	Year	Assam	India	excess
1901-11	16.99	5.81	+11.18	1951-61	34.98	21.60	+13.38
1911-21	20..51	-0.31	+20.82	1961-71	34.76	24.84	+9.92
1921-31	19.93	11.04	+8.98	1971-81	36.11	24.81	+11.30
1931-41	20.41	14.23	+6.18	1981-91	12.73	23.86	-11.13
1941-51	19.92	13.31	+6.61	1991-2001	18.81	21.84	-3.03

Note: 1981 figures for Assam is the projected population as Census could not be held

Source: India, Registrar General (1993a, 2004)

The first wave of immigrants prior to 1901 was associated with the introduction of plantation industry when the British brought labourers from outside. The second wave of settlers during the decades 1901-11 to 1921-31 came as agricultural labourers from across the provincial boundary of Assam who succeeded in occupying some of the land available for cultivation. By 1921, 20 percent inhabitants of Goalpara and 14 percent of Nowgong constituted of these immigrants .The third wave was associated with the Nepalis who came in connection with the World war and subsequently took up animal husbandry and chose hill slopes for habitation. The fourth wave is associated with communal disharmony in East Bengal in the late 1940's, partition of the country and its after effects. Unlike in the western sector, post-partition influx of Hindu refugees continued here for a long time and the peak period was 1951-1961 (Kar, 1990). Those who were non - refugees also immigrated and the net result was higher net migration and higher growth rate. The fifth wave was associated with the Bangladesh liberation movement and this ultimately culminated in the launch of the Assam agitation.

During 1981-91 and 1991-2001, Assam shows much lower decadal growth of population than any of the previous decades as the problem of immigration was politically highlighted and though cross border migration still continued it was of a lesser intensity.

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Table 3.5

Three year moving average of Birth rate, Assam and India

	Assam	India
1981-83	34.0	33.8
1991-93	30.4	29.1
1995-97	28.4	27.7

Source : India, Registrar General, 1999

Notwithstanding the fact that high rate of variation of population is due to large scale influx of foreign nationals and immigration from the rest of India, it is to be noted that the birth rate in Assam has also been marginally higher than the all India average since three decades (Table 3.5). This gap in birth rate has registered a rise in the period 1991 –1993 and in 1998-2000.

Table 3.6

Estimated age specific fertility rates, India and Assam , 1998

	15- 19	20-24	24-29	30-34	35-39	40-44	45-49
Assam	53.7	180.5	182.6	123.1	70.3	26	6.5
India	54	220.3	182.8	104.2	54.3	25	9.0

Source : India: Department of Family Welfare, 2003

The age specific fertility rate corresponds more or less to the all India pattern in the age groups 15-19 and 24-29 years. While for age groups 30-34 and above the fertility rates are higher than that of India (table 3.6)

3.3 Comparative socio –economic profile of Assam and India

A broad comparison is attempted here of the socio – economic indicators of Assam and India. This has been done taking into account literacy, health and poverty characteristics, economy and infrastructure, status of women and the composition of public spending.

Table 3.7

Literacy and Schooling Characteristics, Assam and India

	Assam	India
Literacy (in percent) 2001*	63.3	64.8
Female literacy 2001*	54.6	53.6
Male literacy 2001*	71.3	75.2
Gross enrolment ratio(classes I-V)2000 **	116.1	95.7
Pupil teacher ratio 1998#	21.0	29.0
Dropout rate 1998#	76.0	67.4

Source: * Census: India, Registrar General, 2002

       ** India, Department of Education, 2001

       # India, Department of Education, 1999

The positive correlation between literacy and fertility has been proved through many studies and it has been well documented how educated parents are better equipped at childcare. Well - informed and literate public also strive to limit their family size and hence help to curb population growth. The literacy rate for Assam more or less corresponds to that of all India level and the levels of pupil teacher ratio are in fact better than the latter. But the state has a higher percentage of students dropping out of schools than the all India average

However Assam fares better in female literacy and the gender disparity in literacy level for the state is 16.7 while for India it is 21.6 (Table 3.7). Female literacy has a positive influence on enrolment of children, population growth, childcare and acceptance of family welfare measures.

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Table 3.8

Economy, Assam and India

	Assam	India
GDP growth(% per annum)1993-94 to 1999-00*	2.7	6.7
Per capita electricity consumption, 1996-97'	104	334
Per capita consumption expenditure 1999-2000@	473.42	590.98
Work Participation Rate (Percent) **	35.8	39.1
Unemployment Rate 1999-00*	8.03	7.32

Source : * Government of India, 2003

' India, Planning Commission, 1998

@ India: Planning Commission, 2002

** India, Registrar General, 2004

In general the economy and infrastructure of the state is seen to be in a poor condition as compared to India (Table 3.8). Despite being rich in resources like oil, minerals like coal and tea plantations the economic indicators fail to reflect development. Agriculture and allied activities is the chief source of livelihood but agricultural productivity as measured through per capita foodgrains production is much lower than the national average. Thanks to tea plantation, there is a sizeable commercial cultivation covering about 12.34% of the land area and nearly 52% of tea garden area of India is located in Assam. (Dutta, 2002)

A striking feature of the region's economy is the high percentage of employment in the government sector, which accounts for the bulk of the non-development expenditure (Dutta, 1994). Insurgency has created an atmosphere in which financial accountability and internal resource mobilization have become the main casualties and to an extent insurgency has vitiated the true logic of development.

Table 3.9

Health and poverty Characteristics, Assam and India

	Assam	India
Male life expectancy 1996-2001*	57.34	62.36
Female life expectancy 1996-2001*	58.84	63.39
Infant mortality rate (per 1000 live births) 1999*	76	70
Maternal Mortality Ratio(per 100000 live births)1997*	401	408
Persons below poverty line 1999-2000(%)[#]	36.09	26.10
Primary health centres1996[#]	619	21853
Health sub centres 1996[#]	5280	132778
Community Health Centres 1996[#]	105	2420

Source: * India, Department of Family Welfare, 2003

** India: Registrar General, 1999

[#] Government of India, 2003

Health is a social goal and considered an integral component in overall socio-economic development. To reduce development exclusively to growth in the economy is to forget that it is of at least equal importance to give to each human being the opportunity for self development, that is, to progress as far as possible in accordance with his biological and cultural heritage.

The majority of the health problems are products of illiteracy, poverty, ignorance, overcrowding, poor environmental conditions and uneven distribution of health, manpower and institutions. The health and poverty characteristics indicate levels much below the national average (Table 3.9). Although the Maternal Mortality Ratio (MMR) corresponds to the All India average, the high Infant Mortality Rate (IMR) and high proportion of people below the poverty level combine has been seen empirically to push up levels of fertility.

Table 3.10

Autonomy of ever married women age 15-49, Assam and India, NFHS;1998-99

	Assam	India
Percent who listen to radio at least once a week	40.8	36.5
Percent who are self-employed	4.5	5.0
Percent involved in decision making on own health care	65.1	51.6
Percent not involved in any decision making	4.6	9.4
Percent beaten or physically mistreated since age 15	15.5	21.0
Percent beaten or physically mistreated by in -laws	0.8	1.8

Source; International Institute of Population Sciences and ORC Macro, 2000

In Assam and the North East in general women enjoy a better status and are often at par with their male counterparts in all spheres of daily activity. Societies such as the *Khasi* in Meghalaya are matriarchial in nature. Education, work participation, and exposure to mass media are some of the means by which women gain status and autonomy, both important aspects of empowerment

A higher percentage of women are exposed to the outside world through radio in Assam than in India as a whole. As can be seen from Table 3.10 that the level of female literacy is higher than that of the all India level literacy and the gender disparity in literacy level for the state is 15.9 while for India it is 21.6. The custom of dowry and its associated social problems are diluted in this region as compared to most other North Indian states such as Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and as such the incidence of domestic violence against women in Assam is also less than the all India level. The status a women is accorded in society has a significant impact on the demographic and health seeking behaviour of couples by altering women's relative control over fertility and contraceptive use, and by influencing their attitudes and abilities.

The first ever National Human Development Report (NHDR) brought out by the Planning Commission has estimated the value of Human Development Index (HDI) for the 32 States and the Union Territories in the country for the years 1981, 1991 and 2001.

Table3.11

Human Development Index, 1981, 1991 and 2001

	1991	1981	2001
	Value	Value	Value
Kerala	0.500	0.591	0.638
Assam	0.272	0.348	0.386
India	0.302	0.381	0.472

Source : Government of India, 2003

The HDI is a composite of variables capturing the attainments in three dimensions of human development viz, economic, education, and health. The HDI for the country as a whole has improved from 0.302 in 1981 to 0.472 in 2001 and Assam shows a gradual improvement since 1981 (Fig. 3.11)

Thus it can be surmised that the state has made considerable progress in the last few years. In the light of the socio – economic characteristics of Assam vis-à-vis India, fertility in this region however should show a greatly complex dynamics. There are certain opposing factors at work on the level of reproduction.

(a)   Moderately high levels of literacy and high status of women which should increase the rate at which the practice of birth – control diffuses in the larger society and

(b)   The low degree of economic development, poor health and poverty, which obstruct this movement.

3.4 The immigration issue and its socio-political implications:

The problem of immigration and its associated consequences are not of recent origin. These were aided by the geographical and historical developments in the Gangetic plains, the oppressive feudal system of the nineteenth century Bengal, colonial consolidation, commercial exploitation and the presence of vast under populated and virgin tracts in the region.

3.4.1. Pre-independence Migration Trends

In 1821, the British government took steps to convert the steamy verdant hills into rich tea plantations. Since 1826, there had been a regular flow of non-Assamese into Assam. In order to run the imperialist administration, clerks and officers familiar with the system of company administration were brought by the British from outside the province, particularly from Bengal. This led to an influx of educated Bengali Hindus into positions in the administrative services and in the professions. The British dismantled the Ahom ruling structure, made Bengali the official language, and recruited Bengali Hindus to run the administrative services. The 1891 census estimated that one-fourth of the population of the Brahmaputra valley was of migrant origin. The largest influx took place in 1900 when Bengali Muslims moved in from East Bengal. As Assam's link to the rest of India grew, other migrants moved there as traders, merchants, bankers, moneylenders and small industrialists (Weiner, 1983). The Marwari traders and Assamese *Mahajans* of Barpeta financed the immigrants substantially in order to reclaim lands and expand the cultivation of jute, rice, pulses and vegetables. This rapid growth in population forced the Census Administrator in 1931 to accept the fact that within a span of thirty years, the original population of the valley will be confined to the Sibsagar region.

These led to adoption of measures to restrict the flow. However, these measures were either neutralized by vested interest groups or by statist considerations. The 'LINE SYSTEM' was mooted in 1916 and adhered to by the British with modifications. It was a novel scheme to segregate areas where new immigrants could settle from those which were declared the exclusive preserve of the Assamese by drawing imaginary lines. While in most

cases whole villages were reserved for the settlers or the locals, there were a number of common villages where imaginary lines cut across the settlements. But the policy failed to please either of the affected parties (Kotwal, 2001).

3.4.2. The Communal Factor

The issue of migration also acquired a communal dimension thereafter. In the pre-partition period, both Hindus and Muslims entered the state, but the influx of Muslims was much higher. The total number of Muslims in Brahmaputra valley in 1941 was 16,96,978 against the total Hindu population of 32,22,377 and about 87% of the population in Surma valley were migrant Bengalis. In Goalpara till 1901 the annual population growth was 1.4 % to 2 % and this suddenly jumped to about 30 % in 1910. In Barpeta subdivision, the percentage of immigrant Muslims increased from 0.1 % in 1911 to 49 % in 1941. the succeeding Censal periods saw this immigrant population spread as far as the areas of Darrang and North Lakhimpur (Kar, 1990).

In 1942 Chief Minister Saadulla announced a new resolution on the land settlement under the slogan "GROW MORE FOOD" and many pending evictions were stayed. It was widely regarded as a Muslim League ploy to allow more Muslims to settle in Assam. (Kotwal,2001)

The increasing Muslim population owing to the encouragement given to immigration by the Muslim leaders and Saadulla, led the Assamese to retaliate. Gopinath Bordoloi, leader of the Assam Pradesh Congress and head of the Assamese nationalist camp dominated by upper caste Hindus, decided to implement earlier government resolutions to evict migrants from forest reserves and other places where they had no business to be. Lakhs were turned out and the Assamese achieved this by endeavouring to

• reduce the Muslim population by deporting immigrants, and

• push the pre-dominantly Muslim district of Sylhet out of Assam to further reduce the Muslim population.

The referendum in Sylhet was held on July 6 and 7, 1947 and it opted for Pakistan. As the Assamese leadership discreetly rejoiced, Maulana Bhasani, the influential leader of the valley's Muslim migrants announced a directive to his followers, which had a far reaching effect on the demographic politics of Assam, and which is followed to this day. The Maulana, bitter at the desertion by the central leadership of the All India Muslim League, directed his followers to accept Assamese as their mother tongue, and to assimilate into the indigenous population of Assam. The Assamese middle classes, who were more wary of Hindu Bengali Babus than of the lowly Muslim peasants, accepted this overture, much to the chagrin of the Hindu Bengalis.

The community wise percentage of growth in Assam as compared to All India figures further strengthens the argument of large- scale migration of Muslims to Assam. It has been facilitated at the local level by vested interests. Politicians are willing to regularize matters by arranging ration cards or other certification, or by securing electoral registration to create potential vote banks. As a result of massive influx of illegal migrants, the Muslims have become majority groups in Dhubri (70.46%), Barpeta (56.07%), Goalpara (50.18%), and Hailakandi (35.42%).

3.4.3. Post –independence Migration: Bangladesh Connection

That there has been a very high number of illegal migrations from Bangladesh can be testified by the fact that :

- Assam's population has grown nearly six fold since 1901 when it had a population of 3.3 million; India's population has grown less than threefold over the same period. Had Assam's population increased at the same rate as the rest of India from 1901 to 1981, her population would have been 9.5 million rather than 19.9 million, a difference of 10.4 million. Since there is no evidence that Assam's rate of increase was significantly different than in the rest of India, the difference can only be accounted for by net in migration (Weiner,1983).

- Large increase in Assam's population registered during the inter – census period 1951 to 1961 is cited as proof of the magnitude of the influx.

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3.4.4. Linguistic nationalism:

Perhaps what characterized the migration was that it acted as catalyst for social, political and ecological transformation of the valley. The elements that assumed significance in the valley landscape were,

• Immigrants from Bangladesh who moved from the adjoining districts of Mymensingh, and Sylhet, to the valley districts of Goalpara, Darrang, Kamrup, Nagaon and Cachar; and

• Grazers from Nepal who spread themselves across the valley and the hilly peripheries. This was besides those ex-servicemen who settled down in the valley.

The native inhabitants were overshadowed in all aspects of transactions and as such their development came to be restricted. One of the issues that was interpreted in several ways was how the mother tongue of the population could now be ascertained. This gave a twist to the already complex problem. The genesis can be traced to 1836 when the suggestion of the immigrants to introduce Bengali as the official language was accepted by the administration. The consequent opposition to it by the rising Assamese middle class in 1874, made the administration to re – introduce Assamese as the official language. After independence, the language issue became the focus of the problems that was interpreted in as many ways as the dimension suggested. These were also translated in practice and was evident from the following-

a)   Linguistic problem during the 1951 Census;

b)   Linguistic problem during the 1961 Census;

c)   Linguistic problem during the 1971 Census; and

d)   Linguistic problem during the 1981 Census, which started in 1979 as revision of electoral rolls and culminated as Anti- Foreigner's issue.

The disturbances started in 1951 with the initiation of the process of Census enumeration; the second with the Assamese Language Act of 1960, when the population of the hill and mountain section protested against the imposition of Assamese which was made the medium of instruction in the educational institutions in the state; the third, saw the

administrative re – organization of the state and became truncated to include the Brahmaputra and Barak valleys along with the hill districts of Karbi Anglong and North Cachar Hills: and the fourth coincided with the large scale mobilization of the population against the electoral list (Gopalakrishnan, 1995).

The spectrum of the problem forms a continuum of social and political relationships that are clearly discernible but not separated from each other. Operating in the same plane, this continuum represents various forms of transition. It is a dynamic process of interaction between the indigenous population, immigrants and the political process over the geo – historic mosaic. The insurgency problem in Assam and the problem of illegal migrants are closely interlinked. If one closely observes the pre – independence protests of the Assamese against the hordes of the migrants, one could draw a conclusion that the Assamese had long ago stopped welcoming the Bengalis from East Bengal. Such protests subsequently turned violent in the Eighties and the illegal migrant issue is deeply ingrained in the Assamese psyche. A phase wise analysis is done here to get a broader insight into the problem.

Beginning of the period of unrest: 1979

The years since 1979 saw governmental instability, sustained civil disobedience campaigns, and some of the worst ethnic violence in the history of post-independence India including the killing of 3000 people during the February 1983 elections. The political turmoil began in the fall of 1979 when the All Assam Students Union (AASU) and the Assam Gana Sangram Parishad (AGSP), an ad hoc coalition of a few regional political and cultural organizations, sponsored a campaign drawing attention to the problem of illegal immigration into the state, mostly from Bangladesh. Relying on census data and electoral rolls that showed significantly higher rates of growth of population and of voters in Assam compared to that in the rest of the country, the movement leaders demanded that the central government take steps to identify, disenfranchise, and deport illegal aliens.

The Janata ministry headed by Golap Borbora collapsed in September 1979, and the ramshackle coalition ministry that came to power, headed by Jogen Hazarika and consisting of factions of the erstwhile Janata Party, fell within three months. President's rule was imposed in December, when a Congress (I) government came to power. That inaugurated a new phase in the state's politics (Baruah, 1986).

Rise of militant insurgency: 1980-83

The United Liberation Front of Asom (ULFA) was founded in 1979 around the same time as the beginning of the 'Assam movement'. Its professed aim was to liberate Assamese people from the shackles of Indian imperialism. ULFA put forward two arguments: Assam was not a part of India at any point of time and the Indian government has been exploiting Assam's rich and natural resources since the time of the British Raj without conferring corresponding benefits to the Assamese people. The inauguration of a Congress (I) government led by an Assamese Muslim, Anwara Taimur, in December 1980 marked a new phase in the Assam movement. The Taimur government, formed as a result of defections to the Congress (I) from other parties survived for only six months. President's rule was then imposed once again in June 1981. In January 1982 a new Congress (I) government led by Keshab Gogoi came to power, but survived only two months. What marked a turning point in the rise of the ULFA were the violent Assembly elections of 1983 and the formation of the Hiteswar Saikia government. It began to mobilize public opinion through a programme of 'armed propaganda'. This was the period when the group made the most significant inroads.

Saikia government: 1983-1985

The Saikia government headed by an ethnic Assamese who was an *Ahom* by caste, brought about some stability in the state although for a short while. The Saikia government tried to compete for legitimacy with the Assam movement by emphasizing that the government, led by an ethnic Assamese, was serious about stopping future immigration and about removing the names of post-1971 illegal aliens from the electoral rolls, on which there was agreement between the movement leaders and the central government. Other measures aimed at

redefining the policy agenda in order to wean support away from the movement included the carving out of new administrative districts and sub-divisions, and symbolic concessions to Assamese city from the Anglicized Gauhati to the more Assamese Guwahati. The measures, however, failed to cut into the movement's popular base and the sponsors of the movement refused to extend 'recognition' to the Saikia government. The non recognition was effective enough that when the central government decided to return to the negotiating table in the spring of 1984, it carefully left out the Saikia government. The agreement to dissolve the state Assembly when the Assam accord was signed was a concession to the movement's continued power capability.

Assam Accord of 1985 and the AGP government: 1985-1990

After 18 months, negotiations between the government of India and the movement leaders were initiated once again in April 1984. an accord was signed between Prime Minister Rajiv Gandhi and the leaders of the Assam movement on August 15, 1985, India's Independence day. According to the accord, illegal aliens who entered the state between January 1966 and March 1971 will be disenfranchised for ten years and those who came after March 1971 will be deported. After the signing of the accord, two new parties emerged: the Asom Gana Parishad (AGP), formed by the student leaders of the Assam movement, and the United Minorities Front (UMF), formed by the major East Bengali Hindu and Muslim politicians who had been members of the Congress (I).

The AGP came to power on a wave of popular support that was remarkably inclusive and gave hope to the people of a new era of prosperity and stability. Most of the ULFA leaders had known the AGP ministers since the agitation days. The problems of the AGP was compounded with the rise of ULFA, which had started controlling state administration. The Chief Minister was aware of the activities of the ULFA cadres in 1988 but made no efforts to check them. The AGP government failed to deliver and lack of progress egged the All Bodo Students Union to intensify their struggle for Bodoland. Many ascribe the rise of the ULFA to the 'misrule' of the AGP government (1985-1990). The law and order situation deteriorated and forced the center to intervene when finally President's rule was imposed in 1990.

Post 1990:

On November 28, 1990, Operation Bajrang was launched by the army. Though elections to the State Legislative Assembly were held within six months, and a Congress government was installed, the army stayed on. By 1992, the ULFA was on the run, with many cadres, including scores of district level leaders and a few central committee members surrendering before the government. In the immediate aftermath of the 1992 surrenders, ULFA appeared to be a spent force. It regained strength, however, to become a force to reckon with after a downswing that lasted no more than a couple of years. It had been forced to abandon its previous high-profile 'social-reform' activities, but yet continuously engaged the security forces, primarily through hit and run tactics. The romantic fascination for the secessionist insurgency has all but evaporated. The quelling of the secessionist tendency by security forces, at times with brute force, has resulted in a sullen silence. Furthermore, terrorist actions by ULFA have led to a further erosion of its already emancipated support base.

Till the change in the state government in spring 2001, three years of lethal counter insurgency operations had made a mess of ULFA's organizational structure and confidence. The Bodo insurgency and the spreading tentacles of the NSCN (M) have encouraged a recrudescence of ULFA activity of late especially in areas adjacent to Bhutan. The final blow was however the recent flushing out of militants from their hiding in neighbouring Bhutan (Saikia,2001).

A comparison of the demographic, social and economic aspects of the state vis-a-vis that of India has been done here. Although the state has improved considerably since past levels yet it is not enough to match the national average. In terms of economic characteristics the performance of the state is rather dismal and this is indicative of the fact that the productivity and efficiency in the region is not encouraging compared to the rest of India. However, human resources in Assam are not at all inferior to others with literacy almost at par with India and better levels of women empowerment and autonomy. Thus it can be seen that through the ages Assam has been a melting pot of migrant cultures. This forested expanse at the base of the Eastern Himalayas, well watered and fertile when the trees were

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felled, provided an ideal ground for rulers and peasantry alike to sink roots (Dasgupta, 2000). While the region continued to develop with the development of tea plantations by the colonial British rulers and subsequent discovery of oil, the inflow of migrants continued and effected a substantial ethnic redistribution where the migrant became a visible element in Assam's population. Since then migration has become an issue in the state and has dominated every aspect of its existence and being.

The North East region; 'the land of seven sisters' is a morass of economic backwardness- it certainly does not deserve to be so, Pandit Nehru stated during the debate on the First Five Year Plan. Assam is a richly endowed state full of natural resources be it water resource, mineral resource or natural resource, yet she has lagged behind in development. The economic backwardness of the region owes partly to its geographical and economic isolation from the rest of the country but the disturbed conditions brought about by militant insurgency and political upheaval have also contributed to keeping the region poor. It is in this light that compels one to ponder, keeping in mind the stall in fertility that the state experienced during the decade of the 1980's, whether the level of development was commensurate with the existing fertility. Since the period also coincides with the period of the Assam agitation and rise of insurgent activities, it is also of importance to analyze the role the latter might have played in affecting the fertility levels in the state.

Chapter 4

Fertility Trends in Assam and India

CHAPTER 4

FERTILITY TRENDS IN INDIA AND ASSAM

India with a population of one billion in 2000 – is one of the countries in the core stage of the fertility transition. In 1952, India became the first country to launch a Family Planning Programme, as an integral part of its socio – economic development. Since then the Indian Family Planning Programme has grown steadily in coverage and extant throughout the length and breadth of the country. The Family Planning Programme started with a very cautious approach. The First Five Year Plan emphasized field research with a view to identifying values norms, customs and beliefs concerning child bearing. The natural method of family planning (The Rhythm Method) was considered to be the most appropriate for the Indian masses, and this method was propagated. Prior to 1960, however, fertility in India continued to be relatively high and remained virtually constant. Various estimates for the period 1951-1960 indicate that the average birth rate in India during the decade was in the neighbourhood of 45 per thousand.

From 1961-1970, however, a dent was made in the national birth rate. In 1963 , a report of historic importance highlighted the need to strengthen the extension approach to bring about changes in the knowledge , attitudes and behaviour of the people in regard to family planning (Bhende and Kanitkar, 1978). In the extension approach, influential formal and informal leaders in different sub-groups of the population are first identified and then encouraged to gain knowledge and to take interest in popularising the acceptance of the small family size norm among their own group. This approach called for actively working with the people for whom the programme was meant rather than working for them as outsiders. This was followed by the integrated approach which laid emphasis on the integration of family planning services with maternal and child health work or with centers which provide medical aid welfare services. The rationale for such an integration was that when infant and child mortality rates are high, as in India, parents cannot be expected to limit the size of their families unless they have some confidence that the children they already have will survive to adulthood. Such confidence can be created only by providing

preventive and curative medical services for children. Once this dent was made the birth rate began to decline progressively up to 1977 (33.0) which was also the year when the Community Health Workers Scheme was introduced in selected primary health centers. The preceding years i.e. 1975-76 was also the period of emergency during which the ruling government envisaged a series of fundamental measures to check population growth which included the permission to state legislatures to enact legislation for compulsory sterilization.

4.1 Fertility Trends as per Sample Registration System (SRS)

An analysis of Crude Birth Rate for Assam and India has been done from 1971 to 2001 to assess the fertility trends in both and make comparison.

Table 4.1

Crude Birth Rate of Assam and India, Sample Registration System Estimates, 1971- 2001

Year	Assam	India	Year	Assam	India
1971	38.5	36.9	1987	34.2	32.2
1972	36.4	36.6	1988	32.9	31.5
1973	33.3	34.6	1989	29.4	30.6
1974	32.8	34.5	1990	29.7	30.2
1975	30.1	35.2	1991	30.9	29.5
1976	32.8	34.4	1992	30.8	29.2
1977	30.1	33.0	1993	29.5	28.7
1978	30.8	33.3	1994	30.8	28.7
1979	33.8	33.1	1995	29.3	28.3
1980	31.9	33.3	1996	27.6	27.5
1981	33.0	33.9	1997	28.2	27.2
1982	34.2	33.8	1998	27.9	26.5
1983	34.7	33.7	1999	27.0	26.0
1984	35.3	33.9	2000	26.9	25.8
1985	34.3	32.9	2001	26.8	25.4
1986	34.7	32.6	-	-	-

Source: India, Registrar General, 1999

India, Registrar General, 2001

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Fig.4.1

FERTILITY TRENDS IN ASSAM AND INDIA(1971-2001)
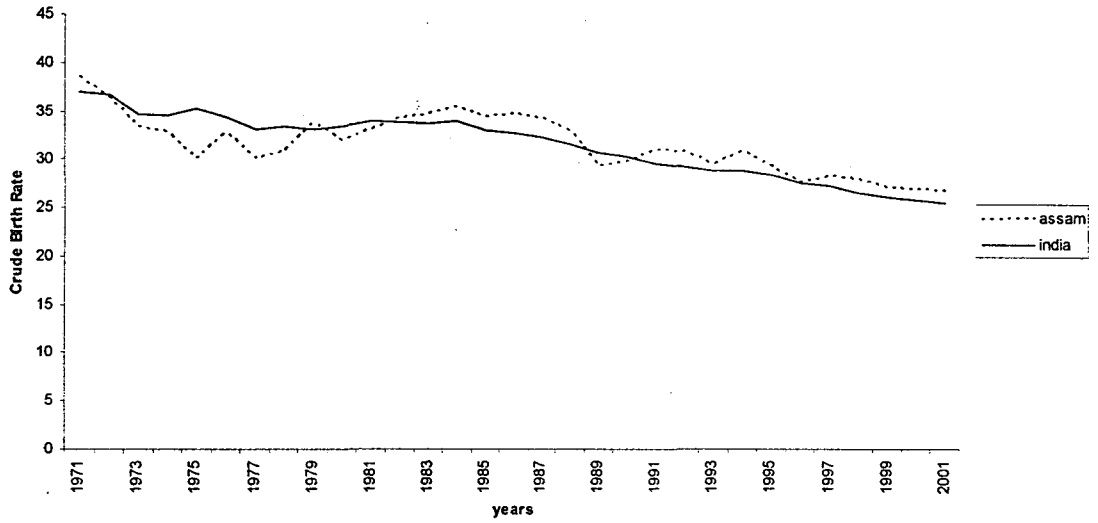
Source: India, Registrar General, 1999, 2001.

Fig 4.2

CRUDE BIRTH RATE OF ASSAM(as a ratio of all india levels)
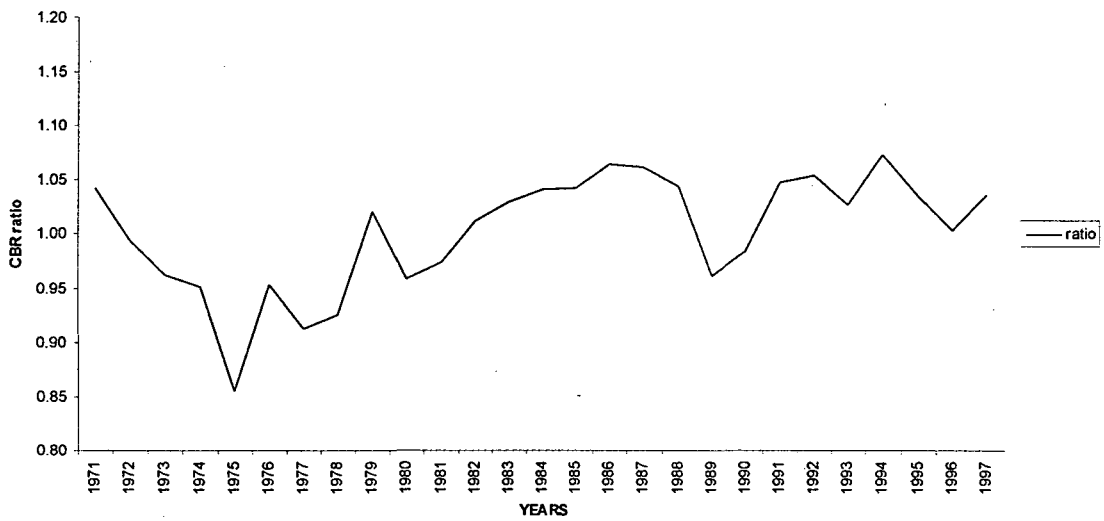
Source: Computed from Table 4.2

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Table 4.2

Crude Birth Rate of Assam as a ratio of all India, 1971-2001 .

Year	Ratio (CBR Assam/ CBR India)	Year	Ratio (CBR Assam CBR India)
1971	1.04	1987	1.06
1972	0.99	1988	1.04
1973	0.96	1989	.96
1974	0.95	1990	.98
1975	0.86	1991	1.05
1976	0.95	1992	1.05
1977	0.91	1993	1.03
1978	0.92	1994	1.07
1979	1.02	1995	1.04
1980	0.96	1996	1.00
1981	0.97	1997	1.04
1982	1.01	1998	1.04
1983	1.03	1999	1.05
1984	1.04	2000	1.05
1985	1.04	2001	1.06
1986	1.06		

Source: Computed from Table 4.1

In 1977, when the Janata Government came to power the Family Planning Programme was renamed as the Family Welfare Programme and all forms of coercive measures were dropped. From 1977 onwards the birth rate decline shows a distinct stall till mid 1980's after which the fertility levels again decline consistently. Thus, following the period of the emergency, the family planning programme suffered a setback and the backlash effect continued for some time.

A comparative study of the trends in Assam reveals that although in the beginning of the 1970's the state had higher fertility levels than India, after 1973 the birth rate records assteady decline. Till 1978 the fertility level in Assam was much lower than the all –India level. CBR rose and remained above the all India level till 1988. In the 1990's also the birth rate has been consistently higher.

4.2 Fertility Trends as per National Family Health Survey:

As Crude Birth Rate is a crude summary measure of the rate at which the population is replacing itself, a more precise picture of fertility can be obtained by examining the Age Specific Fertility Rates. The ASFRs from the National Family Health Survey are based on births during the three year period preceding the survey. The numerator of each age-specific fertility rate is live births in a five year age group, and the denominator is the number of woman-years lived in the same five year age interval during the three year time period.

The fertility trends as per the National Family Health Survey for Assam 1992-1993 are also available

Table 4.3

Age specific fertility rate for five year period preceding the survey, Assam, NFHS- I, 1992-93

Age groups	0-4	5-9	10-14	15-19
15-19	0.125	0.184	0.197	0.187
20-24	0.204	0.297	0.315	0.317
25-29	0.196	0.264	0.283	0.303
30-34	0.124	0.183	0.201	0.221
35-39	0.057	0.090	0.112	NA
40-44	0.026	0.051	NA	NA
45-49	0.000	NA	NA	NA

Source : International Institute of Population Sciences, 1995

Table 4.2 shows age-specific fertility rates for the 20 year period preceding the survey, calculated from the birth history information. Each birth is located by the year of birth and age of mother at the year of birth. Because birth histories are obtained only for women under age 50 at the time of the survey, no rates are available for women age 45 and over for the period 5-9 years prior to the survey or for women age 40 and over 10-14 years prior to the survey, or for women age 35 and over 15-19 years prior to the survey.

As can be seen from the Table 4.2 that as expected the age specific fertility is the highest in the age group 20-24 years followed by the 25-29 years. The ASFR for the period 15-19 years preceding the survey pertains to the period 1972-77, 10-14 years for the period 1977-82, 5-9 years for 1982-87, 0-4 years for 1987-92. As such the fertility shows a fluctuating trend for the 15-19 year age group as it rises between 1972-77 to 1977-82 and then declines. The fertility in the age group 20-24 declines slightly at first and then more steeply. In the remaining age groups fertility shows a more or less consistent decline over the years. Thus an analysis of the NFHS data corresponds to the trend in fertility observed from the Sample Registration System data only for the age group 15-19 and 20-24 years.

4.3 DECOMPOSITION OF FERTILITY RATES:

Since the crude birth rate is influenced by factors other than marital fertility, it is necessary to decompose the CBR into its major components in order to assess what part of the decline or rise in CBR could be attributed to changes in age structure, marital fertility or proportion of women in reproductive ages. The decomposition has been done for the time periods 1984-88, 1988-92 and 1992-96 keeping in mind that the mid 80's was the period when the stall in fertility decline was maximum and sustained. Also, the non - availability of data on Age Specific Fertility Rate by age group, as provided by the Sample Registration System from 1984 onwards, prevented an analysis of the same prior to 1980's.

The first assumption made when performing this procedure relates to additivity of the results of contributory factors on the dependent variable. The second assumption is that of the functional independence of components of CBR. Another assumption in this specific case is that illegitimate fertility is negligible (Srinivasan, 1998)

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CBR can be described as

$$CBR = \sum (A_i M_i F_i) * W/P$$

W = is the number of women in reproductive ages

P = is the total population

A_i = proportion of women in age group i among all women of reproductive ages

M_i = proportion of married women in age group i among all women in the age group

F_i = age specific marital fertility rate for age group i

The change in CBR for two time periods of a population, time 1 and 2, which has to be decomposed, can be expressed as a sum made up of the three components of CBR. The effect of age distribution within the reproductive ages A_i can be estimated by keeping this factor alone as a variable between the other two points of time as observed and keeping the other two factors, proportion of women in the reproductive ages and the proportion married at the two points of time, unchanged, at the levels observed at the first point of time. Thus the effect due to age factor is derived as

Effect due to age factor = ($\sum A1_i *M1_i *F1_i - \sum A2_i *M1_i *F1_i$)* (W1/P1)

This can be written as (W1/P1) * ΔA where ΔA is the component change due to age. Similarly, the effects attributable to differences in the 'proportion married' and 'marital fertility rates' are represented by ΔM and ΔF respectively, if computed sequentially.

The total change in fertility, or CBR, between the two points of time is given as:

$$\Delta CBR = (W1/P1) (\Delta A + \Delta M + \Delta F)$$

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ΔCBR= difference in CBR between the two time periods

ΔA = difference attributable to age structure between two time periods

ΔM= difference attributable to marriage composition between two time periods after ΔA has been obtained

ΔF = difference attributable to specific marital fertility rates between two time periods after ΔA and ΔM have been computed.

Table 4.4

Proportion married females by age, Assam and India, 1984-1996

Age group	Assam				India			
	1984	1988	1992	1996	1984	1988	1992	1996
15-19	.194	.188	.141	.148	.344	.340	.301	.250
20-24	.591	.570	.543	.558	.799	.776	.748	.746
25-29	.835	.761	.744	.783	.995	.915	.903	.919
30-34	.947	.861	.851	.877	.999	.940	.936	.943
35-39	.963	.883	.881	.881	.999	.927	.930	.927
40-44	.745	.840	.850	.836	.968	.887	.893	.902
45-49	.950	.736	.780	.776	.998	.832	.838	.846

Source: Computed from India, Registrar General, 1984

India, Registrar General, 1988

India, Registrar General, 1992

India, Registrar General, 1996

The results (Table 4.5) indicate that almost all of the change in the CBR of both India and Assam between the studied time periods is explained by declines in proportion married and marital fertility rates. The decomposition shows that changes in proportion married accounted for the largest contribution to the decline in birth rate, 87.5% and 83% for India and Assam respectively in 1984-88. Marital fertility contributes to 37.5 % of the decline in India's CBR and 33.3 % in Assam's CBR while age composition increases CBR.

For the period 1988-92, marital fertility accounted for 82.6 % and proportion married accounted for 43.5 % of the decline in India while in Assam marital fertility accounted for 37.5% and proportion married accounted for 87.5 % of the decline. Age composition continued to have an increasing effect.

Table 4.5

Decomposition in changes of CBR, India and Assam, 1984-1996

	1984- 1988		1988 - 1992		1992 - 1996	
	India	Assam	India	Assam	India	Assam
Change in observed CBR	-2.4 (100%)	-2.4 (100%)	-2.3 (100%)	-2.1 (100%)	-2.0 (100%)	-2.6 (100%)
Change due to age structure	+0.6 (-25%)	+0.4 (-16%)	+0.6 (-26%)	+0.7 (-33%)	0.0 (0)	-0.7 (33%)
Change due to proportion married	-2.1 (87%)	-2.0 (83%)	-1.0 (43%)	-1.7 (81%)	-0.4 (20%)	+1.1 (-42%)
Change due to marital fertility	-0.9 (37%)	-0.8 (33%)	-1.9 (82%)	-1.1 (52%)	-1.6 (80%)	-3.0 (115%)

Source: Computed from Table 4.3

Note: Figures in parantheses are percentages of the total change during the period.

During 1992-96, marital fertility accounted for the largest percentage decline 80% in India and 115 % in Assam. While proportion married contributed negatively by 20 % in India's CBR decline, in Assam it attributed to 42 % negatively. Age distribution had negligible effect for India and negative effect in case of Assam.

Thus the decomposition technique reveals that changes in marital fertility accounted for a significant part of the decline in the CBR during 1988-92 and 1992-97 and perhaps to an extent it could be attributed to better acceptance of the family planning programme. However, not much difference between Assam and India can be observed and as such the stalling of birth rate in the state must be explained in the light of extraneous variables which have not been accounted for in this analysis.

4.4 CORRELATING THE TRENDS IN FAMILY PLANNING ACCEPTANCE WITH POLITICAL DEVELOPMENTS:

The impact of the Family Planning Programme can in a way be assessed by level of acceptance. Of the various methods made available by the programme to curb birth rate, the most dominant since its very inception was the method of sterilization. Various factors interact to determine the impact of policies and programmes on populations. These could be social, economic, cultural, political or an amalgamation of all of these with a dominant role of one or two factors.

Keeping in mind the possibility of co-incidence between the period of political turmoil and the deviation in fertility trend from the all India levels for the state of Assam it would be perhaps natural to try to observe the family planning acceptance pattern vis-à-vis the political situation. The problems in Assam are characteristically socio-economic in origin, which have now assumed significant politico-cultural overtones. These are heightened by the centralist/regionalist perspectives and interactions.

Table 4.6

Family Planning Acceptance, Assam and India, 1970-71 to 2000-01

Year	Assam	India	Year	Assam	India
1970-71	17301	1329914	1986-87	93471	5028164
1971-72	41578	2187336	1987-88	78274	4938937
1972-73	61109	3121856	1988-89	58119	4678177
1973-74	20822	942402	1989.90	60173	4181322
1974-75	39387	1349045	1990-91	64369	4125555
1975-76	147545	2668754	1991-92	66323	4090039
1976-77	226161	8259023	1992-93	27101	4286418
1977-78	199621	6277413	1993-94	28106	4497450
1978-79	25269	1483907	1994-95	22450	4579514
1979-80	22253	1773040	1995-96	23866	4422319
1980-81	30561	2046221	1996-97	16243	3870226
1981-82	34116	2792374	1997-98	12050	4238514
1982-83	55763	3980224	1998-99	14171	4206726
1983-84	126239	4531673	1999-00	25880	4595466
1984-85	125466	4082330	2000-01	13865	4735149
1985-86	122690	4899145	-		

Source: India: Department of Family Welfare, various years

The graphs (Fig 4.3 and Fig.4.4) depicts the total number of acceptors of the method of sterilization made available to the people from 1970 to 1997. For the all India level the decade 1970-1980 is marked by two peaks- a small one in 1972-73 and a higher peak during 1976-1977. The period 1972-73 saw the introduction of holding mass vasectomy camps in a big way.

In November 1970, a massive vasectomy camp was held in the Ernakulam district of Kerala, where a total of 15,005 vasectomies were performed over a period of one month. This performance was repeated in July 1971 on a much larger scale, when 63,418

vasectomies were performed in one month period. Some of the salient features of these camps , which contributed to their spectacular success , have been identified by the

Fig 4.3

FAMILY PLANNING ACCEPTANCE, INDIA, 1971-2001
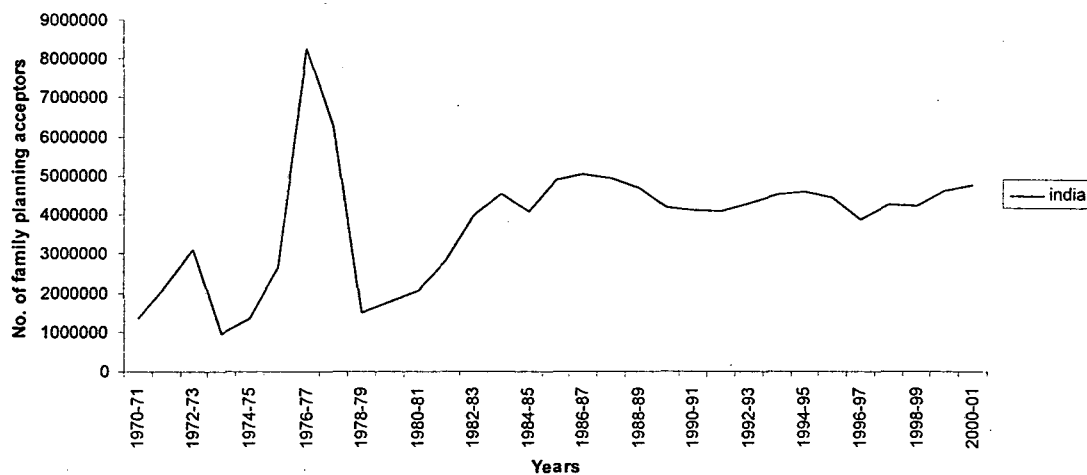
Source: India: Department of Family Welfare, various years

Fig 4.4

FAMILY PLANNING ACCEPTANCE, ASSAM,1971-2001
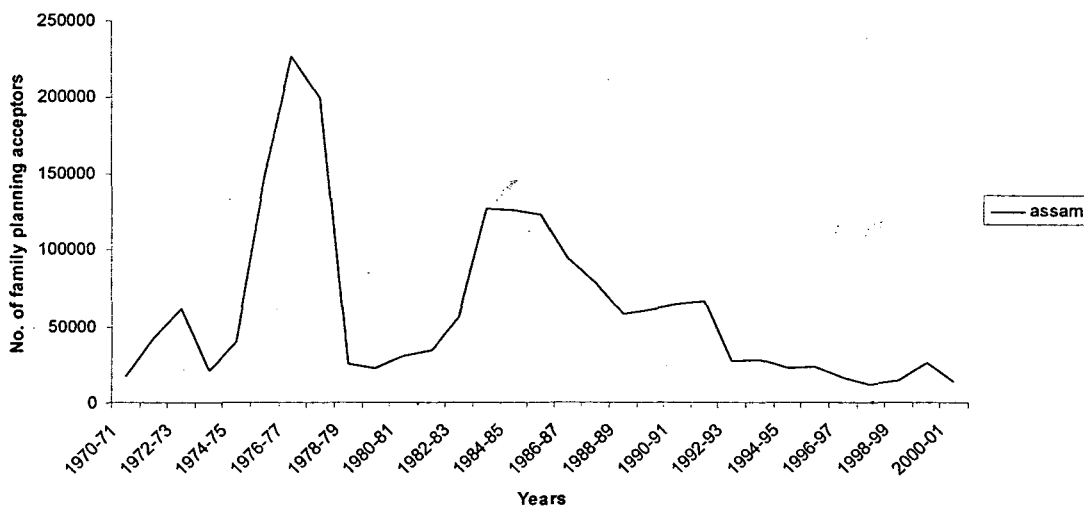
Source: India: Department of Family Welfare, various years

interdepartmental co-operation that the District Collector was able to generate, the festive atmosphere dispelling clouds of secrecy and embarrassment, support from the representatives of the people as well as from industries which the organizers were able to muster, special precautions taken to minimize infections, increased incentives to acceptors and good management techniques for the organization of these massive camps. Encouraged by its success in Ernakulam , the Department of Family Planning allowed the states to organize such massive camps and provided additional support. The result was that the majority of vasectomies came to be performed in such camps. Of the 2.19 million vasectomies in 1971-72, about 61 percent were performed in mass vasectomy camps. In 1972-73, of the 3.12 million vasectomies 83 percent were performed in such camps. The highest peak is recorded in the year 1976-77 which was also the period when national emergency was declared. The government in its bid to control population pressure adopted coercive measures and as such the number of acceptors registered a phenomenal increase.

Table 4.7

Number of Contraceptive Acceptors as Percent of Population, Assam and India, 1970-71 to 2000-2001

Year	Assam	India	Year	Assam	India
1970-71	0.12	0.24	1986-87	0.44	0.65
1971-72	0.28	0.39	1987-88	0.36	0.62
1972-73	0.39	0.55	1988-89	0.27	0.58
1973-74	0.13	0.16	1989.90	0.27	0.51
1974-75	0.24	0.23	1990-91	0.29	0.49
1975-76	0.86	0.44	1991-92	0.29	0.47
1976-77	1.28	1.32	1992-93	0.12	0.49
1977-78	1.09	0.98	1993-94	0.12	0.50
1978-79	0.13	0.23	1994-95	0.09	0.50
1979-80	0.12	0.27	1995-96	0.10	0.48
1980-81	0.15	0.30	1996-97	0.10	0.41
1981-82	0.17	0.40	1997-98	0.05	0.44
1982-83	0.27	0.56	1998-99	0.06	0.43
1983-84	0.61	0.62	1999-00	0.10	0.46
1984-85	0.60	0.55	2000-01	0.05	0.46
1985-86	0.58	0.65	-		

Source: Computed from Table 4.6

Fig 4.5

NUMBER OF CONTRACEPTIVE ACCEPTORS AS PERCENT OF POPULATION, ASSAM
AND INDIA, 1971-2001

Source: Computed from Table 4.7

Table 4.8

Percentage Effective Couple Protection Rate (CPR) due to all methods, 1975-2000

Years	Assam	India	Years	Assam	India
1975	10.0	16.3	1988	26.2	39.9
1976	16.5	24.4	1989	25.7	41.9
1977	23.2	18.9	1990	28.2	43.3
1978	21.6	22.8	1991	28.2	44.1
1979	10.0	16.3	1992	27.6	43.6
1980	19.3	22.3	1993	25.2	43.5
1981	18.5	22.7	1994	23.6	45.4
1982	18.3	23.7	1995	22.6	45.8
1983	18.6	25.9	1996	21.2	46.5
1984	20.9	29.2	1997	19.1	45.4
1985	24.9	32.1	1998	17.6	45.4
1986	25.4	34.9	1999	16.7	44.0
1987	26.5	37.5	2000	15.2	46.2

Source: India, Department of Family Welfare, various years

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PERCENTAGE EFFECTIVE COUPLE PROTECTION RATE(CPR) DUE TO ALL
METHODS,1975-2000
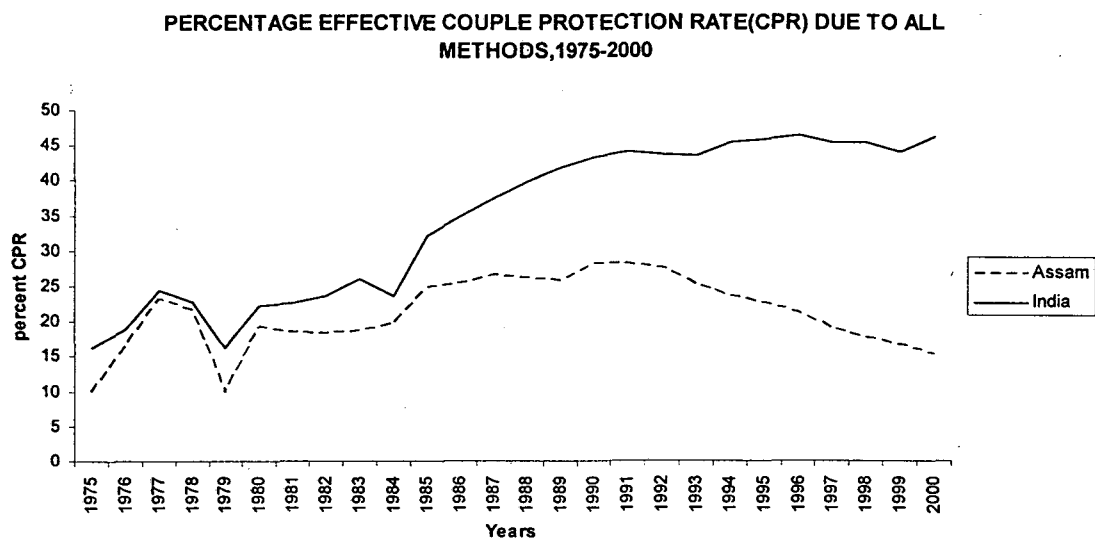
As can be seen from the graph (fig 4.6), the trends in couple protection rate also correspond to the pattern of fertility observed for Assam and India. Till 1979 the Couple Protection Rate for the state is in correspondence with that of the All India level after which it deviates. Yet in Assam till the mid 1980's CPR does register a rise in fits and starts but thereafter the gap between the All India average and Assam widens as national level rises and the state levels fall abysmally.

After 1990 the Couple Protection Rate (CPR) in Assam shows a decline and such a wide gap between the All India and state level CPR is accounted for by the fact that the Department of Family Welfare, on the basis of which the trends in CPR have been studied (Fig 4.6), does not record the traditional methods of Family Planning. The traditional methods provided by the National Family Health Survey (Table 4.9) show that they are more prevalent in Assam than the modern methods. It is only in recent decades that with Governmental incentives and policies modern Family Planning methods have gained popularity throughout the country but in Assam the methods of birth control till date

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remain traditional. As such although the CPR's corresponded broadly with the All India levels till mid 1980's and thereafter the gap between them widens. Due to this discrepancy in data while the Department of Family Welfare shows a wide gap between the state and All India CPR's, the gap between the same is not as much according to the NFHS estimates although the levels for Assam remain below the All India average.

Table 4.9

Contraceptive methods currently used according to Department of Family Welfare and National Family Health Survey-2, Assam and India, 1998-99

Methods	Assam		India	
	Department of Family Welfare(1999)*	NFHS – 2 (1998-99)**	Department of Family Welfare(1999)*	NFHS - 2 (1998-99)**
Modern Methods	**17.3**	**26.6**	**48.6**	**42.8**
Sterilization	13.3	16.7	29.1	36.1
IUD	2.4	1.9	7.8	1.6
Condoms	0.9	1.8	8.3	3.1
Oral Pills	0.6	6.3	3.3	2.1
Any traditional method	N.A	**15.8**	N.A	**5.0**
Rhythm method	N.A	11.1	N.A	3.0
Withdrawal	N.A	4.7	N.A	2.0
All method	N.A	43.3	N.A	48.2

Note: N.A= Not Available
Source: * India, Department of Family Welfare, 2003
** International Institute of Population Sciences and ORC Macro, 2000

It can be seen that till the end of the 1970's the level of acceptance for India as a whole and the state of Assam match more or less. The deviation from the all India trend starts from 1979 which was also an important politico-geographical phase in the regional politics of Assam. As such the need to correlate the pattern of fertility behaviour with the socio-cultural conditions compels a intrusive investigation of the political history of the state.

The 1980's was an important politico – geographical phase in the regional politics. It saw transformation and radicalization of activities. These also saw fragmentation and fractionalization of the polity. The phase wise discussion on the political developments since 1979 has been done in a previous chapter and a corresponding pattern between the political upheavals and the impact of family planning programme in terms of the acceptance levels is discernable.

Fig 4.7

TRENDS IN FAMILY PLANNING ACCEPTANCE AND POLITICAL DEVLOPMENTS , ASSAM, 1971-2001

A - Beginning of unrest (1979)

B - Rise of militant insurgency (1980-83)

C - Saikia Government (1983-85)

D - AGP Government (1985-90)

E - Change in Government(post 1990)
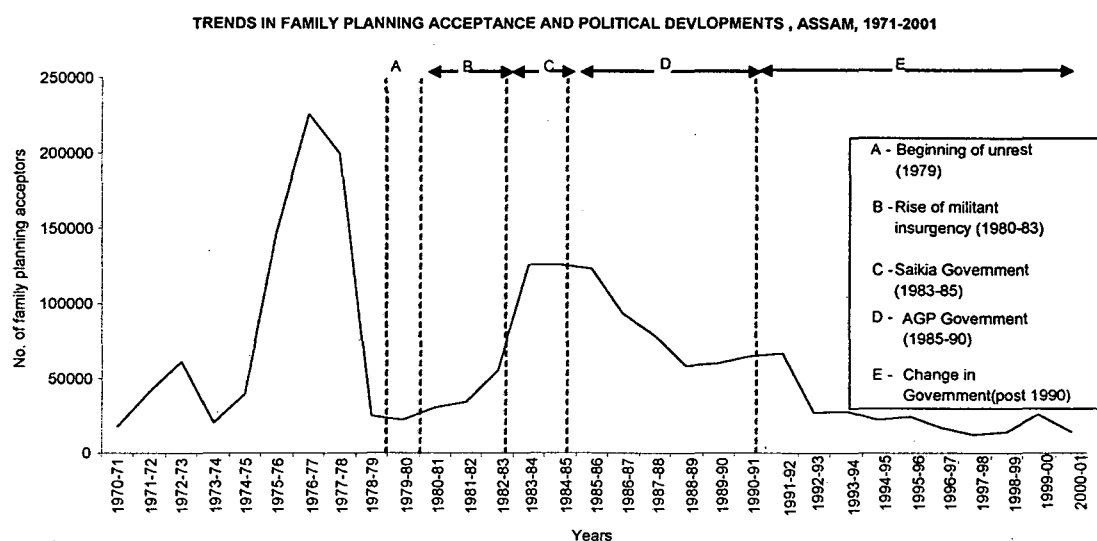
Source: Table 4.6

The year 1979 which was the watermark of the beginning of the political turmoil was the period which saw the deviation between the acceptance levels of Assam and India. This was followed by utter chaos in the functioning of the state between 1980-83 when successive governments came and went within months and the turmoil is reflected in the abysmally low level of family planning acceptance during the same. The Hiteswar Saikia government headed by an ethnic Assamese who is *Ahom* by caste, brought about some stability in the state although for a short while and this is reflected also in the plateau observed during the period in the improved levels of family planning acceptance. Thereafter the Assam Accord was signed between the Centre and the state in 1985 and the AGP government came to power which was supposed to have nexus with the militant leaders, and this is also seen as the time when ULFA made significant inroads into the state machinery. In fact from the mid 80's the level of contraceptive acceptance registered a steady decline and continues to remain below the all India level.

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Chapter 5

Fertility and Levels of Development

Chapter 5

FERTILITY AND LEVELS OF DEVELOPMENT

5.1 Development and its impact on fertility

The role development plays in curbing fertility has been highlighted in various studies although development as such has been variously interpreted. While the demographic transition theory defines it as industrial growth and technological upgradation, in the present context development is used in a much broader perspective encompassing all aspects of human welfare and not just confined to narrow economic parameters. Development as such has come to mean expansion of opportunities and choices for a decent life and this is made possible with better education, health, employment, decentralization, empowerment, in addition to economic growth.

The relationship between development and fertility can be understood in two ways. In the case of India, in spite of its planned economic development for over 50 years, it has remained a country of stark contrast and disparities with a vast area remaining undeveloped or nominally developed. With a population of over one billion there are many Indians who still cannot afford two square meals a day, have no proper clothing, are either homeless or live in precarious conditions. The unabated growth in population since the last few decades has often been identified as being one of the foremost causes. One the one hand the abysmally low levels of development at the grass roots culminate in phenomenal population growth and on the other hand high fertility levels do not allow any development to take place. Development process of an economy is an outcome of collective effort of individuals and institutions in a society. As such it is necessary to address the issue of development – economic, political, social and cultural, in order to bring down the fertility levels and hence lower the growth of population.

The stall observed in fertility decline in Assam leads to the situation of a fast growing population, which has serious implications for the development planning. In general, an expanding population results in an increase in the labour force as well as a rise in the dependency ratio. In this region, all these will straightaway lead to an increase in unemployment as well as progressive impoverishment of more and more families.

Several factors can be identified, which either hinder the onset of the fertility transition or produce a climate unfavorable for continued fertility decline in those countries that have already entered the transition. These factors include lagging educational attainment for women, high infant mortality rate, persistent economic hardships and civil conflict, early entry into reproductive life, continuing high preference for children and a lack of accessibility to affordable and effective contraception.

In order to assess the level of socio-economic of development and its impact on fertility the variables chosen can be categorized into:

1. DEMOGRAPHIC DETERMINANTS
2. SOCIAL DETERMINANTS
3. ECONOMIC DETERMINANTS

1. Demographic determinants - It is a well-documented fact that infant mortality and fertility are positively correlated. If parents do not have the security that their child will survive the vagaries of infancy, they will tend to have more children. The age specific death rate for the age group 0-4 years (ASDR_0-4) has been chosen to reflect the demographic determinant of fertility. ASDR is the number of deaths in the specified age group as a ratio of population in that age group. ASDR_0-4 has been preferred over the conventional infant mortality rate (IMR) as it accounts for the environmental factors also besides the genetic factors of infant mortality. The source for the same has been the Registrar General of India, Sample Registration System..

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2. Social determinants – Numerous studies have shown convincingly the fertility reducing impact of advances in female educational attainment. The main paths of influence through which women's education reduces fertility are its association with later age at marriage, desire for smaller families and increased use of contraceptives. High levels of education provide alternatives to repeated child bearing and are associated with lower infant morality and better childcare. The Census was not held in Assam in 1981 and the female literacy for the same is thus an estimated figure as given in the Statistical Handbook of Assam, 1987, Directorate of Economics and statistics, Government of Assam. The remaining has been collected from 1981 Census of India, Social and Cultural Tables; 1991- Paper 2 of 1992, series 1, Census of India 1991; 2001 – Based on Preliminary Census 2001 estimates.

3. Economic determinants -Economic factors cannot be overlooked in their role in influencing fertility. The poorer sections of the society are deprived of access to family planning methods, education, health facilities, etc. Although very few studies in India have gone into the question of the relationship between the income of the family and fertility yet in traditional rural and agrarian communities, children are often looked upon as an extra hand for helping in the field. Thus to assess the economic determinants of fertility the percentage of population below the poverty line is taken. Poverty line is in Rupees per capita per month and the source is the Planning Commission, Government of India as published in the National Human Development Report, 2002

With the above chosen indicators a state level regression analysis has been done for three points of time – 1981, 1991 and 2001. The time points have been so selected keeping in mind that the analysis coincides with the period when fertility decline stalled in Assam. The stall was observed from the beginning of the 1980's and it continued till the end of the decade. Thereafter during the 1990's and beginning of the 21st century although fertility again starts to decline it continues to be persistently above the national average. The regression is based on 16 large states of India. Small states are ignored since these often have special characteristics.

The objective of the regression analysis is to see if development affects the fertility level and if Assam's fertility level during the three time points was at par with that of the fertility predicted by the prevailing level of development.

In the following regression analysis fertility, i.e., Crude Birth Rate (CBR) is held to be the dependent variable and the development indicators – female literacy, ASMR and percentage below poverty level are the independent variables.

The regression equation is,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where, Y = dependent variable, i.e., Crude Birth Rate (CBR)

β_0 = constant

X_1, X_2, X_3 = independent variables, i.e., ASDR, female literacy, and percentage below poverty line, and e is the residual term

STATE LEVEL REGRESSION ANALYSIS (1981, 1991 AND 2001)
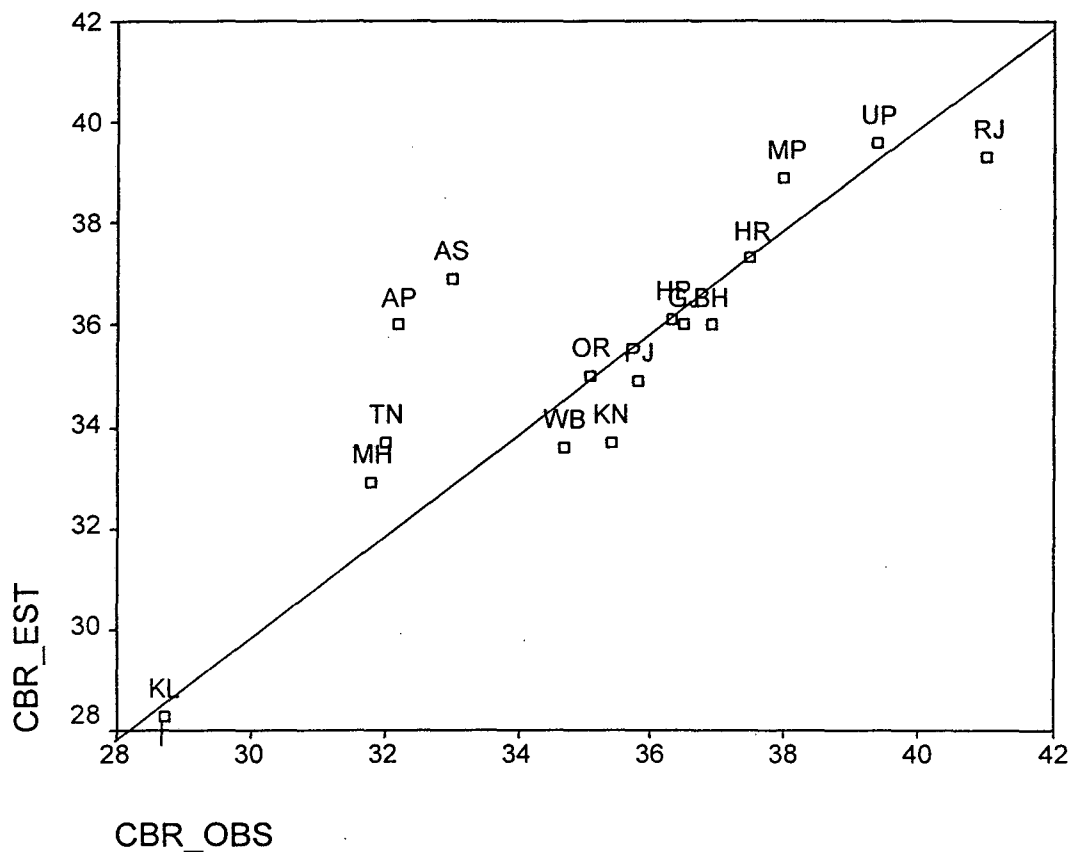
For the year 1981, the regression equation shows that the effects of the independent variables, i.e., female literacy, ASDR of 0-4 years, and percentage below poverty are significant at 5% level of significance and 80.3% of the variation in CBR is explained by them. From the estimated regression coefficients, predicted values of the dependent variable, CBR, are computed.

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Table 5.1

State Level Regression Results of CBR on Development Indicators, 1981, 1991, 2001

Explanatory variables	1981			1991			2001		
	Co-efficient	t-value	Signifi-cance level	Co-efficient	t-value	Signifi-cance level	Co-efficient	t-value	Signifi-cance level
ASDR (0-4)	0.146	2.732	.020	0.0663	0.654	.526	0.04285	.635	.539
Female literacy (%)	-0.0814	-1.803	.099	-0.135	-2.242	.047	-0.280	-2.607	.024
Percent population below poverty line	-0.0714	-2.421	.034	0-0321	0.501	.626	-0.0210	-2.72	.791
Constant	35.560	10.998	.000	34.302	6.948	.000	37.848	3.814	.003
R^2	0.803			0.678			0.700		
Adjusted R^2	0.749			0.590			0.618		
n	16			16			16		

In 1981 it can be seen that at the given level of development the predicted values of CBR are higher than the observed values for the state of Andhra Pradesh (observed -32.23, predicted – 35.95), Assam (observed -33, predicted -36.92), Madhya Pradesh (observed - 37.96, predicted -38.90) , Maharashtra (observed – 31.75, predicted -32.95), Tamil Nadu (observed -31.96, predicted -33.71), and Uttar Pradesh (observed -39.42, predicted -39.60). Thus Assam's fertility for 1981 was much lower than the expected fertility level at the given development level, observed CBR being 33 and predicted CBR being 36.92 (Fig 5.1)

Figure 5.1

Observed and predicted values of Crude Birth Rate, States

1981

Note: AP- Andhra Pradesh   MP- Madhya Pradesh
      AS- Assam   MH- Maharashtra
      BH- Bihar   OR- Orissa
      GJ- Gujarat   PJ- Punjab
      HR- Haryana   RJ- Rajasthan
      HP- Himachal Pradesh TN- Tamil Nadu
      KN- Karnataka   UP-Uttar Pradesh
      KL- Kerala   WB-West Bengal

Figure 5.2

Observed and Predicted values of Crude Birth, States
1991
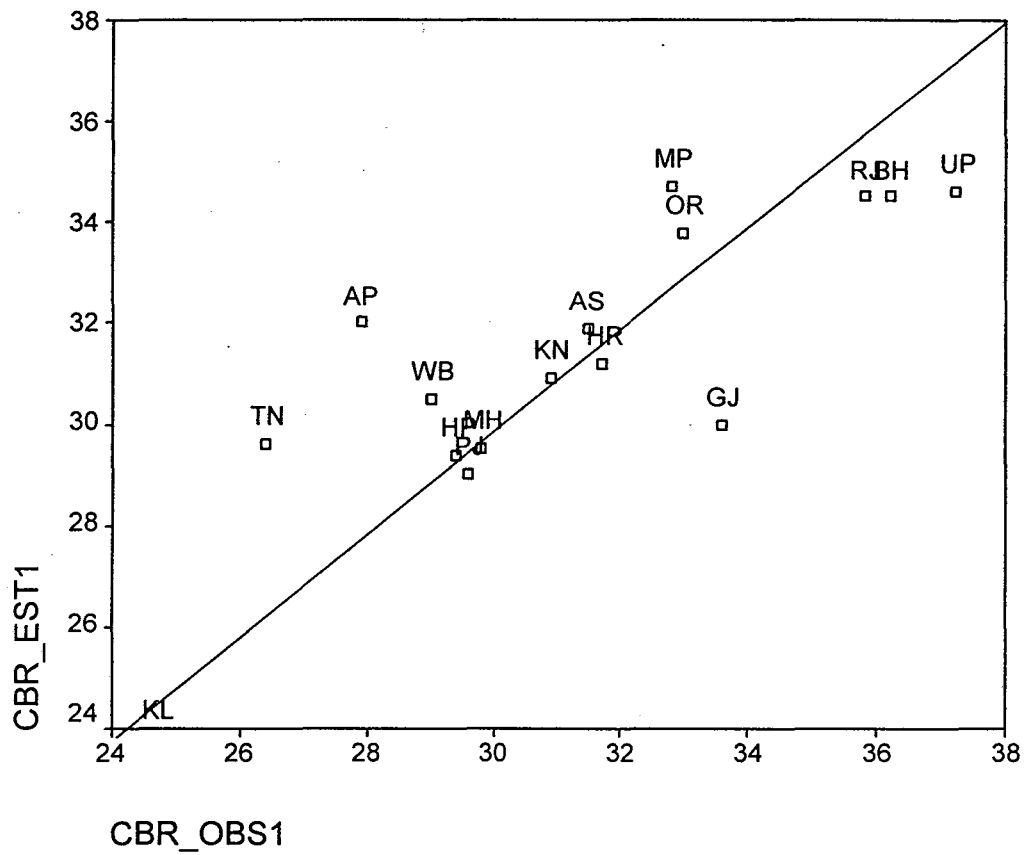
Note: AP- Andhra Pradesh   MP- Madhya Pradesh
AS- Assam   MH- Maharashtra
BH- Bihar   OR- Orissa
GJ- Gujarat   PJ- Punjab
HR- Haryana   RJ- Rajasthan
HP- Himachal Pradesh   TN- Tamil Nadu
KN- Karnataka   UP-Uttar Pradesh
KL- Kerala   WB-West Bengal

Figure 5.3

Observed and Predicted values of Crude Birth Rate, states, 2001
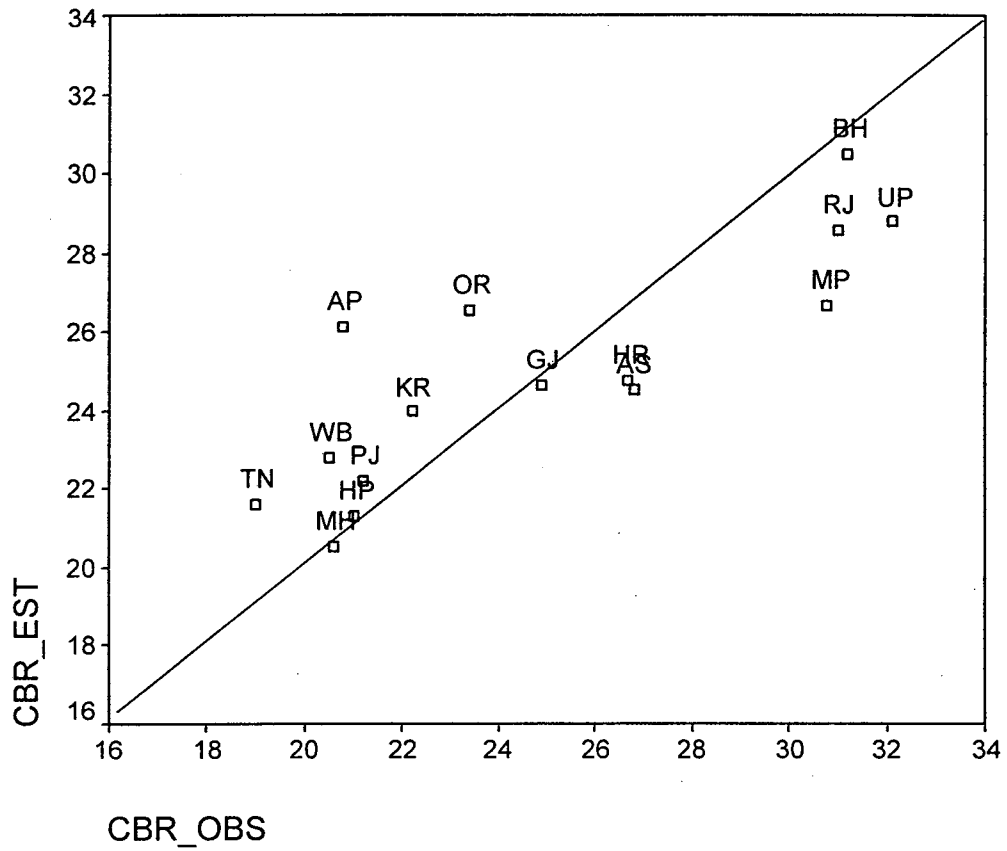
Note: AP- Andhra Pradesh   MP- Madhya Pradesh
AS- Assam   MH- Maharashtra
BH- Bihar   OR- Orissa
GJ- Gujarat   PJ- Punjab
HR- Haryana   RJ- Rajasthan
HP- Himachal Pradesh   TN- Tamil Nadu
KN- Karnataka   UP-Uttar Pradesh
KL- Kerala   WB-West Bengal

Table 5.2

Observed and Predicted Values of CBR from Regression on Development Indicators, Large States of India, 1981, 1991 and 2001

	1981		1991		2001	
	CBR_observed	CBR_estimated	CBR_observed	CBR_estimated	CBR_observed	CBR_estimated
Andhra Pradesh	32.23	35.95	27.89	32.01	20.80	26.12
Assam	33.0	36.92	31.47	31.94	26.80	24.52
Bihar	36.87	35.96	36.16	34.49	31.20	30.48
Gujarat	36.54	36.00	33.56	30.06	24.90	24.66
Haryana	37.50	37.29	31.65	31.17	26.70	24.75
Himachal Prades	36.27	36.14	29.37	29.39	21.00	21.29
Karnataka	35.41	33.66	30.93	30.94	22.20	23.96
Kerala	28.65	28.30	24.67	23.76	17.20	13.67
Madhya Pradesh	37.96	38.90	32.79	34.72	30.80	26.69
Maharashtra	31.75	32.95	29.75	29.50	20.60	20.52
Orissa	35.07	35.01	32.98	33.76	23.40	26.56
Punjab	35.80	34.93	29.63	29.00	21.20	22.20
Rajasthan	41.01	39.30	35.75	34.47	31.00	28.56
Tamil Nadu	31.96	33.71	26.44	29.56	19.00	21.58
Uttar Pradesh	39.42	39.60	37.21	34.56	32.10	28.79
West Bengal	34.67	33.60	29.01	30.53	20.50	22.78

Source: Computed

For the period 1991, the regression equation shows that only female literacy is significant at 5% level of significance and 67.8% of the variation in CBR is explained by it. In 1991, the estimated fertility level was higher for the states of Andhra Pradesh (observed -27.89, predicted -32.01), Madhya Pradesh (observed – 32.79, predicted – 34.72), Orissa (observed – 32.98, predicted – 33.76), Tamil Nadu (observed – 26.44, predicted – 29.56), West Bengal (observed – 29.01, predicted – 30.53). In Assam the difference between estimated and observed considerably narrowed down by this period. Estimated being 31.9 and actual

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being 31.5 thus it can be surmised that by the period 1980-90 Assam had lost its advantages of the previous decade (Fig 5.2)

For the period 2001, it is again female literacy alone, which is significant and 70% of the variation in CBR is being explained by the independent variables. While the position of the other states remain more or less the same with regard to Assam it can be seen that the observed fertility (26.8) is now higher than predicted CBR (24.5) for the prevailing level of development (Fig5.3).

DISTRICT LEVEL REGRESSION ANALYSIS (1991 and 2001)

A similar exercise has been done at the district level in Assam for the period 1991 and 2001.The same could not be done for the period 1981 as Census was not held in Assam during 1981 and district level data is thus unavailable. To access the level of development the variables chosen are,

1. Female literacy,

2. Proportion of urban population,

3. Percentage of workers in the tertiary sector of the economy.

The variables used for the state level analysis could not be used for the district level due to unavailability of data. As in the case of the state level analysis, the regression analysis is to see if development affects fertility at the district level and whether observed fertility is consistent with the expected level. The districts which have fertility higher than what should be at existing development level are then studied to find the probable causes. In the following regression analysis fertility, i.e., Crude Birth Rate (CBR) is held to be the dependent variable and the development indicators – female literacy, proportion of urban population and percentage of workers in the tertiary sector are the independent variables. For 1991, the source of data is the Census of India 1991, Assam State District Profile and the 2001 data source being the Census of India, 2001 Provisional Population Totals (India, Registrar General,1993a,1993c,2001). The data on Crude Birth rate for 2001 has been

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obtained from District Level Estimates of Fertility from India's 2001 Census by Guilmoto and Rajan (2002).

The regression equation is,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where, Y = dependent variable i.e. Crude Birth Rate (CBR)

β_0 = constant

X_1, X_2, X_3 = independent variables, i.e., female literacy, proportion of urban population, and percentage of workers in the tertiary sector of the economy, and e is the residual term.

Table 5.3

District Level Regression Results of CBR on Development Indicators, 1991 and 2001

Explanatory Variables	1991			2001		
	Co-efficient	t-value	Significa level	Co-efficient	t-value	Significance level
Female literacy (%)	-0.429	-2.602	.018	-0.384	-5.437	.000
Urbanisation	-0.785	-2.877	.010	0.0118	.171	.866
Workers in the Tertiary sector	0.811	2.576	.019	-0.0598	-1.383	.183
Constant	44.929	7.535	.000	50.986	14.580	.000
R^2	0.425			0.731		
Adjusted R^2	0.334			0.689		
n	16			16		

The regression equation for the period 1991 shows that all the 3 independent variables are significant at 5% level of significance and 42.5% variation in CBR is explained by them. In 2001, only female literacy is significant and the independent variables explain 73.1% change in CBR.

As seen in the state level regression analysis the inter district fertility levels are not commensurate with the prevailing level of development. The predicted CBR is low for the districts of Jorhat, Dibrugarh, Sibsagar, Tinsukia and Kamrup and North Cachar as they are comparatively well developed. The least difference between the observed and estimated fertility in 1991 is seen only in case of three districts Dhubri, North Cachar Hills and Golaghat.

Most of the districts with high observed CBR's (above 40) like Karimganj, Nalbari, Barpeta and Darrang are also the ones with maximum difference between observed and estimated fertility. At the upper end of the spectrum is Karimganj with observed fertility higher by 9.4 points above the level commensurate with its development. Karimganj, being a district, having a common border with Bangladesh, has substantial immigration and a dominant Muslim population (50%) which plays an important role in pushing up the fertility levels. It is the fourth most densely populated district (555 persons per sq. km) after Nagaon, Dhubri, and Kamrup.

Other less developed districts like Barpeta, Nalbari, Darrang are also seen to have CBR much higher than the level predicted by their development indictors. Ten districts have CBR lower than estimated CBR-Dhemaji, Bongaigaon, Dibrugarh, Goalpara, Kamrup, Sonitpur, Morigaon, N.C.Hills, Cachar, Hailakandi

Fig. 5.4

**ASSAM
Districts
2001**

Tinsukia

Dhemaji

Dibrugarh

Lakhimpur

Sibsagar

Jorhat

Sonitpur

Golaghat

Darrang

Kokrajhar

Bongaigaon

Nalbari

Barpeta

Karbi
Anglong

Morigaon

Nagaon

Kamrup

Dhubri

Goalpara

Karbi
Anglong

North Cachar Hills

Cachar

Karimganj

Hailakandi

N

NOT TO SCALE
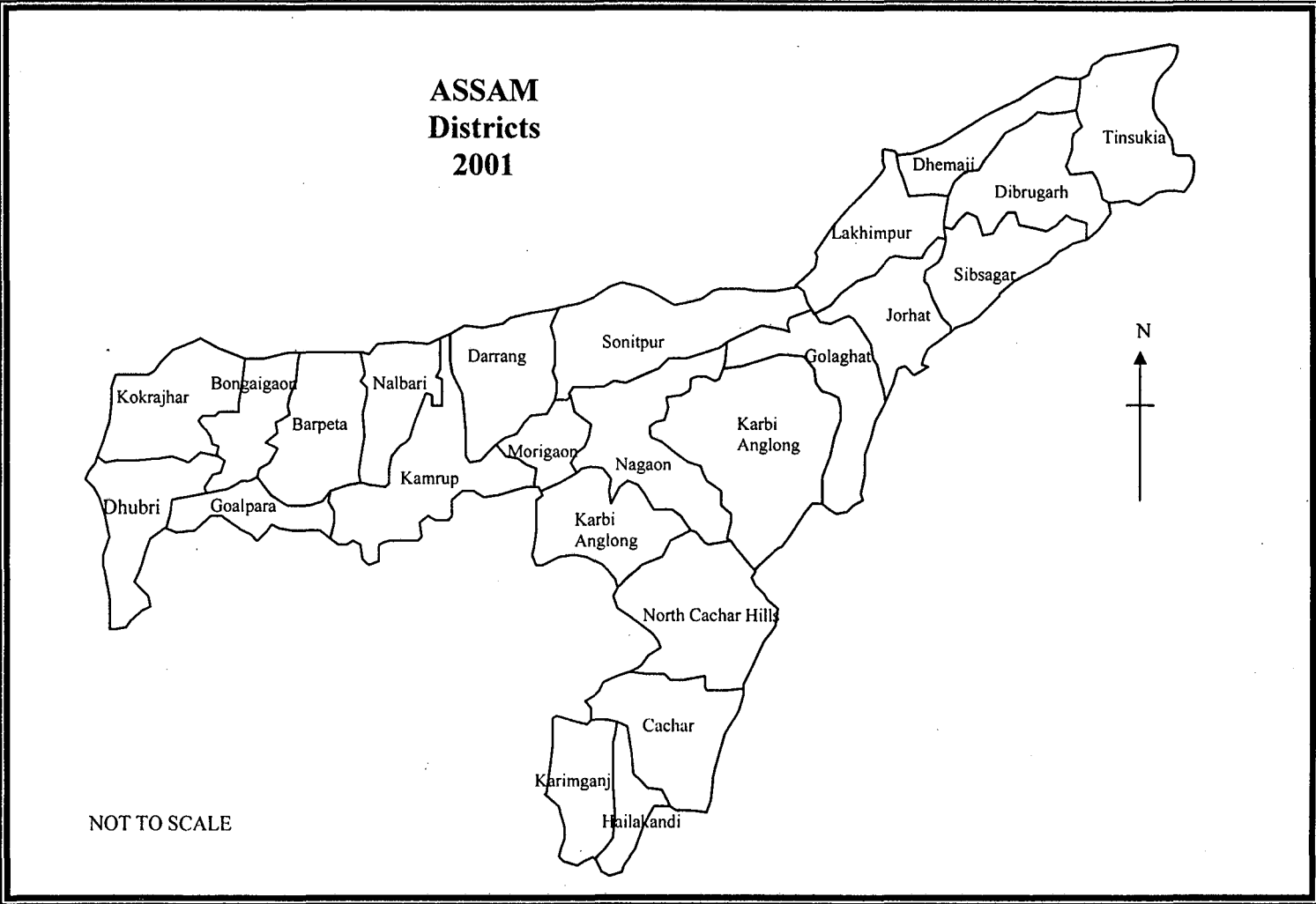
Table 5.4

Residuals from Regression of CBR on Development Indicators, Districts of Assam

	1991				2001		
District	CBR_obs	CBR_est	Residuals	District	CBR_obs	CBR_est	Residuals
Goalpara	35.2	38.2	-3.0	Goalpara	32.0	28..9	3.1
Dhubri	38.2	37.9	0.2	Dhubri	35.2	32.6	2.6
Kokrajhar	39.7	37.3	2.4	Kokrajhar	29.3	32.8	-3.5
Bongaigaon	29.3	37.7	-8.4	Bongaigaon	29.4	29.1	0.3
Kamrup	28.3	30.1	-1.8	Kamrup	22.1	22.0	0.1
Barpeta	43.2	40.1	3.1	Barpeta	30.8	30.3	0.5
Nalbari	47.0	42	5.0	Nalbari	23.0	26.0	-3.0
Darrang	42.0	37.6	4.4	Darrang	29.1	30.9	-1.8
Sonitpur	34.0	37.5	-3.5	Sonitpur	25.6	27.9	-2.3
Nagaon	33.9	32.7	1.2	Nagaon	29.9	27.5	2.4
Morigaon	30.5	34.7	-4.2	Morigaon	31.8	29.5	2.3
Sibsagar	31.1	29.6	1.6	Sibsagar	21.6	21.8	-0.2
Jorhat	31.5	28.3	3.2	Jorhat	19.4	20.3	-0.9
Golaghat	32.1	31.2	0.9	Golaghat	23.3	24.9	-1.6
Lakhimpur	34.1	32	2.1	Lakhimpur	27.4	26.5	0.9
Dibrugarh	24.4	28.8	-4.4	Dibrugarh	22.2	23.7	-1.7
Tinsukia	37.5	29.6	7.9	Tinsukia	25.1	27.1	-2.0
Dhemaji	25.9.	35.8	-9.9	Dhemaji	27.7	28.5	-0.8
Karbi Anglo	33.1	31.3	1.8	Karbi Anglo	29.6	31.0	-1.4
N.C.Hills	29.7	30.5	-0.8	N.C.Hills	26.4	26.0	0.4
Cachar	32.6	36.3	-3.7	Cachar	25.3	24.5	0.8
Karimganj	48.5	39.1	9.4	Karimganj	29.0	24.6	4.4
Hailakandi	32.1	35.7	-3.7	Hailakandi	30.2	28.8	1.4

Source: Computed from the regression equations

There are many other districts which despite having moderate development levels are seen to have high fertility levels. While the concentration of industry and other commercial activities have a role to play in the economic growth of Tinsukia in upper Assam, the

proximity of Nagaon to the state capital Guwahati has led to the development and urbanization of the district. Nagaon is also the most densely populated district (604 persons per sq. km) followed by Dhubri (584 persons per sq. km). The high fertility in these districts can again be explained by the fact that while Dhubri, besides experiencing heavy immigration due to common border with Bangladesh along with Nagaon is again a predominantly Muslim dominated area, 70.45% and 47.19% respectively. Tinsukia being a highly commercial centre has migrants from most parts of India like Bihar and Uttar Pradesh to work in these industrial undertakings. The fact that it is an area with major insurgent activity could also be related to the high level of fertility.

Certain other unexplainable aberrations like Jorhat which despite being relatively developed district with the highest female literacy rate, moderate degree of urbanization and having many colleges and university has a high CBR. On the other hand Goalpara, Morigaon, Hailakandi besides being poorly developed and characterized with predominant Muslim population (50.18%), (45.31%) and (54.79%) respectively have CBR lower than the level commensurate with their development.

It is, however, no coincidence perhaps that the areas where development per se cannot explain the level of prevailing fertility are also the areas where insurgency had been most active in the previous decade. Examples are Karimganj, Tinsukia, Kokrajhar, Nagaon, Sibsagar, Jorhat and Karbi Anglong. There may be other causes too and so the issue is left open to further investigation.

By 2001, the differences between the observed CBR and estimated CBR have reduced considerably. Kamrup, Dibrugarh, Jorhat and Sibsagar have the lowest levels of CBR which is more or less at par with the development. The maximum difference continues to be observed for Karimganj, Goalpara, Dhubri, Nagaon, Morigaon and Hailakandi. Thus it can be surmised that the aberrations observed during 1991 have been diluted by 2001 and the fact that insurgent activities during the last few years have subsided could in a way be attributed as one of the probable causes.
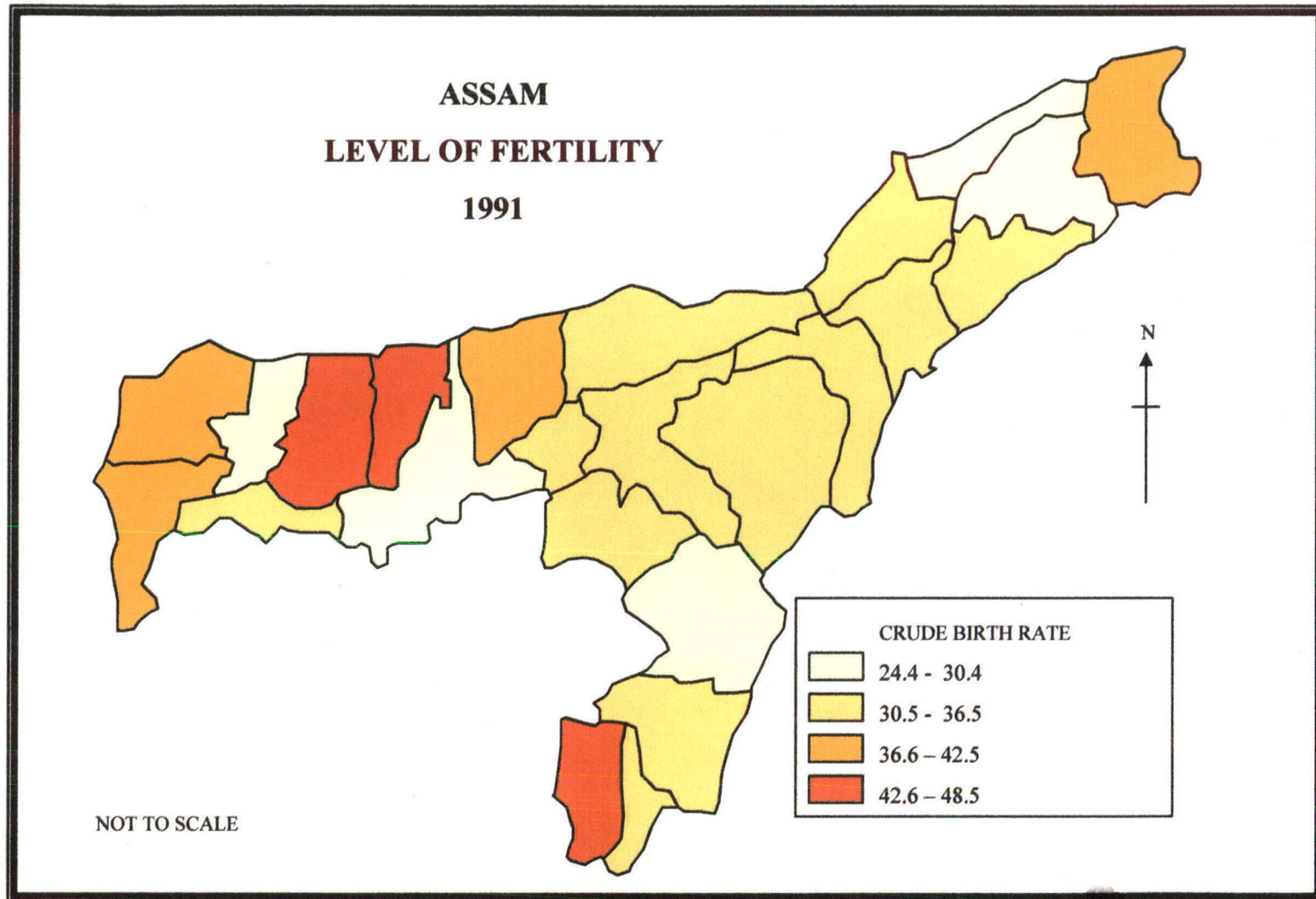
Fig. 5.5

ASSAM

LEVEL OF FERTILITY

1991

N

CRUDE BIRTH RATE

24.4 - 30.4

30.5 - 36.5

36.6 – 42.5

42.6 – 48.5

NOT TO SCALE

Fig.5.6

ASSAM
LEVEL OF FERTILITY
2001

N

CRUDE BIRTH RATE

19.4 – 23.4

23.5 – 27.4

27.5 – 31.3

31.4 – 35.3

NOT TO SCALE

Fig.5.7

ASSAM

LEVEL OF MIGRATION FROM
OTHER COUNTRIES

1991

Arunachal Pradesh

Bhutan

Nagaland

N

Bangladesh

Manipur

Meghalaya

MIGRANTS AS PERCENT OF
POPULATION

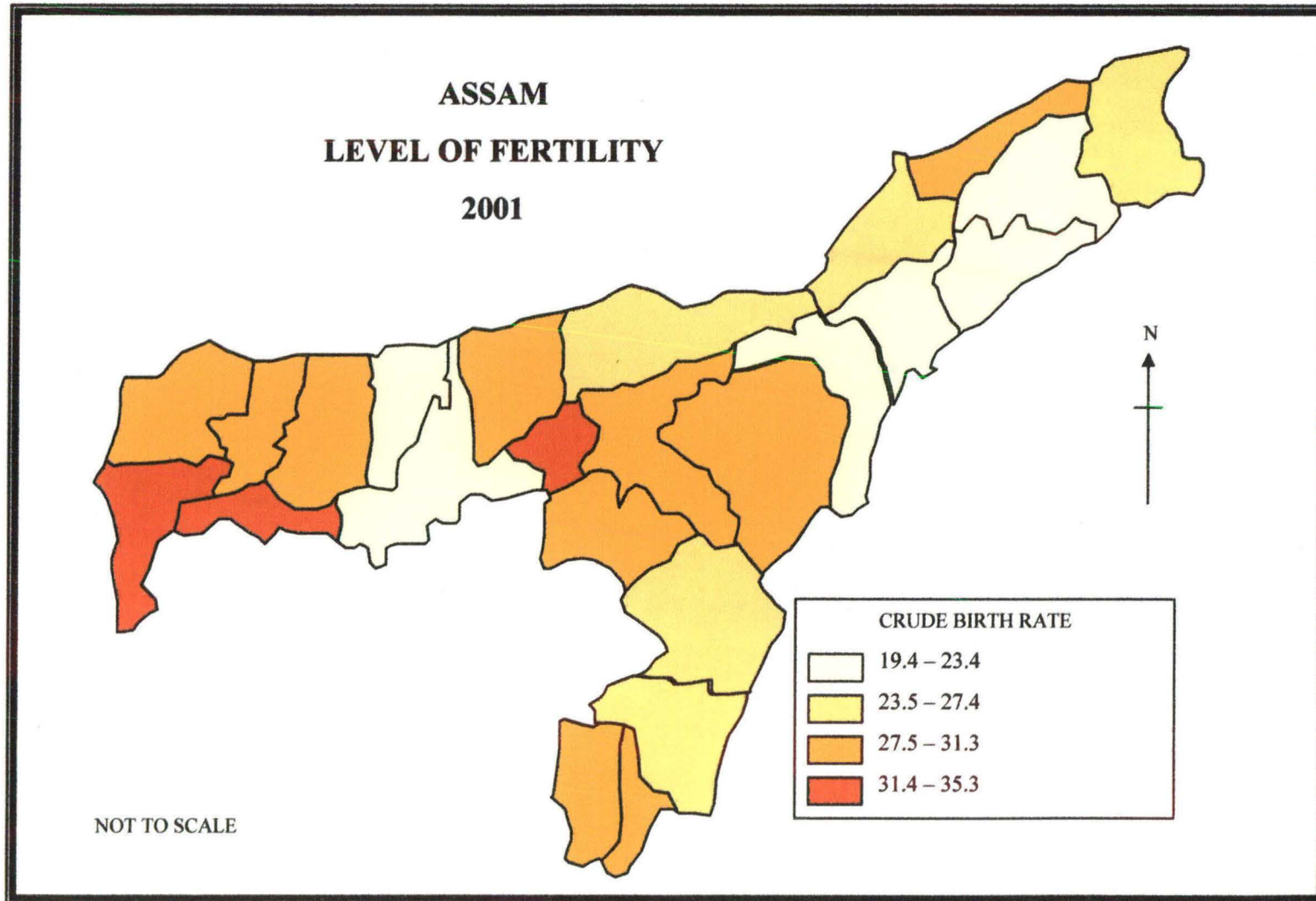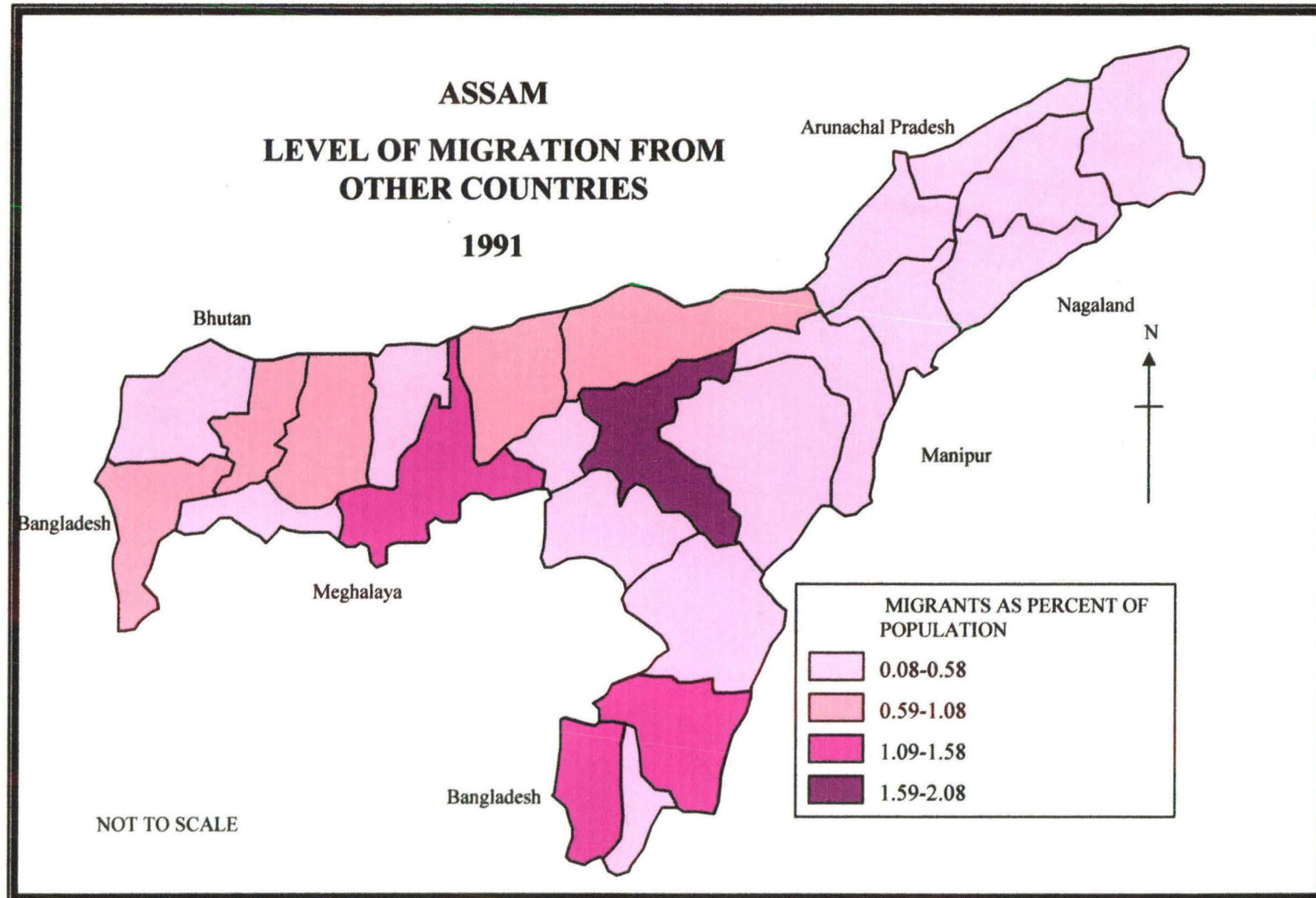0.08-0.58

0.59-1.08

1.09-1.58

1.59-2.08

Bangladesh

NOT TO SCALE

While it is evident that higher levels of development, i.e., urbanization, better amenities, literate population etc. does not necessarily imply that fertility would be low but a general correspondence between the two is to be seen in the districts within the state. What is to be noted is that the discrepancies are mostly observed in

• Districts having borders with Bangladesh and hence experiencing immigration, in particular Dhubri and Karimganj. Both these districts lie adjacent to Bangladesh and since a lot of the cross border migration takes place illegally it is often not accounted for in the official records. As such despite having a moderately high level of development the fertility levels are high.

• Districts with a predominantly Muslim population, i.e., Dhubri(70.45%), Barpeta(56.07), Karimganj(50%), Nagaon(47.19%).

• Districts with major insurgent activity, i.e., Kokrajhar which until recently was a Bodo militancy area and areas of ULFA strongholds like Karimganj, Tinsukia, Nagaon, Sibsagar, Jorhat and Karbi Anglong.

By 2001 the district level estimates of fertility (Guilmoto and Rajan,2002) indicate that although the fertility has declined throughout the state, yet the lowest levels are observed in the comparatively well developed districts of Upper Assam, i.e., Jorhat (2.2), Dibrugarh (2.4), Sibsagar (2.4) and the capital district Kamrup(2.6). The high fertility areas continue to be the border districts, Muslim majority areas and areas affected by the insurgent activities. These factors so dominate the landscape of the districts that even development as a whole has not been sufficient to curb the fertility levels and population growth continues unabated. On the other hand, districts like Morigaon, Hailakandi, Goalpara, Barpeta which had low level of development in 1991, exhibit the highest TFR in 2001.

A study of the fertility trends in both India and Assam from 1971 till 2001 shows that while in the 70's the fertility level in the state was considerably below the national level but towards the end of the decade it was above the national level. During the 80's the fertility in the state remained above that of India throughout. Thus the stall in the fertility decline

post-emergency was greater and also sustained over a longer period of time in Assam than in India as a whole. In 1990-2001 the gap between the state and national level fertility has narrowed down but Assam still continues to have higher fertility.

For an enquiry into the probable causes, the development level has been compared with the prevailing level of fertility. The state level analysis shows as expected that the north Indian states comprising Bihar, Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh have higher fertility level than that predicted by the given level of development. The southern and eastern states have fared much better with Kerala taking the lead. This pattern has been consistent more or less from 1981 to 2001. However, for the state of Assam the gap between the observed and predicted has considerably narrowed done by 1990 and by 2001 the state had higher observed CBR than the predicted. From this, it can be surmised that the state had lost the benefits it earlier enjoyed by virtue of it being an eastern state. Both the state level as well as the district level analysis indicates that there has been stall in the process of fertility decline in Assam. While in 1981 although the fertility was lower than that predicted by the level of development, by 1991 it becomes commensurate with it. By 2001 the fertility, however, has become higher than the predicted level. Thus, the conclusion that can be drawn is that in 1981 there were factors other than the development indicators, which kept the fertility lower than the predicted value. By 1991 Assam had lost the advantages it enjoyed in the previous decade and actual fertility is equal to the predicted fertility. In 2001 the observed fertility being higher than the predicted it can be said that even with better development conditions prevailing, Assam had higher fertility. So there are factors other than the development indicators in operation now, which are keeping the fertility higher.

The conditions prevailing in the state from the early 1980's onward can be attributed, as one of the factors affecting the stalling of fertility level yet such a conclusion cannot be drawn without a more in-depth study. Most of the studies in the area are centered around the problem of insurgency and the in-migration from neighbouring areas, other demographic variables affecting the population structure tend to be sidelined or overlooked and this aspect needs to be explored.

Chapter 6

Conclusion

Chapter 6

Conclusion

"Throughout the world there is great interest, even popular interest, in the problems of population growth. One hears them discussed everywhere by all manner of people, from the peasant and slum-dweller to the statesman and scholar. Curiously enough, in spite of this universal interest there is no universal understanding about either the nature of the problems or the paths along which solutions must be sought. Indeed, it is difficult to find a proposition about population that has not been made and contradicted by someone" – Frank.W.Notestein (1945)

It is indeed ironical that, the theory of Demographic Transition, which envisaged consistent declines in birth rate with the process of modernization of a nation, propounded by Notestein himself, has been refuted over the ages. The theory based on experiences of Western industrialized countries could not be applied in subsequent years to the developing world and in many cases stalls in the fertility decline have been observed in countries, both developed and developing. The reasons for the stall are varied and the experience of different countries are unique in that the slowing down of the pace of fertility decline has been a function of the interplay of the existing social, political, economic, and cultural backdrop. However, governmental intervention in the form of policies and programmes remains the dominant factor that guides the course of population dynamics.

India embarked on the path of Family Planning after independence and as early as in 1952 had the distinction of being the first country in the world to launch a nation-wide family planning programme with full government support. However, a stall in fertility transition was noticeable for India in the period immediately following the emergency in 1975-76 during which the ruling government envisaged a series of fundamental measures

to check population growth which included the permission to state legislatures to enact legislation for compulsory sterilization. The subsequent Janata government that came to power in 1977 revised many of the measures announced in the National Population Policy of 1976, especially those relating to compulsion. The Family Planning Programme was renamed as Family Welfare Programme to make it more acceptable and to include within its purview other measures for the improvement of the quality of human life. Despite this birth rates rose all over the country for a brief period and this was seen as a backlash effect of the coercive measures that had been imposed during the emergency.

Unlike the rest of the country which resumed the downward trend in fertility rates thereafter, in Assam the stall was sustained over a longer period of time. Both the Sample Registration System data and the Age Specific Fertility Rates obtained from National Family Health Survey confirm this. A decomposition of the Crude Birth Rates to assess relative contribution of component parts for India and Assam do not reveal any deviation between the two and as such the stall in fertility decline in the state must be explained in the light of extraneous variables. A look at the contraceptive acceptance rates again marks the year 1979 as the point of deviation from the All India trends.

This period of stall in the state coincided with the start of the Assam agitation and subsequent years witnessed a gradual breakdown of law and order within the state as militant insurgency established its foothold and spread its tentacles. The political turmoil that gripped the state adversely affected every aspect of social and economic life. The state reflects a complicated human landscape that has superimposition of traditions, backgrounds, priorities and interests. Though not lacking in natural or human resources , the state of Assam caught in the web of governmental instability, sustained civil disobedience campaigns and ethnic violence has lagged behind in development. The state level regression analysis done over three time points – 1981, 1991 and 2001 is indicative of the fact that while in 1981 although the fertility was lower than that predicted by the level of development by 1991 it becomes commensurate with it. By 2001 the fertility however has become higher than the predicted level. Thus by 1981 there were factors other than the development indicators used in the analysis, which kept the fertility lower

than the predicted value. By 1991 Assam had lost the advantages it enjoyed in the previous decade and actual fertility is equal to the predicted fertility. In 2001, the observed fertility being higher than the predicted it can be said that even with better development conditions prevailing, Assam had higher fertility. So there are factors other than the development indicators in operation now, which are keeping the fertility higher. At the sub – regional level done for two time points – 1991 and 2001 no clear relation emerges between development and fertility levels. By 2001 the difference between the observed CBR and predicted CBR narrows down and the deviations are mostly restricted to the districts with common border with Bangladesh, Muslim majority areas and politically disturbed districts.

The role of militant organizations cannot be sidelined in the inability of the state to deliver its family planning goals. When an organization arrogates to itself the power of determining the culture of a community, it not only contributes to an escalation of violence in society, but also wipes out the other possible alternatives and disciplines, the other possible cultural forms, with a single, pre-defined type. The periods of political upheaval and militant insurgency coincide with the poor performance of the family planning programme. No programme of family planning in a state can really succeed without the full support of its government and people. In societies with a low level of development, an important dimension to curbing rapid population growth is the role of policies and programmes, particularly the information and advocacy components of the programme and the role of Government in this cannot be undermined. With frequent changes of power and barely any co-operation between the state government and the centre it can be no surprise as to why population policies and programmes fail to perform. Unless drastic measures are adapted to source funds internally it may be difficult to sustain the momentum in family planning service delivery.

While the breakdown of state machinery and the inability to implement the Family Planning Programmes are the reasons for a stall in the fertility decline, the problem when viewed in the historical perspective it can also be said that a perceptible change in the

mindset of the Assamese people could have also contributed to the same. When a group of indigenous people in an area, over the years witness the continuous influx of foreigners who threaten not only to take over the meager economic opportunities available but also to wipe out the their very identity, civilization and culture, perhaps it is only natural for them to make an attempt to increase their population size. In a multi-community society, every community tries not only to preserve its own identitiy but also to enrich itself to glorify it as far as it can. The tendency to enrich and empower their community strength is possible only through increasing the numerical strength of the community. Similar examples have been cited in case of Malays where in the face of increasing population growth of other ethnic groups of Indians and Chinese the Malaysian government adopted a pro – natalist population policy. If the rate of growth of population of all sections of the society remains the same, demographic balance is not feared disturbed. And once it is disturbed, it initiates the atmosphere for which the very population policy of a small family cannot be implemented. Without any coercion and strong lucrative inducement, all sections cannot be expected to practice the family planning measures with equal vigour. Rather when there is some ulterior motive like religious expansion, political domination or cultural suzerainty, such a population policy has to be kept in cold storage (Sarma, 2002).

What has come to light is the fact that migration has been and continues to be an important factor in population growth of the region, rather than fertility. The colonial conquest of Assam in 1826, and the accompanying economic transformation opened up the province as a land frontier, attracting large scale immigration of both labour and enterprise from the neighbouring provinces. The issue of immigration from East Bengal had caused political instability in the area prior to the independence and partition of India in 1947. However, between independence and the Assam movement that began in 1979, it had not been a subject of major controversy. Two factors that helped keep the migration issue out of the political agenda were, first, the centrality of language issues in defining the contours of ethnic conflicts in the state and second, the aggregation of interests within political parties, primarily the Congress, but in other parties as well,

which in effect produced a tacit agreement among political leaders not to raise this explosive issue (Baruah,1986).

In 1971 the creation of Bangladesh was perceived by the Assamese leaders as an alarming development and as the influx of Bangladeshi's continued unabated, a growing apprehension about the growth of non-*Asamiya* groups living in Assam captured the imagination of the people. With the start of the Assam movement in 1979, the issue of Assam's demographic transformation as a result of immigration returned to the state's political agenda with a vengeance. Since then it has continued to dominate every aspect of the state's existence. Thus the implementation of measures to check the in migration is a priority area for the State Government and the requisite will to properly implement the Family Planning Programme might be lacking.

The study is a modest attempt to understand the population dynamics of the state of Assam. Being a state having a high rate of growth of population since 18th century, it is only in recent years that the growth of population has slowed down. The economy of Assam is more rural and agricultural- based than the rest of India and even after five decades of independence, this region has remained poor and underdeveloped. The continued underdeveloped condition of this region has induced many political outfits to clamour for rights of self determination and even sovereignty. This has led to a breakdown of the state machinery over time and as such the inability to deliver the family planning programmes.

As long as a society is afflicted by the ills of a fast growing population it cannot expect to carry forward the goals of economic and social development. It is imperative to rise over narrow sectarian interests and promote effective population control measures. The family welfare programmes should be initiated honestly and sincerely since by evolving family size, it will not only increase the per capita availability of food but also result in all round facilities including healthcare. The Government should provide various social services like education, medical aid, labour welfare and other services for social and economic

security of the weaker section of the population. Government should establish the requisite institutional mechanism and enabling environment at all levels of society to ensure that population factors are appropriately addressed within the decision making and administrative process of all government agencies responsible for economic, environment and social policies and programmes (Dutta, 2002).

Governmental initiative without people's participation is not bound to make much impact. One of the significant effects of the Assam movement of 1979 was that it put the issue of immigration firmly on the public agenda. Until the problem of illegal migrations is strictly addressed and steps are taken to curb it, the feelings of identity consciousness and a sense of relative deprivation among the Assamese would continue. The answers lie in more rapid and innovative economic development and not in division of a limited cake into smaller and smaller portions. With the recent help extended by Bhutan in flushing out the ULFA camps in the country and formation of the Bodo Territorial Council, the insurgent activities have to an extent been curbed.

Population changes are often barely perceptible by human conception of time, yet they may affect profoundly affect the course of events. It is in this context that the stall in fertility decline during the decade of the 80's in Assam assumes significance. The timing of the stall, coinciding with the beginning of the Assam unrest over the issue of immigration and also the fall in family planning acceptance, point to the fact that the destabilizing forces that came into operation had a major role in maintaining the stall over a longer period of time than the All India levels.

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