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Long-Term Demographic Trends in North-East India and their Wider Significance, 1901-2001*

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Introduction and Background

India's north-eastern region is extraordinarily diverse, distinct, and indeed distinguished on several counts. Apart from bordering itself with a few neighbouring countries, the entire land is a mixture of disparate races, civilizations, culture, and languages. The so-called north-eastern region (NER hereafter), which gained a definite geographical identity only after India's independence, comprises currently of the eight states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. Topographically, the region is a mixture of hills and plains, with abundance of rainfall, wide bio-diversities, and varied climatic conditions. While Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Sikkim are almost entirely hilly, Assam is largely a plain. The hills, while spreading across as much as 70 per cent of the entire landscape of NER, accommodate only about 30 per cent of its total population. There are more than 160 scheduled tribe groups in the region, with estimated 220 languages of Indo-Aryan, Sino-Tibetan, and Austric language families being spoken. What, however, distinguishes NER – perhaps most tellingly – is a relative dearth of academic interest, reliable information, and insightful research on the region. Among many aspects and dimensions of inquiry and research on the region, its demography is – for almost obvious reasons – central to its deeper understanding, its problems,

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and possible remedies. Unfortunately, the existing literature on the demographic trends and characteristics in this region is conspicuously thin. In fact it is only recently that a few academic attempts at the examination of some specific demographic indicators e.g. reproductive behaviour, mortality, status of women, and migration – albeit mostly in the context of some specific locations and/or tribes of the contemporary states of NER - have been made (e.g. Deb 2010; Nayak 2010; Saikia 2005; Tyagi 2000; Dass 1980; Mishra 1999). Systematic studies on long-term trends in the key demographic indicators and behavior at the state and region levels are pitifully rare, betraying a sound understanding of the patterns/ directions of changes in the key demographic processes across NER and its states in comparison with those of India as a whole and other regions and states.

In this context the chief object of the present paper is to identify patterns and features of long-term-trends of NER's population over a span of a century i.e., 1901-2001, with a view to delineating their wider ramifications for economy, society, and people of the region and beyond. The paper is divided into two broad parts. The first part deals with the historical demography of NER from 1901 to 1941. In fact, the scope for, and usefulness of, further research in India's historical demography in various Indian locations is so immense that Tim Dyson – a leading authority on India's contemporary and historical demography – recently made even a =call to arms' of the Indian demographers in promoting and furthering serious research in the country's historical demography (Dyson 2008?). For example, there is near absence of systematic historical demographic studies of NER – a region which thus continues to remain comparatively obscure and virtually aside the Indian mainstream society, culture and politics. In this situation, an attempt at the construction of a long term demographic perspective of NER cannot but be a welcome exercise. In the second part of the paper, we would attempt at capturing key features and major directions and dimensions of NER's demographic evolution over the post-independence period. Hopefully this will throw useful light towards understanding the economic, social, and political predicaments and prospects of the region and its constituent states.

Most of the current north-eastern states are among the =younger' of the Indian Union. At the time of independence, NER consisted

of Assam province and the =princely states' of Manipur and Tripura. The present day states of Arunachal Pradesh, Meghalaya, Mizoram, and Nagaland have been carved out of the erstwhile Assam province at various points of time between 1971 and 1987 as per the North-Eastern Re-Organization Act 1971, heralded by Nagaland's official separation from Assam in 1963. [We refrain from a detailed historical sketch of these events pertaining to the creation of these new states over a protracted period.]

PART I: THE PRE-INDEPENDENCE PERIOD

Trend of Population Growth in NER, 1901-1941: A Comparative Perspective

Table 1 contains information on the population of the North-eastern states and India as a whole for about fifty years preceding Independence. Total population of NER increased from around 4,331 thousands in 1901 to 8,741 thousands in 1941. While the decadal rate of population growth at the all-India level remained below 15 percent during 1901-11 to 1931-41, it was much higher in NER. However population growth rates over this period show a rising trend at the all-India level, but the corresponding figures for NER (while conspicuously higher than the former) do not evince any distinct trend (although it increases marginally). However, among the individual states within NER there was substantial variation in the rates of population growth during this period (Table 1).

It is of interest that whereas at the national level population growth rates fluctuated substantially during 1901-11 to 1931-41, the extent of variation was relatively less in the NER. This is in large part the reflection of a relatively lesser variation in the population growth rates in Assam, Tripura and Manipur (three of which together constituted nearly 90 per cent of the NER population). The latter in turn, the possibility of data errors aside, could be (at least partially) an outcome of relatively lesser incidence and intensity of epidemics, famines, and similar crises in these regions vis-a-vis other parts of India.

For example, prior to the 1920s, the decadal population growth rate at the all-India level never exceeded 6 per cent, resulting largely from frequent occurrences of natural calamities, epidemics, diseases, and wars that kept mortality rates very high. During 1871-81 decade there occurred the great Indian famine of 1876-78; during

1891-1901 decade two major famines, 1896-97 and 1898-99, occurred in quick succession; again in the 1911-21 decade, the great influenza epidemic of 1918 struck large parts of India. Each of the former crises killed millions of human lives (see e.g. Maharatna 1996 for the estimated magnitudes of =excess deaths'). To quote from Kingsley Davis' classic book (1951:28): .[i]n the decades of negligible growth the trouble lay in one or the other of these catastrophes.… Indeed these calamities were largely responsible for the lack of growth of population in the decade during which they occur, because the provinces and states most affected by them were precisely those that showed the lowest growth rates.. In contrast, the overall demographic scene of NER (at least) prior to the 1920s had been somewhat different in that it had experienced much lesser fluctuations of population growth, reflecting, and/or indeed resulting from, a *relatively lesser* infliction of natural calamities and crises, epidemics, diseases, and perhaps wars than did other regions of India in this period (see Table 1).

In the 1901-11 decade, for instance, population growth rate in Assam 'province', whose geographical area was roughly equivalent to today's NER exclusive of Tripura, Manipur, and Sikkim, was considerably higher than the corresponding all-India figure. This, as we would argue shortly, seems attributable to two-fold reason: one, comparatively higher rates of natural population increase, and relatively large immigration into Assam. As the Assam Report of 1921 Census writes, .[t]he cause of the great increase between 1901 and 1911 were improvement in the tea industry after 1905, absence of unusual calamities and recovery of the people after the previous bad decade, which has left a preponderance of people in the prime of life, leading to a rapid rate of reproduction. (Census of India, 1921, Vol. III, Assam Part I Report, pp. 4). Moreover, particularly high rates of population growth were recorded in the Hills (comprising the present day states of Mizoram, Meghalaya, and Nagaland and Manipur). In explaining this, it seems worth quoting what was written in the Assam Census Report of 1911 (p.22):

> "The population of the Hills has increased by 18.5 per cent since 1901…. The cause of the large increase in the Naga Hills has also been explained as being mainly due to increase in territory: the residual growth is almost entirely natural and is due to general peace and uneventful progress. The check to the growth in Khasi and Jaintia Hills, caused by the after

> effects of earthquake of 1897, has now been removed and the district as a whole shows the satisfactory increase of 16.2 per cent, though the natural population has increased by only 14.9 per cent on account of the increase in immigrants….The Garo Hills show an increase of nearly 15 per cent, but the natural population has grown by 16.3 per cent and the difference is apparently due to a check on immigration to the plain mauzas on the north-west of the district, which have become much more subject to floods since the earthquake of 1897. In Lushai Hills population has grown by 10.6 per cent. The natural population of the district has grown by 16.4 per cent and the difference is due to greater emigration. Practically the whole of the increase in the State of Manipur is due to natural growth: in the valley section population has grown by 16.67 per cent and in the hill section by 31.68 per cent: no doubt part of the increase in the latter is due to accurate enumeration".[1]

Thus, both improvement in the coverage of enumeration and relatively high natural increases of population appear to have accounted for the recorded increases in enumerated population in the north-eastern states during 1901-11 decade.

It is notable that the difference in population growth between NER and India as a whole became relatively pronounced during 1911-21 decade, within which had occurred the great influenza pandemic of 1918 across India – albeit in varying intensity. That the pandemic did not take a very severe proportion in Assam was noted in the Sanitary Commissioner's Report of 1919. In fact, as per the estimates of the Sanitary Commissioner of the province of Assam, the death toll due to the influenza pandemic of 1918 in the Assam province was among the lowest for that year [with only the provinces of Bengal, Bihar and Orissa, and Burma having experienced even lower death rates than Assam] both in terms of absolute number of deaths, as well as proportion of total population wiped out. To quote from the former: "[t]he epidemic reached its greatest intensity in the central, northern and western parts of the Indian empire. In

[1]There appears to be a striking difference in the population growth rates reported in Table 1 and those quoted in this excerpt here. This seems attributable to the fact that the former have been calculated on the present geographical area of the North-eastern states rather than the area at the time of 1911 census. However, this discrepancy cannot have serious bearing on our present explanation.

comparison with these regions the provinces of Bengal, Burma, Bihar and Orissa, Madras and Assam were only slightly attacked. There was a gradual diminution of intensity toward the east. [Public Health Reports (1896-1970), Vol. 34, No. 30 (July 25, 1919), pp. 1624; accessed on 13 September 2010]"

However, the relatively higher population growth in NER vis-à-vis all-India was contributed largely by Assam, Tripura and Manipur, while the remaining states (which comprise a miniscule portion of total NER population) bore the brunt of the influenza pandemic more severely: For example, as the Census of 1921 report writes, "…. [the Hills] are sparsely populated, but in parts suffered very severely from the influenza epidemic, both in direct mortality and in the after-effect on the birth rate". (*Census of India 1921 Assam Report*, p.7**)**. As *The Assam Manipur and Tripura Report of 1951 Census* notes, in 1921-31 decade there was no violent epidemic in the region, and the public health was at its somewhat normal level and the population growth in Assam, though the highest recorded till then, was chiefly due to natural increase (not immigration).

Differential population growth rates between NER and all-India had begun to get narrowed since 1921-31 when the process of growing control over major communicable and non-communicable diseases took off, leading to secular declines in mortality across the subcontinent over the following decades (Visaria and Visaria 1994). However, the fact of higher population growth in NER than the average level for the whole subcontinent throughout pre-Independence period is of interest, and it does deserve a deeper investigation and fuller explanation.

Fertility and Mortality Trends in North-East India, 1901–1941

Population change in a region is a result of interplay of fertility and mortality rates when the region is closed to migration. The latter can assume importance in a situation of substantial movements of people across boundaries (national or international). In NER migration has indeed been relatively important in shaping population change in NER during much of the pre-Independence period (we shall return to this later). However, it would be useful to begin by examining natural increases of population in NER in comparison with those in all-India. In particular, it is of interest as to whether natural rate of population increase had been higher

(with commensurately higher birth rate and/or lower death rate) in NER vis-a-vis all-India during the pre-independence period under consideration. However, since birth and death rate estimates for NER as a whole are unavailable for the period, we use Assam's respective estimates as proxy for NER during 1901-1931 (see Table 2). [Assam used to constitute nearly 80 per cent of the total population of NER. However, one should be cautious as these statistics relate only to Assam Plains and they generally do not include the population (who are predominantly tribal) in the Assam Hills.]

While the registered birth rate at the all-India level declined from around 37 per thousand in 1901-11 to 34 in 1931-41, Assam recorded a much larger drop from 35.7 to 20.9 during this period. The lower levels of registered birth rates in Assam vis-à-vis all-India in the first half of the twentieth century could reflect (at least partly) a larger degree of under-registration of births in the former. Indeed there exist some alternative and even more reliable estimates of the vital rates for this period. One of the widely acknowledged birth rate estimates at the all-India level for the colonial period is provided by Davis (1951). The latter estimates show a (meagre) decline from 49.2 births per thousand in 1901-11 to 45.2 in 1931-41. Although the birth rate estimates by Davis for this period have been considerably higher than those based on registration data, the pace of *decline* in birth rate during 1901-11 to 1931-41 has been strikingly similar. Overall, the all-India level estimates by Davis suggest that the decline in birth rate was very gradual, though steady, during a few decades prior to the Independence.

However, the birth rate estimates by Kingsley Davis have not gone entirely undisputed. As Mari Bhat (1989) has argued, there has been an overestimation of birth rate at the all-India level for the first part of the twentieth century; and this most likely gave rise to an element of exaggeration in the magnitude of its decline in the latter part of the pre-Independence era. A birth rate of 48 per thousand estimated by Davis at the beginning of twentieth century perhaps seems too high. Indeed, the estimates by Davis are amenable to improvements, as there are serious doubts both about the reliability of the reported population under age ten in the Census as also about the validity of mortality estimates used for the calculation of the birth rate from the official life tables. The official life tables for

the period under consideration were based on the mortality experience of some remote communities and the population of females had been derived by applying the existing sex ratio of the population. Even more serious was the problem of the prevailing actuarial practice of eliminating the effects of catastrophes while estimating the 'normal' level of mortality - a practice that seriously jeopardized the reliability of the actuarial mortality estimates. Mari Bhat, by employing lesser restrictive assumptions (e.g. constant marital fertility rate in the pre-Independence period and the estimated child mortality levels for the early 1960s), arrives at an alternative set of birth rates for India for the period 1901 to 1961. The author's estimates (not shown in Table 2) turn out to be lower than those of Davis and there is no substantial decline in birth rate found at the all-India level during most of this phase (see Bhat 1990:1207-8). According to the former's estimates, the birth rate remained almost constant at around 46.7 per thousand from 1901-11 to 1931-41, and then declined marginally in the subsequent decade to 45.4.

Now, registration data for erstwhile Assam province are notoriously deficient for the period under consideration. The data are inflicted by biases due to migration, apart from possible/common errors of registration coverage. As per estimates by Kingsley Davis (1951), percentage of total births registered during 1926 to 1930 was only 54.4 per cent in Assam, as against the national average of 74.7 per cent. Also, there are signs of deterioration of the registration coverage during this period. As the Report of the Census 1951 notes, .[t]he migration-cum-registration error was as high as 11.8 in 1921-30, falling to 8.8 for 1931-40 and again rising to 12.9 for 1941-50. (*Assam, Manipur and Tripura Report, Census 1951*, p.100).

There exists, if at all, very little or even almost negligible body of academic/demographic research on the estimation of the vital rates of Assam for this period, except perhaps one study by Ghosh (1956), which seeks to provide reliable estimates of fertility and mortality indicators (e.g. infant mortality rate) for Assam in the pre-independence period.[2] As suggested by the study, the birth rate in Assam was considerably and consistently higher than that at the

[2]The estimates by Ghosh could be considered relatively reliable, as his estimates of under-registration of births appear pretty close to those arrived at by Kingsley Davis for the period 1926-30. The details of the methodology are contained in the notes to Table 2.

all-India level. In 1911-20 the birth rate turned out to be as high as 50.3 per thousand in Assam as compared to 45.5 at the all-India level. This happens to find corroboration of the estimates noted by J. McSwiney, the Census Commissioner of Assam, in the 1911 Report: 52

> "[I]n 1891 Mr. Gait calculated the birth rate to be 49.3 per mille, which practically agrees with my estimate, though it was based on a different method of calculation: of course in a matter of this kind it is impossible to ensure exactness, but I am inclined to think that in actual act the rate is very much nearer to 50 than to 45 (Census of Assam, 1911)."

As against a decline observed at the all-India level, there was an increase of the birth rate in Assam by nearly 10 point from 50.3 per thousand in 1911-21 to 59.8 in 1931-41. In any case, there appears to have been no sign of downward movement of birth rates in Assam between 1911 and 1941.

A close look at the birth rate estimates for all-India (both by Davis and Mari Bhat) and Assam/NER reveals distinctly higher levels in the latter during the pre-Independence period. Likewise, the pace of decline in the birth rate had been somewhat faster at the all-India level than in Assam if one goes by Davis' estimates. However, this conclusion does not perfectly tally with the all-India birth rate estimates put forward by P.N. Mari Bhat. In any case, it seems almost certain that the birth rates in the NER in the pre-Independence era were not only above the respective national averages, but, unlike at all-India level, there was no discernable sign of decline in the former. This distinction of NER's birth rates prior to independence reflects a real differential in *reproductive performance* or fertility rates.

First, in 1921-1941 the proportion of females aged in the reproductive period, 15-49 years, had not only been lower in Assam than the all-India level, it had also decreased in the former (Chaudhuri 1982). Second, General Marital Fertility Rate (GMFR), the number of births per thousand married women aged 15-50 – a measure which focuses on women's reproductive performance – is somewhat immune to the distortions of differential age-sex compositions and had indeed been higher than the all-India levels during 1911-20 to 1941-50 (see Table 2). Whereas GMFR had declined from 237 per thousand in 1911-21 to 228 in 1931-41 at the all-India level (a

decline by nearly 4 per cent), it recorded an increase (from 284 per thousand to 334) in Assam (an increase of around 18 per cent). Thus, the higher (and rising) GMFR, coupled with a lower (and falling) proportion of women in reproductive age groups, in Assam vis-à-vis all-India reaffirm a *higher* fertility in the former (i.e. in NER at large) during the first half of the twentieth century. While the foregoing discussion refers chiefly to the Assam Plains, the conclusion of a higher natural rate of population growth rate than all-India may not hold good for the Assam Hill areas. In any case, in the pre-Independence period, especially from 1911 to 1931, the record of higher population growth rate in Assam is not surprising in the light of persistent inflows of Bengali Muslims (and perhaps of tribal people too) as immigrant workers in Assam's tea plantations; see Weiner 1983). In fact, there had been considerable rises in the proportion of Bengali-born people in total enumerated population of Assam during this period (Davis 1951:119). The Bengal-born immigrants (of whom around 80 per cent were Muslims) into Assam province 'increased between 1881 and 1931 by 109 per cent' (Davis 1951:119). There might have been a two-fold clue to the relatively higher fertility in Assam (vis-à-vis all India) in the first half of the twentieth century: first, the fact of sustained and substantial inflows of *relatively prolific* Muslims and 'low caste' peoples mostly as 'coolies' in Assam's flourishing tea estates (Davis 1951:121); second, large-scale conversion of tribes of the region into Hindu religion of which many marriage practices and norms are conducive to higher fertility (for a detailed discussion on the latter see Maharatna (2004).

We now turn to the temporal movements of death rate in Assam/ NER vis-à-vis all-India. Crude death rate (CDR) for India, as estimated by Davis, shows a somewhat secular decline between 1901-11 and 1941-51, except for an increase in 1911-21 decade due to an enormous number of excess deaths in the wake of the great influenza pandemic of 1918. That the CDR declined by nearly 11 points between 1911-21 and 1921-31 from 47.2 per thousand to 36.3 could be seen as a precursor to India's entering into the so-called 'second phase' of demographic transition. A secular decline in the death rate, which had commenced at the all-India level since around 1911-21, seems discernible for Assam too even from its grossly underestimated registration-based death rates (see Table 2), as under-registration does not necessarily preclude reasonably

reliable indications about time trends. For example, the registered CDR in Assam recorded a decline from nearly 31 per thousand to 17 between 1911-21 and 1931-41, and itcontinued falling – albeit at somewhat slower pace as observed at the all-India level. In addition, the trend in infant mortality rate during this period confirms a declining trend in death rate in Assam. Thus, it can be said that a mortality transition that had set in at the all-India level by the late 1940's, had also begun in Assam prior to Independence.

Secular declines in mortality, particularly in infancy and childhood years, are generally recognized as a precursor to the demographic transition or fertility transition, as for example considerable reduction of IMR, child and adult mortality is likely to lead – with a lag - to sustained increases in the average family size even beyond an ideal level and thus to fertility reduction through some well-known economic, social, and biological mechanisms (see e.g. Dyson 2001). Significant and persistent declines in infant and child mortality tend to swell the average family size often beyond what is ideal or feasible or sustainable at the household level, calling for deliberate control of childbearing. Declines in IMR also lead to longer duration of breastfeeding that inhibits commencement of ovulation and hence the risk of pregnancy in lactating women. Such factors could make for oft-observed parallels in trends of fertility and infant mortality. Thus, differences in levels and trends of IMR between India and Assam could partly be indicative of possible differences in fertility, as the estimated levels of IMR during 1921-1941 in the latter were found somewhat higher than the former (Table 2).

In sum, the various pieces of evidence examined above point clearly to a strong plausibility of the higher rate of natural increase of population in NER vis-à-vis all-India in the pre-independence decades. Birth rates in Assam/ NER had been higher than that at the all-India level throughout this period. While it is difficult to be absolutely sure of the exact differentials in death rate, the evidence of much lesser inflictions of diseases, wars and epidemics in NER is suggestive (at least) of mortality levels of this region being no higher (or perhaps even lower) than the respective all-India levels during this period. Furthermore, though there is little information on the actual *fertility* levels in NER vis-à-vis all-India during 1901-41, GMFR estimates have been found substantially higher in Assam, indicating a higher fertility rate in NER than in the country as a whole during the

pre-Independence decades. In the following section, we would examine the role of migration in shaping higher population growth in NER, given that migration (especially immigration) could hardly have any significance in population changes at the all-India level.

Migration into North-east India, 1901-1941

Population movements and migration flows have been an important component of the population dynamics of the NER in the entire pre-Independence period under consideration, although they – both internal and international - could hardly have any perceptible influence on India's national population growth. As we would see presently, most of the in-migration into the NER during this time has been into the plains of the Assam province. Assam Hills and Manipur State had been relatively unattractive to in-migrants. However, Tripura experienced in-migration of considerable magnitude, especially during a few decades prior to the independence, so much so that in-migrants in Tripura constituted around 36 per cent of the total population in 1951 (Assam, Manipur, Tripura Census Report, 1951).

Historically, migration into the relatively fertile and sparsely populated Assam had been encouraged by the British colonial administration in its efforts to exploit untapped possibilities of augmenting agricultural production and revenue in general and supply of migrant labour in the tea estates of the state in particular. Since the commencement of Labour Laws around early 1860s, which allowed the importation of 'coolies' on contract from other parts of the continent, immigration into Assam province has been a steady and uninterrupted process. It is difficult to be precise about the exact timing of the onset of in-migration into Assam. However as has been pointed out in the Census Report of Assam (*Assam Report, Part 1, Vol. 4, Census of India, 190*1:13) a considerable influx of people had commenced from 1891. [It is reasonable to presume that a sizeable immigration into Assam commenced since the establishment of its tea estates as early as 1840s.] Indeed, during the decade 1891-1901, more than one-tenth of the population had been imported under provisions of the Labour Law. To quote from the Assam Report of the 1901 Census (pp.13):

> "In most other provinces of India the migrations of the people are spontaneous, and do not depend in any

> way upon the direct action of the Government, individuals crossing the boundaries of districts or provinces in search of land or grazing ground, or not infrequently, husbands or wives; but in Assam, the growth of the population largely depends upon the introduction of a number of people, who are brought up at the expense of European capitalist."

Assam had historically experienced four broad types of immigration prior to India's Independence (Devi 2007). First, with the growth of tea industry since 1855 and the subsequent shortage of local labour, the industry had started bringing in large number of labourers from Benares, Ghazipur, Chhota Nagpur and Bihar. In 1901, the total number of tea garden labourers were 6,54,000, constituting about one-tenth of the population of Assam. The second flow of immigration consisted chiefly of farm labourers from East Bengal (now Bangladesh) from around 1900 onwards. The third group of immigrants was from Nepal. Although up to the 1921 Census, the volume of Nepali in-migrants into Assam was relatively small [Devi 2007:7], the number of Nepali-speaking people swelled to 1,25,320 as per the 1951 census enumeration. The last group of immigrants consists of the people coming from the rest of the Indian subcontinent.

Whatever might have been the initial trigger to in-migration in Assam, the large-scale migration of a *voluntary* nature became well underway by the end of the 1901-11 decade (Census 1921 report). This went hand in hand with the reduction in the number of imported (or indentured) labourers into the Brahmaputra valley in subsequent decades. There was a major influx of tea garden labourers into Assam during 1901-11 and even more so during 1911-21 decade (Chaudhuri 1982). That the pace of influx of tea garden labourers had, however, slowed down by 1931, culminating in its almost complete stoppage by 1941 is clearly noted by Chaudhuri (1982:32-33):

> "After 1931, mass importation of labourers for tea gardens into Assam slowed down which was totally stopped by 1941 as the total number of tea garden labourers rose to 10, 00,000… In addition, there was migration of tillers of soil from the adjoining heavily populated districts of former Bengal (primarily from Mymensingh), and although their numbers were

> relatively small compared to the tea garden labourers, they were quite substantial. Between 1901-11, they increased fourfold to 2,64,000. By 1921, they increased to 3,50,000, and by 1931 the number of settlers from East Bengal amounted to 5,75,000."

In fact, inflow of migrants continued – albeit with declining magnitude - from East Bengal and Nepal, together with the importation of tea garden labourers well into the 1950s.

Although it is difficult to be certain about the exact magnitude of migration, census data are indicative of swelling of population size of Assam as a consequence, in large part, of the volumes of in-migration being persistently in excess of out-migration during the period under consideration (see Table 3). Based on the census data for NER, a study by Bandyopadhyay et al (1999) shows that in-migration into NER increased in absolute numbers from 1901 to 1931 and declined thereafter. Even in terms of the proportion of immigrants to total population, one sees the same pattern, namely, its increase from 16 per cent to 23 per cent between 1901 and 1931 followed by its decline to 15 per cent by 1941 (see Table 3). Table 4 presents detailed information on *net* in-migration into the major states of NER i.e., Assam, Manipur and Tripura for the same decades of the pre-independence era. The *net* in-migration into Assam and Manipur had increased by nearly 4 lakhs between 1911 and 1921, followed by a reduction in the magnitude of net inflows (by around 26,000) in the following decade 1921-31, after which there had been almost a drastic reduction in the migration flows in the 1931-41 decade.

It is, thus, clear from the foregoing that immigration had played a major role in the swelling of population size in the pre-Independence NER.[3] However, the natural rate of increase of population had been higher too in NER. For example, the difference in population growth rate between NER and India even after taking account of *net* in-

[3]Immigration can affect population growth in the receiving region in (at least) two ways. First and rather obvious one is direct increase in the number of people inhabiting the region. Second, and more indirectly, if immigrants happen to have higher (lower) fertility than the native population, this would, over a period, tend to pull the natural growth rates upward (downward), given an imperceptible difference in mortality rates between these groups. As noted already, in case of immigrant population of Assam, there are rather strong indications of somewhat higher fertility vis-à-vis that of the non-migrant people.

migration appears positive and substantial (Table 3). This reaffirms that apart from positive net in-migration, the higher NRIs had also contributed to the record of *higher* population growth rates in NER than those at all-India levels in the pre-Independence period. The higher NRI in NER in the pre-independence period is, at least partly, attributable to higher birth rates in the former vis-à-vis India, with fairly strong indications of former's higher fertility too (as reflected by a higher GMFR) during this period (see Table 2). This seems particularly true for the period between 1901 and 1941.

This said, there had been an increasing *relative* contribution of immigration to the higher population growth of NER during 1901-1931 followed by a tapering off in the growth of population net of immigration in 1931-41 (see Table 3). Although higher levels in both NRI and immigration flows in NER appear to have been two major forces for its higher population growth rates vis-à-vis all-India during the pre-Independence period, it is hardly possible – with the data constraints noted already - to ascertain the exact magnitude of the *relative* contribution of each. However, with the above broad demographic trends and differentials over the pre-Independence period as background, we now turn to the period following the independence

PART II: THE POST-INDEPENDENCE PERIOD

Population Growth in NER, 1951-2001

Table 5 presents information on decadal population change in NER and its constituent states since 1951. It is interesting that population growth rate jumped in NER immediately after the independence (around 41 per cent during 1951-61). This was at least partly a result of a surge in population influx into NER from the newly formed East Pakistan in the wake of the partition of India at the time of Independence in 1947. Although population growth rate in NER never touched the 1951-61 level in the subsequent decades, it remained generally higher than the pre-Independence levels (see Tables 1 and 5). Indeed, as Table 5 shows, the decadal population growth rate has been comparatively higher in NER vis-à-vis all-India during entire post-Independence period, with virtually all the states of NER experiencing higher rates of population increase than the national averages. Arunachal Pradesh, Mizoram and Nagaland have experienced the highest population growth rates particularly in the 1970s and 1980s. [Meghalaya witnessed relatively low population

growth rate]. During 1991-2001 decade, Tripura, Assam and Manipur evinced the lowest population growth rates within the NER.

In so far as population growth in NER in the post-independence period is concerned, it has been – like India as a whole – declining (except perhaps a marginal increase in the 1981-91 decade). In fact, a declining trend of population growth had set in NER somewhat earlier during 1961-71 than it did at the all-India level around 1981-91. However, the downward trend in population growth rate has not been discernible in all states of NER except in only three relatively larger states, namely, Assam, Manipur and Tripura. In fact, population growth rate in Nagaland has shown an increasing trend in the post-Independence period. Therefore, the overall declining trend of population growth of NER since 1951 is largely shaped by similar trends in Assam, Manipur and Tripura and is not shared by all the states within the region. Among the remaining states, there was a surge in the growth of enumerated population in Mizoram during 1971-81, and despite its decline thereafter, it remained above the level of 1961-71 decade. Similarly sudden has been the rise of population growth in Sikkim during 1971-81, and notwithstanding a decline in the following decade, it increased yet again in 1991-2001 decade. Meghalaya reveals no distinct direction in the trend from 1961-71 to 1991-2001. Thus, one remarkable feature of population growth in NER has been its substantial intra-regional divergence across states, while the overall regional trend has been shaped largely by those of the three relatively major states within NER.

Wide fluctuations in the growth rate of population in most of these states seem to be a (at least) partial ramification of the large flows of in-migration (particularly of 'illegal' variety) in ebbs and flows into NER bordering with a few foreign countries inflicted with persistent political, social and economic instabilities and turmoil. Although official statistics show a gradual decline in the volume of in-migration in the NER over the post-Independence period, there is a considerable amount of anecdotal or unofficial evidence, pointing to substantial 'illegal' in-migration into the NER, of which hard official/authentic data are rather 'conspicuous by its absence' (see e.g. Weiner 1983; Baruah 1989; and Kotwal 2010). Nevertheless, changes in the demography of states like Assam and Tripura particularly in terms of religious and ethnic composition of population, as well as the dramatic reduction in the size of certain communities in the neighbouring

nations (Bangladesh in particular) provides fairly strong – albeit indirect - vindication of the continuing infiltration into the region.

For instance, in the 'Report on Illegal Migration into Assam', Sinha (1998) notes that during each decade of the period from 1951-61 to 1981-91, there have been huge differentials in the population growth rate between Hindus and Muslims in Assam (the latter being substantially higher than the corresponding rates for the former, except for 1961-71 decade, in which a large scale exodus of the Hindus from turmoil-torn erstwhile East Pakistan might have taken place around the time of its being an independent country, namely, Bangladesh in 1971). Again, the report of the 2001 Census of Assam notes that as against growth of around 15 per cent of the non-Muslim population between 1991 and 2001, the growth of the Muslim population has been as high as 30 per cent. In addition, as has been observed by the North Eastern Congress Coordination Committee, between 1971 and 1990 there has been a reduction of nearly 75 lakhs Hindus in Bangladesh many of whom have most likely found their way into India's NER – especially in view of the porous nature of the border between NER and Bangladesh. It is notable that the proportion of Hindu population in Bangladesh declined from around 22 per cent in 1951 to just over 12 in 1981.

Although Assam and Tripura have been the major recipients of migrant people in the past, some other states of NER have of late witnessed considerable 'illegal' influx of people – possibly in sequel to 'anti-migrants movements' in the former. For example, as the report of the United Committee Manipur (2005) observes, the volume of migration from Myanmar, Bangladesh and Nepal into Manipur has been so large as to lead to marginalization of the ethnic groups belonging to this state. Coupled with such internal displacement of migrants within NER, 'illegal' migration could have, thus, contributed largely to the observed higher and greater fluctuating patterns of population growth in NER in the post-Independence period.

Apropos the *relative pace* of decline of population growth in NER vis-à-vis all-India (see Table 5), it has clearly been faster in the former for the entire period from 1961-71 to 1991-2001. This seems consistent with the initially higher levels of population growth in NER. However, this aggregate feature of NER has not been shared uniformly by its constituent states. In fact all states within NER have

not shared a decline of population growth rate. More specifically, between 1961-71 and 1991-2001, there have been *increases* in the growth rates of population in Mizoram, Nagaland and Sikkim, with Meghalaya showing a relative stability of population growth. Tripura, Assam and Manipur in that order have experienced largest pace of declines of population growth rate.

Putting aside the data-related deficiencies or distortions, a higher growth rate of population in NER (at least until 1991) with its concomitant divergences from the all-India patterns is of interest and deserves a deeper investigation and understanding. In the following two sections we examine consecutively the role and/or relative contribution of the two major demographic components of population growth, namely, the rate of natural increase (RNI) and net migration flows in the post-Independence period.

Trends in Birth Rate and Death Rate in NER, 1971-2001

We begin with a brief evaluation of the reliability and quality of demographic data pertaining to the post-Independence period. As is well-known, there are two principal direct sources of registration data for India and its states, namely, the Civil Registration System (CRS) and the Sample Registration System (SRS). Of these, the latter is generally considered 'superior', as the former is inflicted by massive under-registration and incompleteness of coverage. [In fact CRS data have not been published since 1994.] The Office of the Registrar General had initiated the scheme of sample registration of births and deaths under the SRS only on a pilot basis during 1964-65 and on a regular basis in all Indian states (except smaller states of NER) since 1970, with a view to providing reliable fertility and mortality indicators. Since then, the SRS is *the* official source on vital statistics on an annual basis and hence we would rely on it in our present analysis pertaining to post-independence period.[4]

[4]SRS, a dual record system, consists of continuous enumeration of births and deaths in a sample of villages/urban blocks by resident part-time enumerator, and an independent six monthly retrospective survey by a full time supervisor. The data obtained through these two sources are matched. The unmatched and partially matched events are re-verified in the field to arrive at an unduplicated count of correct events. The revision of SRS sampling frame is undertaken every ten years with the results of a new census. The sample design adopted for SRS is a uni-stage stratified simple random sample without replacement (except in stratum II, larger villages) of rural areas. In urban areas, the categories of towns/cities are divided into four strata based on the size classes.

SRS annual time series on vital rates are not available prior to 1971 in several Indian states including Assam, Manipur and Tripura, while SRS estimates for the remaining states of NER are unavailable prior to 1981.

It is fairly well-known that the SRS data are far from perfect, as they are particularly inflicted by incompleteness of registration – albeit in varying degree across states. A major source of defects in SRS data seems to lie in the outdated sampling frame in most of the states. In addition, these data are prone to be deficient in states with poor administrative machinery and/or with financial constraints. In this context it is worth quoting what Wells et al (1967: 374) wrote:

> "[m]ost of the problems are operational or administrative rather than statistical: (1) For various reasons, some states are slow in agreeing to assume financial and other responsibilities for the scheme. (2) In many states even after the scheme has been accepted there are delays in recruiting the staff, training and so forth. (3) The *most serious problem* in the whole project is maintaining control of field operations well enough at each stage *to insure that prescribed instructions and methodology are being followed*." (italics original)

Incompleteness of registration coverage under SRS has probably been diminishing – albeit rather gradually – over time (particularly from 1970 to 1990 in the major Indian states). While the 1972 Fertility Survey conducted in a 25 per cent subsample of the SRS found its under-registration of births by about 8 per cent, two subsequent inquiries (RGI 1984; 1988) indicated reduction of the level of under-registration of births to 3.2 per cent in 1980-81 and further to mere 1.8 per cent in 1985 (Retherford and Mishra 2001). However, there are less optimistic estimates, for instance, by Narsimhan et. al. (1997), suggesting that the actual level of under-registration could be closer to 10 per cent.

It appears reasonable to presume that the extent of under-registration in SRS in the states of NER would (at least) not be any less than that of the all-India level [as the former implemented the programme much late, the level of under-registration could indeed be higher than the latter]. One evaluative study of SRS data

undertaken in 1980-81, in fact, reported Assam's level of birth under-registration as being as high as 9 per cent (Narsimhan et al. 1997). P.N. Mari Bhat (1994), noting a larger degree of SRS birth under-registration in the NER than in many other major states, attempted at estimating (indirectly i.e. without using SRS data) former's CBR estimates for two periods, 1974-80 and 1984-90 by applying the Reverse Survival Method (RSM for short).[5] These indirect estimates of CBR (by P.N. Mari Bhat) for the NER states turned out to be generally higher than the unadjusted SRS-based estimates, with the per cent difference being as high as 41 in case of Nagaland in 1981 and around 12 per cent in the remaining states (see Table 6). This differential, however, appears to have narrowed in almost all states of the NER with the passage of time, reflecting perceptible improvements in the quality/coverage of SRS data by the late 1980s.

However, with no further study undertaken to assess the coverage or completeness of SRS across NER in the 1990s, the question has remained as to whether improvements of the 1980s in the performance of the SRS were indeed sustained during the 1990s and beyond. To fill in this lacuna, Mahapatra (2010) attempted at estimating the extent of registration/under-registration in the SRS data at all-India level for the individual years starting from the early 1990s up to 2007; and the estimated all-India completeness levels ranged from 77 per cent to 99 per cent, with about 82 per cent in 2007. There is thus an indication that the completeness of registration of *deaths* under SRS has somewhat worsened at the all-India level over the recent past at least till 2007. All this should have implications for the suggested and actual levels of birth and death rates as well as for their paces of declines (we shall return to this issue presently).

Table 6 presents alternative estimates of birth rates and their changes for the states of NER both on the basis of SRS information and indirect technique applied to the census data (using the reverse

[5] In a closed population, census enumerated population currently aged x are the survivors of the births that occurred x years ago. From this fact the cohort of births occurring x years ago can be estimated by using Life-Table survivorship probabilities to .resurrect. numerically those no longer present among the population aged x. This method of estimation is known as the .reverse survival. or .reverse projection. because the population now aged x is .survived. or .reverse projected. to age x-t with moving it, with a suitable life table, t years into the past.

survival method) for a comparable period of around twenty years from 1977 to 1997. Both sets of estimates are averages for periods 1974-80 (centered in 1977), 1984-90 (centered in 1987) and 1994-2000 (centered in 1997). The birth rates based on SRS, as noted already, are likely to be underestimates to a considerable extent. Also, the degree of SRS under-registration is highly likely to be larger in NER than that at the all-India level (as noted earlier) due to relatively large volumes of net immigration into the former, rendering the sampling frame deficient. This is perhaps reaffirmed by somewhat higher level of census-based (indirect) birth rate estimates for NER (until at least the late 1990s) than the corresponding direct estimates provided by the SRS.

On the whole, both the SRS and census-based birth rate estimates show a distinct long-term trend of decline between 1974 and 2000 both in NER and India, except for a slight increase in the census-based birth rate for NER over the late 1980s to the late 1990s. However, as per SRS estimates, the birth rate in NER has been, on an average, slightly higher than the all-India figure in 1974-80, but it became lower in 1984-90 and continued to remain so up to 1994-2000. In contrast, census-based estimates suggest that although NER's birth rate had been marginally lower than India's in 1974-80, the former became higher during 1984-90 followed by almost an equality of the rates in 1994-2000. [The differential in the estimates between SRS and census narrows if Assam is excluded.] Thus, assuming greater reliability of the census-based estimates of birth rate of the early periods, it appears that although the birth rate in NER had been somewhat lower than that of the all-India average (i.e. during the late 1970s), the difference almost disappeared by the late 1990s.

Almost half of the states of NER experienced a higher birth rate vis-à-vis that of all-India during the entire post-independence period if we go by the Census-based estimates. Specifically, Arunachal Pradesh and Meghalaya have had a higher birth rate than the all-India average during all three periods viz. 1974-80, 1984-90, and 1994-2000, while Sikkim's birth rate also remained so in the first two periods (i.e. till the late 1990s). According to the census-based estimates, Assam has had higher birth rate than the national average during almost the entire period, but this is not clearly borne out by the SRS-based estimates. According to the SRS-based estimates, the birth rate in most of the states of NER has been lower than that

of all-India during these periods. Nevertheless, if we consider the entire period from 1971-80 to 1994-2000, going by the unanimity of their comparative levels vis-à-vis India by SRS as well as Census estimates suggests that Arunachal, Assam and Meghalaya have had relatively higher birth rate than the national average. Similarly, it appears almost certain that Manipur, Tripura and Nagaland had comparatively lower level of birth rate than all-India. Finally, it is difficult to be certain about Mizoram, as SRS has started providing estimate only recently in that state. However, it is probable that this state had also experienced higher birth rate than India during this period, as even though the SRS and Census estimates disagree, the latter can be considered more reliable as far as the magnitude of the birth rate is concerned.

Apropos the pace of decline in the birth rate, there is a wide divergence between SRS-data and census-based estimates of the comparative experience of NER vis-à-vis all-India (see Table 6). For example, whereas SRS data show a larger decline in CBR in the NER vis-à-vis all-India between 1977 and 1987, the Census data suggest that there had been a slight increase in the CBR of the former. Among the individual states, as per census estimates, we find that the birth rate in Manipur, Mizoram and Sikkim declined faster than did India as a whole, while in the majority of states of the NER during this period did not decline as fast as that at the all-India level. But interestingly according to the SRS estimates, the pace of decline in all the states of NER, with the sole exception of Nagaland, had been higher than the all-India level.

During the period between 1987 and 1997, the SRS data show that CBR had declined faster at the national level than in NER. Also, among the individual states in the region, with the exception of Assam and Meghalaya, birth rates has declined faster in all the states compared to all-India. However, as noted earlier, the SRS data reveal that the pace of decline in birth rate has been lower than the decline in the national average for the period 1981-1991. This suggests that even according to the SRS estimates, CBR started to decline faster than the all-India level, from the beginning of the 1990s.

Let us now turn a closer attention to the levels and trends in the natural rate of increase of population (NRI), and its major components together, namely, birth and death rates and net

migration flows in the post-independence period. Table 7 presents information on birth, death, and RNI of the population in NER based on SRS data from 1971 to 2001. Although SRS information is scanty for most of the NER states in the 1971-81 decade, one could still glean patterns of trends in the birth and death rates in NER in this period on the basis of the information available for the *larger* states of Assam, Manipur and Tripura, which together constitute nearly 85 per cent of its population. First, although SRS data show that the death rate in NER as a whole had been higher in 1971 compared to the all-India average, but since 1981 the death rate in this region became almost similar to the all-India level (with the suggestion of being slightly lower in the former). It is notable that except Assam and Arunachal Pradesh all the states have experienced comparatively lower death rate from 1971 to 2001 (the registered death rate in Arunachal was lower than the all-India average in 2001, whereas that of Meghalaya was marginally higher).

Death rate in NER, as in the case of birth rate, has shown a persistent decline over the period 1971 to 2001. While the pace of decline in death rate had been lower in NER than in the national average during 1981-91, it became marginally higher in the former vis-à-vis India in the 1991-2001 decade. However, for the entire period 1971-2001, the decline in death rate has been marginally higher in NER than the national average. The fastest decline in death rate in NER was achieved during the period 1991-2001. It is interesting that all the states in NER except Manipur and Meghalaya experienced faster decline in death rate than the national average during this period. The largest states in NER i.e. Assam and Tripura are also the states that experienced fastest decline in death rate during the period 1971-2001.

Overall, evidence on the birth rate and death rate estimates indicate that the comparatively higher population growth rate in NER vis-à-vis India cannot be accounted for by higher natural rate of increase in the former, suggesting that migration flows have remained highly significant across this region during the entire post-Independence period. In the following section we explore the nature and trend of the migration in NER during this period.

It is notable that the RNI has been persistently lower in NER – by about one person per thousand – vis-à-vis all-India levels throughout

the period from 1971 to 2001 (see Table 7). Even at the level of the individual states, practically all states of NER (with the sole exception of Meghalaya) have had a lower RNI than the corresponding all-India figures. Also, the RNI has declined steadily (albeit slowly) both in NER and India as a whole between 1971 and 2001, although a few individual states such as Nagaland, Tripura and Manipur (up to 1991) experienced much faster pace of declines than the all-India levels. However, there are instances such as Arunachal Pradesh, Meghalaya and Assam (especially until 1991) where the pace of decline in RNI has been comparatively slow during 1971 to 2001. In the 1991-2001 decade, NER as the whole as well as a few states namely Meghalaya, Nagaland and Tripura witnessed almost dramatic declines in NRI, as against unsurprisingly modest declines of NRI in the states like Arunachal Pradesh, Assam and Manipur where the RNI had been pretty low already by 1991. Thus, according to the SRS data, the RNI has been somewhat lower in NER than the all-India levels throughout 1971-2001. Absolute magnitudes of the declines in RNI have been pretty similar between NER and all-India, with the former‘s NRI having been persistently lower by about one birth per thousand than in NER.

Apropos birth rate estimates and their changes during 1971 to 2001 (Table 7), even though the birth rate had been slightly higher in NER than the all-India average in 1971, the former declined at a faster pace and became almost equal to the latter during 1971-1991. Since 1991, the gap in the pace of CBR declines widened further, with the NER‘s CBR becoming lower by about one birth than that of India as a whole. However, there has been fairly wide variation in the trends of CBR across individual states within NER. For example, CBR in Assam has remained higher than the national average during entire post-independence period, while CBR of Arunachal Pradesh fell well below the latter, with a dramatic decline within 1991-2001 decade. The birth rate in Meghalaya, while being lower than the all-India level till 1981, became higher by 1991. Overall, with the exception of Arunachal Pradesh, Assam and Meghalaya, rest of NER evinced comparatively lower birth rate than all-India average along with steady declines during 1971-2001. The overall pace of CBR decline in the post-independence period has been somewhat larger in NER than that in all-India, except for the 1980s when there was a distinct slowdown in the former. However,

Sikkim, Manipur, and Meghalaya experienced much slower *pace* of decline in the birth rate than India as a whole did.

No less noteworthy in Table 7 is the comparatively lower death rate in predominantly tribal states of NER such as Meghalaya, Mizoram, and Sikkim. As discussed earlier, the possibility of a larger degree of death under-registration in the predominantly tribal states of NER is pretty strong. This said, the hypothesis of historical advantage in tribal mortality, as has been noted recently by some scholars (e.g. Maharatna 2009), could loom no less large. Of course, settling over these alternative possibilities is difficult especially in view of the extremely limited empirical data for these historical periods, and it is beyond the scope of the present paper.

Migration into North-east India, 1961-2001

Census data on migration pertaining to the states of NER are considerably flawed due to heavy and continuing =illegal' in-migration into the region, as was pointed out earlier. Illegal migration by its very nature is difficult to measure to a reasonable degree of accuracy, although some researchers have pointed out its possible dimension in NER. Weiner (1983), for example, observes that there has been continuing in-migration, primarily of an illegal nature from Bangladesh into Assam. In particular, as per his estimates, in 1971 the census-enumerated Muslim population in Assam were approximately 4,24,000 excess over what could be accounted for by the natural population increase, thereby indicating the possible extent of illegal migration. Based on the SRS data which are assumed to be fairly accurate indicator of the natural rate of population increase in Assam, Weiner estimated that between 1971 and 1981 the in-migration, mostly of illegal nature, was of the order of 1.8 million. The other states in the region had also been receiving in-migrants to varying degree in the post-Independence period. As the then Chief Minister of Assam claimed =…[o]ver one million =illegal Pakistani infiltrators' had entered eastern India between 1951 and 1961, and of which 220,961 were in Assam, 459,494 in West Bengal, 297,857 in Bihar and 55,403 in Tripura…In Mizoram, migration from Bangladesh and Myanmar has become a serious issue… [T]he number of such immigrants in the state is estimated to be about 10,000. In 2003, the Nagaland government estimated approximately one lakh illegal immigrants who had settled in the

foothills of the state bordering Assam. (Singh 2009). Hence, illegal migration into North-east India has been a continuous process unlike the other states of India where considerable migration took place only during certain specific periods, particularly during the partition of India and hence of Bengal. The author further points out that those illegal migrants have been moving out from Assam (perhaps as a result of anti-immigrant movements) to neighbouring states in North-east, viz., Nagaland, Mizoram, Arunachal Pradesh and Manipur.

Migration into NER has continued in the post-Independence period keeping with the broadly same pattern as in the pre-Independence period. The immigrants have come from neighbouring Bangladesh, Bhutan, Burma, and Nepal and to some extent even from China and Pakistan. In addition, there has also been in-migration from other states of India during this period. It is perhaps interesting to note that the volume of in-migration into NER has been, at least up to 1991, greater from neighbouring nations compared to the numbers coming from other states within India. Among the states of NER, Assam and Tripura have experienced immigration mostly from Bangladesh (Pakistan prior to 1971). In fact, Bangladesh and Nepal ranked highest as exporters of immigrants into the entire NER during 1961-1991.

As per census data on migration (see Table 8), there has been net in-migration into NER from 1961 to 2001, with the volume of net in-migration showing a rising trend till 1981 in the region. Net in-migration increased in Arunachal Pradesh, Nagaland, Meghalaya, Mizoram and Sikkim till 1981 and declined thereafter. However, it started declining in Manipur and Tripura since the earlier decade. Although migration data are not available for Assam for 1981, net in-migration in this state experienced a decline between 1971 and 1991. It is interesting to note that the ranking of the states within NER according to the magnitude of in-migrants showed practically no change from 1961 to 1991, (that is, the states that had attracted the largest number of in-migrants in 1961 also attracted the largest numbers in 1991). The volume of net in-migration has been highest in Assam and Tripura throughout the period (Table 8).

Thus, the evidence is suggestive of the relative importance of in-migration in fuelling population growth in NER and its states.

Although, as per census data, the net in-migration has shown a declining trend after the 1980s in NER, it is difficult to be sure about this in view of the =illegal migration' that has been (allegedly) continuing in this region. The higher population growth rates in NER than in all-India, however, tend to reaffirm that the former has been experiencing considerable in-migration. This said, the pace of declines in birth and death rates has been somewhat identical between all-India and NER during this period. This seems consistent with a significant reduction in net in-migration flows into NER during post-Independence period, and this should have contributed to a comparatively *faster pace of decline* in NER's population growth rate vis-à-vis the country as a whole. In the following two sections, we focus on ramifications of above-noted long-term trends in the population movements and growth in NER respectively for ethnic composition in general and in particular the proportion of tribal population in the region vis-a-vis all-India and also for the trends in sex composition of populations in this region.

Long-Term Trends in the Proportion of Tribal Population in NER and its states, 1901-2001

The concerns for tribal identity and sustained migration flows of non-tribal people into NER have combined to give rise to protracted (and even continuing) ethnic conflicts and tensions across NER. Of course there are many complex issues – definitional and practical – involved in the identification and enumeration of tribal people of India. Major problems and difficulties in census enumeration of tribal population and of temporal comparability of their size in the British India are discussed by Davis (1951). However since the first census of independent India in 1951, the census enumeration of tribes has been based on official schedules of tribes – so-called Scheduled Tribes, or ST – prepared by an independent commission and legislated in the Indian parliament. Putting aside specific regional problems, if any, of the enumeration of tribal peoples in NER, Table 8 presents trends in their proportion in NER and all-India from 1901 to 2001. As can be seen, the percentage of tribal population in NER had been more than six-fold larger than that at the all-India level prior to 1951 census. However, this enumerated proportion shot up – both in NER and all-India – in 1951 in the wake of the introduction of schedules for identifying and enumerating tribes across the

country (see Maharatna 2005, 2011). For example, the proportion of tribal population in Assam jumped to as much as one-third in 1951 – partly because of the introduction of official schedules for tribal identity and partly due to the truncation of the state following partition.However, owing to subsequent divisions of Assam into several small tribal-majority states such as Meghalaya, Nagaland, Mizoram, the tribal proportion of Assam declined to a little more than 12 percent by 2001.

That the overall proportion of tribal population of NER declined dramatically during a couple of decades following the 1951 census tallies with the increases in in-migration of non-tribal people into NER from around the neighbouring regions including East Pakistan (now Bangladesh). Of late, however, the tribal proportion of NER has recovered quite a bit (albeit not fully) towards catching up the 1951 level, signifying inter alias increasing conflicts, consolidation, and resistance against the protracted infiltration of non-tribal people into the region. In any case, it is notable that the broad patterns of movements in the tribal proportion across NER seems to have corroborated with the major regional patterns of population growth shaped, as elucidated above, inter alias by population movements and particularly in-migration within NER.

Trends in Sex-Ratio (female-male ratio) in Population, NER, its constituent states, and all-India, 1901 to 2001

Sex ratio of a population is an outcome of complex interactions amongst various types of factors – biological, social, and demographic. For example, age-sex differentials in mortality are influenced both by intrinsic physiological/biological differences between sexes and also by such social/cultural forces as gender biases and discrimination. Indeed, the population sex ratio (females per thousand males) is widely accepted as a summary measure of gender bias and discrimination in a society, with a low f/m ratio reflecting generally anti-female discrimination in the distribution of food, nutrition, and health care and expenditures. On this count India has earned an unenviable (or rather shameful) distinction of having a large (and growing) deficit of females – particularly in childhood years. Table 10 presents data on the sex ratio (f/m) in India and north-east India from 1901 to 2001. India has a shameful distinction in the world of being a country that has evinced a secular decline of the f/m ratio in total population since the beginning of the

twentieth century.[6] There has been a sign of this trend beginning to get reversed in 2001. (There was a slight increase in f/m ratio in 1981 arguably due to relatively better enumeration of females in that particular census as compared to the previous ones, (see Dyson 1994, Srinivasan 1994, Visaria 1972). While there seems to be various possible causes of declining trends in f/m ratio of India's aggregate population (e.g. higher undercounting of females, anti-female bias in allocation of food and medical facilities, and more recently, sex-selective abortions on the basis of pre-natal sex determination technology), the anti-female gender bias/discrimination is widely agreed upon as its single root cause, given that India has not experienced international male-selective labour migration on a massive scale during this entire span of hundred years. However, the same cannot be said of particular regions of the country like NER, where migration played an important (if not dominant) role in shaping demographic outcomes.

Sex ratios in NER, much like rest of the sub-continent, followed a declining trend from 1901 to 1961, but its reversal began in NER from 1971, much earlier than it did at the all-India level. While sex ratio during the pre-independence period (1901-1941) had been declining in both India and NER, the latter not only evinced significantly lower sex ratios compared to the former, the difference had been increasing during this period as well. It is here that immigration, which had little to do with sex ratio at the all-India level, could have had considerable influence on the determination of overall sex ratio of NER. Among the states of the region, the lowest sex ratios during the pre-Independence period were those in Assam, Sikkim and Tripura, the states that constituted more than eighty per cent of the population of the entire NER. As already noted, these were also the states that had witnessed persistent flows of immigration during the entire pre-Independence period. This is corroborated by the data on net immigration (of mostly non-tribal people) into Assam and Tripura (as noted above in more detail) and is affirmed by rapid declines in the share of tribal population in these states during the pre-independence period (see Table 9). It is highly plausible that these immigration flows of

[6] In fact, population sex ratio in India had been found to be unfavourable for females ever since the Census was first conducted for the country in 1871 (see for instance Mayer 1999).

labourers into these two major states of NER consisted disproportionately of males, with its concomitant influence in lowering the f/m ratio in these states and hence in the entire NER. Additionally, these states comprised a dominant non-tribal population and it could be also responsible for the lower sex ratio (at least against the hill states), a point to which we turn now.

Interestingly, during the pre-independence period, there had been practically no immigration into the Hills and Manipur (the difficult terrain precludes settled agriculture and deterred the colonialists to establish plantations as well). The hill states (comprising present day tribal-dominated states of Meghalaya, Mizoram, and Nagaland) and partly Manipur evinced higher sex ratios vis-à-vis India as well as the other states of the region during the pre-independence period. This indicates a relative dominance/prevalence of socio-cultural practices less discriminatory against females, particularly female infants and girls in tribal population. While gender bias and female autonomy phenomena have been generally highlighted in the context of India's North-South divide, the former is similarly applicable to the socio-cultural differences between tribal and non-tribal groups (for a discussions on theses issues, see Maharatna 1998, 2005). Indeed, NER's tribes-majority hill states vis-à-vis others of the region provide a good opportunity for verifying the robustness of a connection between gender relations and kinship on the one hand and sex ratios as reflections of gender biases and discrimination on the other hand.

Gender bias, in so far as it is captured by the population sex ratio, seems to be virtually absent in the hill states of NER. This is generally true of the tribal population of India as well. For example, the report to the 1931 census writes that .[t]he general conclusion as to the sex ratios of India proper is therefore that in the aboriginal tribes the number of the two sexes is approximately equal, whereas in the rest of the community males exceed females. (quoted in Maharatna 2000:200). The reasons for relatively balanced or even more favourable sex-ratio in tribal population have often been traced to a less patriarchal kinship structure and generally higher female autonomy and status with respect to access to and distribution of resources within households and communities (for details see Maharatna 2005 and the literature cited therein). All this is consistent with overall more balanced gender relations in much of NER.

There have been opposing trends in the sex ratio between the non-tribal dominated states of Assam and Tripura on the one hand and the remaining tribal-dominated states of the region including Manipur on the other during the post-independence period. Among the latter states sex ratios turned to be distinctly unfavourable to females from 1961/71 onwards, though the trend got somewhat arrested in 2001. Sex ratio started to increase in Assam around 1961 and even earlier in Tripura, i.e. from 1951. This coincides broadly with declining male-selective immigration into these states. Although data on immigration are rather imperfect because of the significant presence of illegal migration, one can say with a reasonable level of confidence that the declines in sex ratio in the latter group of states have been shaped by patterns of migration flows to a considerable extent. For example, while during the pre-Independence period, the Hill states had higher sex ratio than the all-India average, the sex ratio in all states of NER except Manipur and Mizoram turned out to be unfavourable by larger extent than that of all India during the post-Independence period, especially during 1971 to 1981.

Concluding Remarks

The NER, as noted before, is a distinguished region on many counts. As is shown in the present paper, it also has had somewhat distinct experience in the realm of its demography and related long-term trends. This revelation is important because demographic phenomena and processes and their trends/movements over time are well-nigh central to a clear understanding of the region‘s major problems – social, economic and political.

For example, while the population growth in the Indian subcontinent as a whole had been during the colonial period, and has remained even today, practically unaffected by international migration, both internal and international migrations have played a significant role in shaping the distinct patterns of growth and other major characteristics of NER‘s population, intra-regional variations notwithstanding. Indeed, there have been significant, if not dramatic, changes in the volume, pattern, and directions of migration flows in NER during the past hundred years. More specifically, during the colonial rule, immigration had been largely a feature of the plains, with importation and employment of ‘coolies’ in the tea estates of

Assam province and voluntary movement of agriculturists from neighboring over-populated areas of the Bengal Province.[7] During the post-Independence period, one observes a wide extension of the areas witnessing immigration, and this includes much of the hills region now (i.e., the primarily hilly states of NER comprising Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim). Additionally, as pointed out elsewhere, significant intra-regional migration has now become a trait of the states in the region. Although of late there have been clear indications of slowing down of immigration into the region from outside, the porous nature of the borders of the region with its neighbouring nations has great potential of compounding the problem of population movements, with substantial ‘illegal’ migration continuing till date. This has arguably created a potentially volatile situation particularly in some states of the region. Indeed, a lot of damage to human lives and property has already taken place, perhaps as a reaction to the changing ‘demographic balance’ due to the protracted phenomenon of in-migration.

No less significant are the effects of such demographic trends on the socio-cultural mores of the original inhabitants, particularly the tribal population, of NER. It is interesting that high proportion of tribal population, though population-wise smaller than many major tribes put together outside NER, brings in some dilemmas. For example, an apprehension of being outnumbered might lead some tribes or communities to identify themselves with the dominant socio-cultural/ethnic groups in search of social security and peaceful survival. However there might be others who would tend to cling rather strongly to their own traditional socio-cultural practices and life styles so that with a starker identity of their own their individuality and independence could not get undermined. Both forms of ‘adjustments’ or responses should have ramifications in turn on the demographic variables i.e. on fertility, mortality and nuptiality.

For instance, assimilation might lead to increasing adoption of non-tribal mainstream socio-cultural practices by tribal peoples, causing unwelcome consequences in the form of percolation of gender

[7]Interestingly, Assam was a part of the Bengal province during the early days of the British Raj until it was thought that the region had to be split as it was becoming increasingly unwieldy due to high population growth.

biases and inequalities among the latter (for details refer to Maharatna 2005, 2010). On the other hand, the tribal groups that wish to maintain their identities might resort to pro-fertility proclivities (these trends are manifest, as we have seen, in the recent slowdown in pace of fertility decline in some states of NER). Of course, the exact mechanisms through which the envisaged symbiosis between demographic and socio-cultural forces thickens and takes shape are complex and do deserve further meticulous research.

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TABLE 1 POPULATION TRENDS IN NORTH-EASTERN REGION AND ALL-INDIA, 1901-1941*

State/Region	Population ('1000)						Decadal growth rate			
	1901	1911	1921	1931	1941	1901-1911	1911-21	1921-31	1931-41
Arunachal Pradesh**	—	—	—	—	—	—	—	—	—
Assam	3,290	3,849	4,637	5,560	6,695	16.99	20.48	19.91	20.40
Manipur	284	346	384	446	512	21.71	10.92	16.04	14.92
Meghalaya	341	394	422	481	556	15.71	7.21	13.83	15.59
Mizoram	82	91	98	124	153	41.95	7.90	26.42	22.81
Nagaland	102	149	159	179	190	46.75	6.55	12.62	6.04
Sikkim	59	88	82	110	122	48.98	-7.05	34.37	10.67
Tripura	173	230	304	382	513	32.48	32.59	25.83	34.14
NER	4,331	5,147	6,086	7,282	8,741	18.84	18.24	19.65	20.04
India	2,38,396	2,52,093	2,51,321	2,78,977	3,18,661	5.75	-0.31	11.00	14.22

* The population sizes of the states are estimated according to the present political boundaries. With the exception of Manipur and Tripura, the remaining states of the region were part of the Assam province during the pre-Independence period.

** Arunachal Pradesh was censused for the first time in 1961.

Source: Basic Statistics of North Eastern Region 2006, Government of India, Ministry of Development of NE Region, North Eastern Council, Shillong.

TABLE 2: CBR, CDR AND IMR: ASSAM AND INDIA, 1901-1941

Period	Crude Birth Rate				Births per 1000 married women aged 15-50 (GMFR)		Crude Birth Rate			Infant Mortality Rate		
	India		Assam		India (Ghosh)	Assam (Ghosh)	India (Registered) ^	India (Davis)	Assam (Registered) @	India (Chaudhuri)	Assam (Chaudhuri)	Assam (Ghosh)
	Registered ^	Davis	Registered @	Ghosh								
1901-11	37	49.2	35.7	-	-	-	33	42.6	29.6	-	-	-
1911-21	37	48.1	32.3	50.3	237	284	34	47.2	31.3	212**	-	330
1921-31	33	46.4	27.4	51.3	217	290	25	36.3	21.2	228	235	-
1931-41	34	45.2	20.9	59.8	228	334	23	31.2	17.4	207	236	236

Notes: 1. The birth rate at the all-India level has been estimated by Davis by "taking the children at each age from 0-9 in the census and, with the survival rates in the life table working back to the births that must have occurred to give rise to each cohort. Adding up the births estimated for the ten cohorts we can calculate an annual average birth rate for the decade in question" (Davis 1951).

2. Ghosh arrives at the adjusted birth rates by scaling up the registered births in each decade by a correction factor. To correct the records for initial omission and increase due to fixed coverage in an increasing population for each decade, the author applies the formula (P1*b1)/ (p0*B1) = b0/B0, where (b0/B0) is the correction factor to be estimated for a particular decade(b0 is the registered births in a particular decade, B0 is the actual births). P1 is the ratio of female population in 1941-51 to that in 1911-21 (the arbitrarily chosen initial period) and p0 is the ratio of female population to that in 1911-21 for a specific decade. b1/B1 is the actuarial estimate of the rate of omission for the decade 1941-51 and is assumed to be known and correct.

Source: @ Assam, Manipur and Tripura Report, Census of India 1951 Davis (1951) Chaudhuri (1982) Ghosh (1956) ^Chandrasekhar (1959)

TABLE 3: Per Cent share of Migrants in Total Population and Natural Population Growth, NER and All-India, 1901-1941

Year	Population	Immigrants	Rate of immigration = immigrants*100 /population]	Population growth (decadal) NER (natural pop growth)#	NER	India
[						
1901	42,72,830	6,67,704	15.6	-	-	
1911	50,58,699	7,92,552	15.7	18.3	18.84	5.7
1921	60,48,393	12,11,212	20.0	13.4	18.24	-0.3
1931	72,31,005	16,44,861	22.7	15.5	19.65	11.0

Note: # Natural population has been calculated as the growth rate of the population after deducting the number of net immigrants in the population.

Source: Bandyopadhyay et al 1999

TABLE 4: MIGRATION IN NER AND INDIA, 1911-1931

State	Number of in-migrants (percentage to total population)				Number of out-migrants (percentage to total population)				Net Inflow=In-migration minus Out-migration (percentage to total population)			
Year	Assam	Manipur	Tripura	Total	Assam	Manipur	Tripura	Total	Assam	Manipur	Tripura	Total
1911	882,068	7,995	NA	890,063	79,748	6,258	NA	86,006	802,320	1,737	NA	804,057
	(13.4)	(2.3)		(20.1)	(1.2)	(1.8)		(1.9)	(12.2)	(0.5)		(18.2)
1921	1,290,157	8,416	NA	1,298,573	75,896	7,434	NA	83,330	1,214,261	982	NA	1,215,243
	(17.3)	(2.2)		(24.4)	(1.0)	(1.9)		(1.6)	(16.3)	(0.3)		(22.8)
1931	1,317,850	7,625	113,849	1,439,324	73,223	11,091	NA	84,314	1,244,627	-3,466	NA	1,241,161
	(15.3)	(1.7)	(29.8)	(22.5)	(0.8)	(2.5)		(1.3)	(14.4)	(-0.8)		(19.4)

Note: Data on in-migrants (except for the year 1931) and out-migrants not available for Tripura.

Source: Census of Assam, 1931

TABLE 5: POPULATION TRENDS IN NORTH-EASTERN REGION, 1951-2001

State/Region	Population Size (in thousand)						Decadal growth rate (per cent)				
	1951	1961	1971	1981	1991	2001	1951-61	1961-71	1971-81	1981-91	1991-01
Arunachal P	-	337	468	632	865	1,098	38.91	35.15	36.83	27.0	
Assam@	8,029	10,837	14,625	18,041	22,414	26,656	34.97	33.95	23.36	24.24	18.92
Manipur#	578	780	1,073	1,421	1,837	2,294	34.95	37.53	32.46	29.29	24.86
Meghalaya	606	769	1,012	1,336	1,775	2,319	26.90	31.50	32.04	32.86	30.65
Mizoram	196	266	332	494	690	889	35.71	24.96	48.55	39.70	28.82
Nagaland	213	369	516	775	1,210	1,990	73.24	39.88	50.05	56.08	64.53
Sikkim	138	162	210	316	406	541	17.39	29.38	50.77	28.47	33.06
Tripura	639	1,142	1,556	2,053	2,757	3,199	78.72	36.28	31.92	34.30	16.30
NER	10,399	14,662	19,792	25,068	31,954	38,986	40.99	34.99	26.66	27.47	22.01
India@**#	3,61,088	4,39,235	5,48,160	6,83,329	8,46,303	1,028737	21.64	24.8	24.66	23.87	21.54

Notes: @ The 1981 Census could not be held in Assam. The population figures for Assam for 1981 have been worked out by interpolation.

** The 1991 Census could not be held in Jammu and Kashmir. The population figure for 1991 for Jammu and Kashmir have been worked out by interpolation.

India and Manipur figures estimated figures for three sub-divisions viz. Mao Maram, Paomata and Purul of Senapati district of Manipur as census results of 2001 census were cancelled in these three sub-divisions due to technical and administrative reasons.

Source: Basic Statistics of North Eastern Region 2006, Government of India, Ministry of Development of NE Region, North Eastern Council, Shillong.

TABLE 6: BIRTH RATE ESTIMATES FOR NORTH-EASTERN STATES, SRS AND CENSUS, 1977-2001

State/Region	Census-data based (indirect estimates)				SRS-based (direct estimates)				
	1977	1987	1997	% Change (1987-1997)	1977	1987	1997	% Change (1987-1997)	% Change (1997-1987)
Arunachal P	39.4	39.1	29.9	-0.8	33.3	35.2	23.2	5.7	-34.1
Assam	–	35.1	27.0	–	32.9	30.9	28.2	-6.1	-8.7
Manipur	31.2	27.3	21.0	-12.5	27.6	25.6	19.6	-7.2	-23.4
Meghalaya	37.4	38.3	33.6	2.4	32.4	35.4	29.4	9.3	-16.9
Mizoram	36.7	31.5	27.3	-14.2	–	–	16.0	–	–
Nagaland	31.2	29.6	24.1	-5.1	22.0	21.6	16.0	-1.8	-25.9
Sikkim	36.9	32.5	23.7	-11.9	-	31.7	21.6	–	-31.9
Tripura	31.5	31.1	21.2	-1.3	29.6	26.8	18.5	-9.5	-31.0
NER#	33.8	34.3	26.0	1.5	34.3	29.2	25.9	-14.9	-11.3
India	34.9	31.6	25.9	-9.5	33.8	32.0	27.2	-5.3	-15.0

Note **#** weighted average of the individual states, weights being respective proportions of population to total NER

Source: * Mari Bhat 1994 Guilmoto (2002); Registrar General (1999)

TABLE 7: CBR, CDR AND NATURAL RATE OF POPULATION GROWTH IN NER, SRS, 1971-2001

Year	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura	NER*	India
Crude Birth Rate (per thousand)										
1971	–	38.5	33.3	–	–	–	35.8	37.9	36.9	
1981	34.2	33	26.6	31.12	–	23.13	31	26.4	31.7	33.9
1991	30.9	30.9	20.1	32.4	–	18.5	22.5	24.4	29.2	29.5
2001	22	26.8	18.2	28.3	15.7	11.84	21.6	16.1	24.3	25.4
Crude Death Rate (per thousand)										
1971	17.8	6.9	–	–	–	–	15.3	16.9	14.9	
1981	15.9	12.6	6.6	8.2	–	6.3	8.9	8	11.5	12.5
1991	13.5	11.5	5.4	8.8	–	3.3	7.5	7.6	10.3	9.8
2001	5.5	9.5	5.1	9	4.4	2.3	5.1	5.6	8.2	8.4
Natural Growth Rate (per thousand)										
1971	20.7	26.4	–	–	–	20.5	21	22		
1981	18.3	20.4	20	24.4	–	16.8	22.1	18.4	20.2	21.4
1991	17.4	19.4	14.7	23.6	–	15.2	15	16.8	18.9	19.7
2001	16.5	17.3	13.1	19.3	11.3	9.5	16.5	10.5	16.1	17

Note: * weighted average of the individual states, weights being respective proportions of population to total NER.
Source: Registrar General, 1999

TABLE 8 NET IN-MIGRATION IN THE NORTH-EASTERN STATES, 1961-1991

STATE	**Net Inmigration**					**Net immigration rate**[= (Net immigration/population)*100]			
	1961	**[Rank]**	**1971**	**1981**	**1991**	**[Rank]**	**1961**	**1971**	**1981**	**1991**
Arunachal	30,075	[3]	67,544	1,23,542	1,08,385	[3]	8.9	14.4	19.5	12.5
Assam	12,36,155	[1]	1,3,29,110	-	5,21,882	[1]	11.4	9.1	-	2.3
Manipur	10,770	[5]	25,954	21,971	-14,736	1.4	2.4	1.5	-0.8	
Meghalaya	-		86,218	1,16,602	42,418	[4]	-	8.5	8.7	2.4
Mizoram	-	-	33536	-7385	-	-	6.8	-1.1		
Nagaland	13,477	[4]	42,279	78,384	32,578	[5]	3.7	8.2	10.1	2.7
Sikkim	3762	[6]	12,933	53,585	-15273		2.3	6.2	17.0	-3.8
Tripura	3,98,273	[2]	5,24,847	4,85,236	3,90,731	[2]	34.9	33.7	23.6	14.2
NER	16,92,512		20,88,885	9,12,856	10,58,600		11.5	10.6	3.6	3.3

Source: Census of India, various years

Table 9: Proportion (%) of tribal population, NER and its states and India, 1901-2001

State	1901[a]	1911[a]	1921[a]	1931	1941	1951	1961	1971	1981	1991	2001
Arunachal Pradesh**							88.59	79.02	69.82	63.66	64.2
Assam	17.43	17.56	15.72	10.73	Na	33.9	17.47	12.84*	NA	12.82	12.4
Manipur	36.31	37.58	34.32	34.74	Na	29.8	31.93	31.18	27.30	34.41	34.2
Meghalaya&							83.07	80.48	80.58	85.53	85.9
Mizoram@							98.10	n.a	93.55	94.75	94.5
Nagaland							93.09	88.61	83.99	87.70	89.1
Sikkim							n.a	n.a	23.27	22.36	20.6
Tripura	15.4	0.18	NA	NA	NA	30.1	31.53	28.95	28.44	30.95	31.1
NER©	17.34	16.65	–	–	–	33.6	25.80	21.96	–	26.02	26.9
India #$	2.88	3.17	2.97	2.26	2.26	5.29	6.87	6.94	7.83	8.08	8.2

Notes: For 1901-1951: (i) Assam includes Manipur state; Manipur state; Hill Tippera; (ii) there has been a change in the terminology in classifying population by religion from 1931. Prior to 1931, the religion of the aboriginal population was classified under the heading of „Animists.. From 1931, such population was classified under „tribal. religion. However, it is important to note that the population of the tribals in under-represented by these figures to the extent that there has been conversion of the tribal people to other religions. There is some evidence (see for instance the Assam Report of 1911) that there was significant conversion of tribals to Hindu religion during 1901-1911 and possibly beyond in the Assam province.

TABLE 10: SEX RATIO (FEMALES PER 1000 MALES) IN NER AND INDIA, 1901 TO 2001

State	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001
Arunanchal P#	NA	NA	NA	NA	NA	NA	894	861	862	859	893
Assam	919	915	896	874	875	868	869	896	910	923	935
Manipur	1037	1029	1041	1065	1055	1036	1015	980	971	958	978
Meghalaya	1036	1013	1000	971	966	949	937	942	954	955	972
Mizoram	1113	1120	1109	1102	1069	1041	1009	946	919	921	935
Nagaland	973	993	992	997	1021	999	933	871	863	886	900
Sikkim	916	951	970	967	920	907	904	863	835	878	875
Tripura	874	885	885	885	886	904	932	943	946	945	948
NER	939	935	919	901	899	891	890	906	915	925	937
India	979	975	970	966	965	965	963	930	934	927	933

Note: The sex ratio of NER has been calculated as an weighted average of the sex ratios of the individual states of the region. The weights assigned are the respective proportions of population of each state to the total population of NER in the respective census years.

Arunachal Pradesh was censused for the first time in 1961.

Source: Registrar General (1971, 1981, 1991, 2001, 2011)

(a) All figures in the census tables pertaining to tribal population were presented as proportion per ten thousand population and have been converted to per cent for the sake of comparability.

* Assam includes Mizoram ** In 1961, Arunachal Pradesh was named as North East Frontier Agency; @ referred to as the Mizo Hills in 1961 Census document; & the proportion of Scheduled tribes for Meghalaya has been arrived at by adding the figures for Garo Hills and United Khasi and Jaintia Hills for 1961; © NER excludes Sikkim from 1961-1981. Assam includes Mizoram for 1961 and 1971. The proportion of Scheduled Tribes (ST) in NER = ST population summed over all states of NER/total population of NER; # Excludes Assam in 1981 where Census was not conducted for that year @ Excludes Jammu & Kashmir in 1991; $ The figures excludes Mao-Maram, Paomata and Purul sub-divisions of Senapati district of Manipur.

Source: Census of India 1961 *Demographic and socio-economic profiles of the hill areas of North East India* New Delhi, 1970; Census of India 1971 Series I Part II A (ii) Union Primary Census Abstract; Census of India 1981 Series I Part II B (iii) Primary Census Abstract Scheduled Tribes; Census of India 1991 India Vol. 1 Part II B (i) Primary Census Abstract General Population PCA 2001 (Census CD); Maharatna 2005:table 1.1.