

CHAPTER TWO

LONG-TERM DEMOGRAPHIC TRENDS IN NORTH-EAST INDIA, 1901-2011:

A HISTORICAL AND COMPARATIVE ANALYSIS

2.1 Introduction and Background

As pointed out in chapter 1, among many aspects and dimensions of inquiry and research on NER, its demography – for almost obvious reasons – is central to a deeper understanding of its problems and possible remedies, apart from the necessity to understand the demographic processes in their own right. Unfortunately, the existing literature on the demographic trends and characteristics in this region is conspicuously thin. Systematic studies on long-term trends in the key demographic indicators and behaviour 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. Therefore, we begin with the analysis of trends in fertility, mortality and migration in NER and its constituent states, beginning 1901.

In this connection, it is remarkable that there is a near absence of studies, especially on the *historical* demographic of NER – a region which thus continues to remain comparatively obscure and virtually aside the Indian mainstream society, culture and politics. 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).

Thus, the chief object of the present chapter is to identify patterns and features of long-term trends of NER’s population over a span of more than a century i.e., 1901-2011, which could even provide clues to many of the existent (and potent) problems facing the economy, society, and people of the region and beyond. The chapter is divided into two broad parts. The first part deals with the historical demography of NER from 1901 to 1941. In the second part of the chapter, we would attempt at capturing key features and major directions and dimensions of NER’s demographic evolution over the post-independence period.

2.2 Trend of Population Growth in NER, 1901-1941

Table 2.1 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. Though population growth rates over this period show a rising trend at the all-India level, 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 2.1).

**TABLE 2.1: POPULATION TRENDS IN NORTH-EASTERN
REGION AND ALL-INDIA, 1901-1941***

State/Region	Population ('1000)					Decadal growth rate (%)			
	1901	1911	1921	1931	1941	1901-11	1911-21	1921-31	1931-41
Arunachal Pradesh**	-	-	-	-	-	-	-	-	-
Assam	3,290	3,849	4,637	5,560	6,695	16.9	20.5	19.9	20.4
Manipur	284	346	384	446	512	21.7	10.9	16.0	14.9
Meghalaya	341	394	422	481	556	15.7	7.2	13.8	15.5
Mizoram	82	91	98	124	153	41.9	7.9	26.4	22.8
Nagaland	102	149	159	179	190	46.7	6.5	12.6	6.0
Sikkim	59	88	82	110	122	48.9	-7.0	34.4	10.7
Tripura	173	230	304	382	513	32.5	32.5	25.8	34.1
NER	4,331	5,147	6,086	7,282	8,741	18.8	18.2	19.6	20.0
India	2,38,396	2,52,093	2,51,321	2,78,977	3,18,661	5.7	-0.3	11.0	14.2

Notes: * 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: Government of India, 2006

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 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-à-vis other parts of India.

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; in the 1890s two major famines that of 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 for example Maharatna (1996) for the estimated magnitudes of ‘excess deaths’]. Kingsley Davis in his classic study notes that “[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 (1951: 28).” 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, and perhaps wars than other regions of India did during this period (Census of India, 1921, Vol. III, Assam Part I Report: 4). Moreover, particularly high rates of population growth were recorded in the Hills (comprising of the present day states of Mizoram, Meghalaya, Nagaland and Manipur). Although part of the increase was due to relative improvement in the

coverage of enumeration during 1901-11 decade, higher natural increases of population was also an important factor (Assam Census Report, 1911: 22).

It is notable that the difference in population growth between NER and India as a whole became relatively pronounced during the 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. To quote from the former: “[t]he epidemic reached its greatest intensity in the central, northern and western parts of the Indian empire. In 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: 1624]. As *The Assam Manipur and Tripura Report of 1951 Census* also notes, in 1921-31 decade there was no violent epidemic in the region, and public health was at normal level and the population growth in Assam, though the highest recorded till then, was chiefly due to natural increase.

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.

2.2.1 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 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 CBR and/or lower death rate¹⁶) in NER vis-à-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 (Table 2.2). [Assam used to constitute nearly 80 per cent of the total population of NER.].

As Table 2.2 shows, while the registered CBR 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 CBR 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 more reliable estimates of the vital rates for this period. One of the widely acknowledged CBR 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

¹⁶ The death rate or the crude death rate (CDR) is defined as the number of deaths per thousand population in a given year.

TABLE 2.2: CBR, CDR AND IMR: ASSAM AND INDIA, 1901-1941

Period	Crude Birth Rate					Births per 1000 married women aged 15-50 (GMFR)		Crude Death Rate			Infant Mortality Rate		
	India			Assam		India	Assam	India	India	Assam	India	Assam	Assam
	Registered ^	Davis	Mari Bhat	Registered @	Ghosh	(Ghosh)	(Ghosh)	(Registered) ^	(Davis)	(Registered) @	(Chaudhuri)	(Chaudhuri)	(Ghosh)
1901-11	37	49.2	46.8	35.7	-	-	-	33	42.6	29.6	-	-	-
1911-21	37	48.1	46.0	32.3	50.3	237	284	34	47.2	31.3	212**	-	330
1921-31	33	46.4	46.4	27.4	51.3	217	290	25	36.3	21.2	228	235	-
1931-41	34	45.2	46.6	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 $(P_1 * b_1) / (p_0 * B_1) = b_0 / B_0$, where (b_0 / B_0) is the correction factor to be estimated for a particular decade (b_0 is the registered births in a particular decade, B_0 is the actual births). P_1 is the ratio of female population in 1941-51 to that in 1911-21 (the arbitrary initial period) and p_0 is the ratio for a specific decade. b_1 / B_1 is the actuarial estimate of the rate of omission for the decade 1941-51 and is assumed to be known and correct.

3. Mari Bhat’s estimates of the Crude Birth Rate are derived by combining the birth rate estimates of the beginning of 1960s [obtained from information on probability of death before fifth birthday from NSS 1965-66 data and estimate of b_{x15} (birth rate multiplied by probability of dying before fifth birthday) as average of South Model and Indian Standard life table] with the trend of birth rate estimated from standardization for each decade from 1881-1961. The birth rate estimates allow for decline in fertility during the 1960s. For details of the estimation of the standardized trend using a regression model refer to Bhat (1989).

Source: @ Assam, Manipur and Tripura Report, Census of India 1951 Davis (1951) Chaudhuri (1982) Ghosh (1956) ^Chandrasekhar (1959) Mari Bhat (1989)

births per thousand in 1901-11 to 45.2 in 1931-41. Although the CBR estimates by Davis for this period have been considerably higher than those based on registration data, the pace of *decline* in CBR during 1901-11 to 1931-41 is strikingly similar. Overall, the all-India level estimates by Davis suggest that the decline in CBR was very gradual during the decades prior to Independence.

Registration data for erstwhile Assam province are notoriously deficient for the period under consideration. The data are afflicted 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 1951:100).

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. IMR) for Assam in the pre-independence period¹⁷. As suggested by the study, the CBR in Assam was considerably and consistently higher than that at the all-India level. In 1911-20 the CBR turned out to be as high as 50.3 per thousand in Assam as compared to 45.5 at the

¹⁷ The estimates by Ghosh could be considered relatively reliable, as his estimates of under-registration of births appear 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 2.2.

all-India level. This also happens to find corroboration from the estimates by J. McSwiney, the Census Commissioner of Assam, in the 1911 Report (Census of Assam, 1911). As against a decline observed at the all-India level, there was an increase of the CBR in Assam by nearly 10 births per thousand population; from 50.3 in 1911-21 to 59.8 in 1931-41, and there has been no sign of downward movement of CBR in Assam between 1911 and 1941. Similarly, data on the General Marital Fertility Rate (GMFR) indicates that it was higher in Assam compared to the all-India average for the entire period from 1901 to 1941 (Table 2.2), and whereas it showed a decline from 237 per thousand in 1911-21 to 228 in 1931-41 at the all-India (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).

Even though estimates of the TFR are unavailable for Assam for the period under consideration, we use indirect estimation methods based on the age distribution data from census for the region. Specifically, we employ the Rele method (Rele, 1987) to work out fertility levels of Assam and India for 1911 and 1931 and arrive at two fertility rates; the first using data on children ages 0 to 4 and women belonging to the age group 15 to 44 (TFR1), and the second using children ages 5 to 9 and women 20 to 49 (TFR2) (Table 2.3). Due to the relative underestimation of children in the age group (0-4), researchers believe that the latter measure could provide more reliable estimates of fertility compared to the former. However, we also provide a simple average of the two estimates as this could be a reasonable solution in many cases.

Remarkably, as the table shows, the TFR of Assam is found to be higher than all-India average, irrespective of the measure used, and for both time periods. For example, the estimate of TFR2 indicates that while fertility at the all-India level was

between 6 and 6.5 children per woman during 1911 and 1931, the same for Assam was higher by slightly more than one child. The difference between the fertility rates between Assam and India narrows down slightly when we look at TFR1 and hence also the average fertility rates. Overall, however, these figures confirm the existence of a relatively higher fertility in Assam vis-à-vis all-India during the aforementioned period.

**TABLE 2.3: FERTILITY ESTIMATES USING RELE METHOD:
ASSAM AND INDIA, 1911 AND 1931**

Fertility Estimate	1911			1931		
	Assam (1)	India (2)	Difference (3)= (1)-(2)	Assam (1)	India (2)	Difference (3)= (1)-(2)
TFR1 (children ages 0-4/ woman ages 15-44)	4.95	4.33	0.62	5.77	4.70	1.07
TFR2 (children ages 5-9/ woman ages 20-49)	8.09	6.75	1.34	7.33	6.14	1.19
Average (TFR1+TFR2)/2	5.9	5.1	0.80	6.3	5.1	1.2

Note: TFR1 in fact, provides estimates for five years prior to the survey and TFR2 provides estimates for five to ten years prior to the survey. Hence, the 1901 census figures provide estimates roughly corresponding to 1905, and that from the 1931 census, for 1925.

Source: Author's calculations

There are several reasons as to why such differentials could have existed during the colonial times. While it is true that during that time, the fertility level among different populations in India must have been close to their respective natural fertility,

some interregional variations in fertility can be expected along the existing socio-cultural and even socio-economic diversity among the various regions.

**TABLE 2.4: BROAD INDICATORS OF SOCIO-ECONOMIC DEVELOPMENT
AND THEIR VARIATIONS: ASSAM AND INDIA, 1901-1941**

Year	Average female age at marriage		Population literacy rate		Percent urban population		Percent of working force in primary sector*	
	India	Assam	India	Assam	India	Assam	India	Assam
1901	13.14	14.59	5.30	4.17	10.84	2.34	-	83.9
1911	13.16	14.86	5.90	5.59	10.29	2.41	72.3	86.9
1921	13.67	15.30	7.20	7.11	11.18	2.74	73.0	89.5
1931	12.69	14.26	9.50	8.57	11.99	2.92	70.2	87.1
1941	-	-	16.10	13.14	-	-	-	-

Notes: * primary sector workers include cultivators, agricultural labourers, and plantation workers.

Source: Agarwala, 1967; Census of India, relevant issues.

Table 2.4 brings together some broad indicators of socio-economic development in India and Assam for the first half of the twentieth century. Due to well-known reasons, the female age at marriage is considered to be a crucial determinant of fertility and its differential among populations. Assam evinced a higher female age at marriage (by about one and a half years) compared to the national average for the entire period from 1901 to 1931. Naturally then, this does not explain the relatively higher fertility in Assam, and indeed, predisposes the population towards lower fertility. This said

however, the remaining indicators point towards a relatively lower level of socio-economic development in Assam vis-à-vis all-India, that doesn't bode well for fertility decline. First, the percent of urban population was conspicuously lower (even negligible) in Assam compared to the national average for the entire period, and never exceeded 3 percent of the population. Along with that, as shown in the table, compared to the national average, the population literacy rates were lower in Assam during 1901 to 1941 (even if only marginally). Finally, and perhaps most importantly, we come across a substantially higher proportion of workforce engaged in the primary sector in Assam during 1901 to 1931. Indeed, all this is actually something one could deduce (and expect), given the situation of the society in Assam during the colonial period as already discussed in the previous sections.

Not surprisingly perhaps, research on the fertility differentials by occupation in India (for instance Driver, 1963; Agarwala, 1967) found that among all the occupational categories, cultivators had the highest fertility rates (barring labourers). In fact, whereas Driver (1963) found that the fertility of cultivators (7.37 live births per woman) was higher than those belonging to the professional and services category (6.63) by more than half a birth, Agarwala (1970) estimated the difference to be nearly one child per woman. In fact, the proportion of primary sector workers in Assam was higher than the national figures by nearly 17 to 20 percent during that period. Surprisingly, as against a decline (though small), observed for the all-India level, Assam showed signs of a slight increase in the proportion of primary sector workers from around 84 percent in 1901 to 87 percent in 1931. Overall, the evidence points towards the existence of a far more traditional society in Assam during the first half of the earlier century. The upshot of the argument is that the near complete absence of

modernization in the Assamese society for the most part of the colonial period had probably been the basis for the relatively higher fertility levels in the region, through the operation of standard factors. For instance, the higher fertility in Assam vis-à-vis all-India is compatible with the relatively higher IMR experienced by the former as compared to the latter (as can be seen from Table 2.2)

We now turn to the temporal movements of CDR in Assam/NER vis-à-vis all-India (Table 2.2). The 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 CDR, which had commenced at the all-India level since around 1911-21, seems discernable for Assam too even from its grossly underestimated registration-based CDR (Table 2.2), 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 it continued falling – albeit at somewhat slower pace as observed at the all-India level. In addition, the trend in IMR during this period confirms a declining trend in CDR 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 the Independence. However, differences in levels and trends of IMR between India and Assam are indicative of possibly higher mortality in Assam compared to all-India (Table 2.2).

In sum, the various pieces of evidence examined above strongly point to a higher rate of natural increase of population in NER vis-à-vis all-India in the pre-independence decades. CBR 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 CDR, the evidence of relatively higher IMR is suggestive (at least) of mortality levels of this region being no lower (or perhaps even higher) than the respective all-India levels during this period. Furthermore, the indirect estimates show a higher TFR 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.

2.2.2 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. 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 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, 1901: 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 was 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, pp.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 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). The pace of influx of tea garden labourers had, however, slowed down by 1931, culminating in its almost complete stoppage by 1941 as noted by Chaudhuri (1982: 32-33). Nevertheless, the 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 (Table 2.5). Indeed, based on the census data for NER, a study by Bandyopadhyay and Chakraborty (1999) shows that in-migration into NER increased in absolute numbers from 1901 to 1931 and declined thereafter.

It is thus clear from the foregoing discussion that immigration played a major role in the swelling of population size in the pre-Independence NER. However, as noted earlier the natural rate of increase of population had been higher too in NER.

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 (Table 2.5). 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. With this, we turn to the demographic trends in NER in the post-Independence period.

2.3 Trend of Population Growth in NER, 1951-2011

Table 2.6 presents information on decadal population change in NER and its constituent states since 1951. It is interesting that population growth rate jumped up in NER immediately after the independence (around 41 per cent during the 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 (Tables 2.1 and 2.6). Indeed, as Table 2.6 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

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

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

Source: Census of Assam, 1931

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 the *trend* in population growth in NER 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.

Apropos the *relative pace* of decline of population growth in NER vis-à-vis all-India (Table 2.6), it has clearly been faster in the former for the entire period from 1961-71 to 1991-2001 (However, the region evinced lower population growth rate as compared to the all-india average, even though marginally, for the first time during 2001-11). 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 the 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. It should also be perhaps mentioned here that among all the states of NER, Nagaland has experienced the largest degree of volatility/fluctuations in the growth of

population. Indeed, even as the state registered the highest population growth rate between 1991 and 2001, it actually showed a negative growth rate of population in the subsequent decade 2001 to 2011).

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 (NRI) and net migration flows in the post-Independence period.

2.3.1 Trends in Birth Rate and Death Rate in NER, 1971-2011

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)¹⁸. 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 initiated the scheme of sample registration of births and deaths under the SRS

¹⁸ 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.

TABLE 2.6: POPULATION TRENDS IN NORTH-EASTERN REGION, 1951-2011

State/Region	Population Size (in thousands)							Decadal growth rate (per cent)					
	1951	1961	1971	1981	1991	2001	2011	1951-61	1961-71	1971-81	1981-91	1991-01	2001-11
Arunachal P	-	337	468	632	865	1,098	1,383		38.91	35.15	36.83	27.0	25.92
Assam@	8,029	10,837	14,625	18,041	22,414	26,656	31,169	34.97	33.95	23.36	24.24	18.92	16.93
Manipur#	578	780	1,073	1,421	1,837	2,294	2,722	34.95	37.53	32.46	29.29	24.86	18.65
Meghalaya	606	769	1,012	1,336	1,775	2,319	2,964	26.90	31.50	32.04	32.86	30.65	27.82
Mizoram	196	266	332	494	690	889	1,091	35.71	24.96	48.55	39.70	28.82	22.78
Nagaland	213	369	516	775	1,210	1,990	1,981	73.24	39.88	50.05	56.08	64.53	-0.47
Sikkim	138	162	210	316	406	541	607	17.39	29.38	50.77	28.47	33.06	12.36
Tripura	639	1,142	1,556	2,053	2,757	3,199	3,671	78.72	36.28	31.92	34.30	16.30	14.75
NER	10,399	14,662	19,792	25,068	31,954	38,986	45,588	40.99	34.99	26.66	27.47	22.01	16.93
India@***#	3,61,088	4,39,235	5,48,160	6,83,329	8,46,303	1,02,87,37	1,21,01,93	21.64	24.8	24.66	23.87	21.54	17.64

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 has 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: Government of India, 2006; Census of India, 2011, Provisional Population Totals, Paper-1 of 2011

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. 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) 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 added) (Wells et.al., 1967: 374).

However, incompleteness of registration coverage under SRS had probably been diminishing over time, particularly for the period 1970 to 1990 (see RGI, 1984a, 1988;

Retherford and Mishra, 2001). But, as noted by Mahapatra (2010), there has been distinct deterioration in the accuracy of the SRS estimates for the period beginning 1991. Various evaluative studies on the relative levels of under-registration in the different states of India, found that under-registration has been a more serious problem among the North-eastern states of India (Narsimhan et al, 1997; Mari Bhat, 1994). The indirect estimates of CBR by P.N. Mari Bhat (1994) 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. This *differential*, however, appears to have narrowed in almost all states of the NER with the passage of time, reflecting possible improvements in the quality/coverage of SRS data by the late 1980s.

Table 2.7 presents alternative estimates of CBR 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 survival method) for a comparable period of around twenty years from 1977 to 1997. On the whole, both the SRS and census-based CBR 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 CBR for NER over the late 1980s to the late 1990s. However, despite some discrepancy in NER's CBR trend for the period 1977 to 1987, assuming greater reliability of the census-based estimates of CBR, it appears that although the CBR 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 CBR vis-à-vis that of all-India during the entire post-independence period if we go by the Census-based estimates.

Specifically, Arunachal Pradesh, Meghalaya, Assam and Sikkim evinced higher CBR than the all-India average during all three periods viz. 1974-80, 1984-90, and 1994-2000. According to the SRS-based estimates, the CBR 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 Assam, Meghalaya and to some extent Arunachal Pradesh have had relatively higher CBR than the national average. Similarly, it appears almost certain that Manipur, Tripura and Nagaland had comparatively lower level of CBR than all-India. Interestingly however, the most recent SRS estimates (of 2010) find a considerably higher CBR in Manipur compared to the all-India average and indeed, several all the states of NER barring Mizoram. Finally, it is difficult to be certain about Mizoram, as SRS has started providing estimate only the recently. However, it is probable that this state had also experienced higher CBR 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 CBR is concerned. Indeed, the 2010 SRS estimates suggest that Mizoram could have one of the highest CBR in the region presently.

Apropos the pace of decline in the CBR, there is a wide divergence between SRS data and census-based estimates of the comparative experience of NER vis-à-vis all-India (Table 2.7). 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 CBR 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.

Although SRS information is scanty for most of the NER states in the 1971-81 decade, one could still glean patterns of trends in 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 (Table 2.7). First, although SRS data show that the CDR in NER as a whole had been higher in 1971 compared to the all-India average, but since 1981 the CDR in this region became almost similar to the all-India level (with an suggestion of being slightly lower in the former). It is notable that except Assam and Arunachal Pradesh all the states have experienced comparatively lower CDR from 1971 to 2011 (the registered CDR in Arunachal was lower than the all-India average in both 2001 and 2011, whereas that of Meghalaya was marginally higher in the respective years).

Death rate in NER, as in the case of CBR, has shown a persistent decline over the period 1971 to 2011. While the pace of decline in CDR 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 CDR has been marginally higher in NER than the national average. The fastest decline in CDR 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 CDR 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 CDR during the period 1971-2001. However, it is interesting to note that CDR increased,

TABLE 2.7: BIRTH RATE AND DEATH RATE ESTIMATES FOR NORTH-EASTERN STATES, 1977-2010

State/Region	BIRTH RATE											DEATH RATE				
	Census-data based (indirect estimates)					SRS-based (direct estimates)						SRS-based (direct estimates)				
	1977	1987	1997	Change (%) (1977- 1987)	Change (%) (1987- 1997)	1977	1987	1997	2010	Change (%) (1977- 1987)	Change (%) (1987- 1997)	1971	1981	1991	2001	2010
Arunachal	39.4	39.1	29.9	-0.8	-23.5	33.3	35.2	23.2	15.8	5.7	-34.1	-	15.9	13.5	5.5	5.9
Assam	-	35.1	27.0	-	-23.2	32.9	30.9	28.2	22.0	-6.1	-8.7	17.8	12.6	11.5	9.5	8.2
Manipur	31.2	27.3	21.0	-12.5	-23.1	27.6	25.6	19.6	22.9	-7.2	-23.4	6.9	6.6	5.4	5.1	4.2
Meghalaya	37.4	38.3	33.6	2.4	-12.3	32.4	35.4	29.4	15.8	9.3	-16.9	-	8.2	8.8	9	7.9
Mizoram	36.7	31.5	27.3	-14.2	-13.3	-	-	16.0	24.2	-	-	-	-	-	4.4	4.5
Nagaland	31.2	29.6	24.1	-5.1	-18.6	22.0	21.6	16.0	11.9	-1.8	-25.9	-	6.3	3.3	2.3	3.6
Sikkim	36.9	32.5	23.7	-11.9	-27.1	-	31.7	21.6	15.3		-31.9	-	8.9	7.5	5.1	5.6
Tripura	31.5	31.1	21.2	-1.3	-31.8	29.6	26.8	18.5	13.0	-9.5	-31.0	15.3	8	7.6	5.6	5.0
NER#	33.8	34.3	26.0	1.5	-24.2	34.3	29.2	25.9	20.3	-14.9	-11.3	16.9	11.5	10.3	8.2	7.3
India	34.9	31.6	25.9	-9.5	-18.0	33.8	32.0	27.2	18.0	-5.3	-15.0	14.9	12.5	9.8	8.4	7.2

Note # weighted average of the individual states, weights being respective proportions of population to total NER for the nearest Census year

Source: Mari Bhat (1994); Guilmoto and Rajan (2001); Registrar General (1999, 2011)

even if marginally, among four states of the region- Arunachal Pradesh, Mizoram, Nagaland and Sikkim between 2001 and 2011. Indeed, the decline in death rates during the last decade (2001 to 2011) was slower in NER as compared to the pace of decline experienced at the all-India level.

No less noteworthy however, is the comparatively lower CDR in predominantly tribal states of NER such as Meghalaya, Mizoram, and Sikkim (Table 2.7). 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, 2011), could loom no less large. Of course, settling over these alternative possibilities is pretty difficult especially in view of the extremely limited empirical data for these historical periods, and it is of course beyond the scope of the present chapter.

Overall, evidence on the CBR and CDR 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.

2.3.2 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, according to 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 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 entire NER during 1961-1991.

As per census data on migration (Table 2.8 above), there has been net in-migration into NER from 1961 to 2001, with the volume of net in-migration showing a rising trend in the region till 1981. 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 1961 to 1991 (Table 2.8).

Remarkably, we find a drastic change in the volume and pattern of migration in NER during 1991 to 2001. In fact, as against net in-migration into the region till 1991,

there was actually net out-migration from the region between 1991 and 2001 according to census figures (Table 2.8). Even as the declining trend of net in-migration continued into the 2000s, there was in fact, a complete reversal of the trend in Assam and Nagaland, with these two states experiencing a net outflow of population. Indeed, four out of the eight states of NER witnessed net-outmigration during 1991 to 2001- Assam, Manipur, Mizoram and Nagaland. However, among the larger states of the region, Tripura continued to experience increase in population through net in-migration. Thus, the evidence is suggestive of a relative importance of in-migration in fuelling population growth in NER and its states at least till 1991. 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. Even as data indicate that there has been considerable out-migration from many of the states of NER between 1991 and 2001, population growth in all the states of the region (barring Assam) was found to be higher than the national average during the corresponding period (Tables 2.6 and 2.8). 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 would 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

TABLE 2.8: NET INMIGRATION, NER AND ITS STATES, 1961-2001

State	Net In-migration					Net In-migration as % of total population				
	1961 [Rank]	1971	1981	1991 [Rank]	2001	1961	1971	1981	1991	2001
Arunachal	30,075 [3]	67,544	1,23,542	1,08,385 [3]	62,213	8.9	14.4	19.5	12.5	5.7
Assam	12,36,155 [1]	1,3,29,110	-	5,21,882 [1]	-154,654	11.4	9.1	-	2.3	-0.6
Manipur	10,770 [5]	25,954	21,971	-14,736 -	-26,156	1.4	2.4	1.5	-0.8	-1.1
Meghalaya	-	86,218	1,16,602	42,418 [4]	14,430	-	8.5	8.7	2.4	0.6
Mizoram	-	-	33536	-7385 -	-704	-	-	6.8	-1.1	-0.1
Nagaland	13,477 [4]	42,279	78,384	32,578 [5]	-16,511	3.7	8.2	10.1	2.7	-0.8
Sikkim	3762 [6]	12,933	53,585	-15273 -	23,936	2.3	6.2	17.0	-3.8	4.4
Tripura	3,98,273 [2]	5,24,847	4,85,236	3,90,731 [2]	27,970	34.9	33.7	23.6	14.2	0.9
NER	16,92,512	20,88,885	9,12,856	10,58,600	-69,476	11.5	10.6	3.6	3.3	-0.2

Source: Census of India, various years

population in the region vis-à-vis all-India and also for the trends in sex composition of populations in this region.

2.4. Long-Term Trends in the Proportion of Tribal Population in NER and States, 1901-2011

The concerns for tribal identity and sustained migration flows of non-tribal people into NER have combined to give rise to a 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 2.9 presents trends in their proportion in NER and all-India from 1901 to 2011. 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 alia 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 alia by population movements and particularly in-migration within NER.

2.5. Trends in Population Sex Ratio in NER, Constituent States, and All-India, 1901 to 2011

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 by such social/cultural forces as gender biases and discrimination. Indeed, the population sex ratio (females per thousand males) is widely

TABLE 2.9: PROPORTION (%) OF TRIBAL POPULATION, NER, ITS STATES, AND INDIA, 1901-2011

State	1901 ^(a)	1911 ^(a)	1921 ^(a)	1931	1941	1951	1961	1971	1981	1991	2001	2011
Arunachal Pradesh**	n.a	n.a	n.a	n.a	n.a	n.a	88.59	79.02	69.82	63.66	64.2	68.7
Assam	17.43	17.56	15.72	10.73	n.a	33.9	17.47	12.84*	n.a	12.82	12.4	12.4
Manipur	36.31	37.58	34.32	34.74	n.a	29.8	31.93	31.18	27.30	34.41	34.2	35.1
Meghalaya ^{&}	n.a	n.a	n.a	n.a	n.a	n.a	83.07	80.48	80.58	85.53	85.9	86.1
Mizoram [@]	n.a	n.a	n.a	n.a	n.a	n.a	98.10	n.a	93.55	94.75	94.5	94.4
Nagaland	n.a	n.a	n.a	n.a	n.a	n.a	93.09	88.61	83.99	87.70	89.1	86.5
Sikkim	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	23.27	22.36	20.6	20.6
Tripura	15.4	0.18	NA	n.a	n.a	30.1	31.53	28.95	28.44	30.95	31.1	31.7
NER [©]	17.34	16.65	n.a	n.a	n.a	33.6	25.80	21.96	n.a	26.02	26.9	27.2
India #	2.88	3.17	2.97	2.26	2.26	5.29	6.87	6.94	7.83	8.08	8.2	8.6

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 is 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; ^(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: 18-19

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 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 as indicated elsewhere.

Table 2.10 presents data on the sex ratio (f/m) in India and North-east India from 1901 to 2011. India is the only country in the world that has evinced a secular decline of the f/m ratio in total population since the beginning of the twentieth century. 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 for instance Dyson, 1994; Srinivasan, 1994). 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). While there could be various possible causes of the declining trend in India's aggregate population f/m ratio (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 (Table 8). It is highly plausible that these immigration flows of 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 of a dominant non-tribal population and it could be 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

TABLE 2.10: SEX RATIO (FEMALES PER 1,000 MALES), NER, ITS STATES, AND INDIA, 1901-2011

State	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Arunachal Pradesh#	NA	NA	NA	NA	NA	NA	894	861	862	859	893	919
Assam	919	915	896	874	875	868	869	896	910	923	935	953
Manipur	1037	1029	1041	1065	1055	1036	1015	980	971	958	978	987
Meghalaya	1036	1013	1000	971	966	949	937	942	954	955	972	985
Mizoram	1113	1120	1109	1102	1069	1041	1009	946	919	921	935	975
Nagaland	973	993	992	997	1021	999	933	871	863	886	900	931
Sikkim	916	951	970	967	920	907	904	863	835	878	875	889
Tripura	874	885	885	885	886	904	932	943	946	945	948	961
NER	939	935	919	901	899	891	890	906	915	925	937	956
India	979	975	970	966	965	965	963	930	934	927	933	940

Notes: The sex ratio of NER has been calculated as a 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, 1994, 2004, 2011)

(comprising of 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 the 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 (a discussion on these issues has been presented in Chapter 5). 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, pp. 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.

2.6 Discussion

The present chapter finds that the NER 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 under the consideration of the present chapter. 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. 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 protracted phenomenon of in-migration.

No less significant is 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 biases and inequalities among the latter (for details refer to Maharatna, 2000, 2005). 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 indeed complex and do deserve further meticulous research.