THE TOPIC

Children are the most valuable assets of any nation. The children therefore need to be protected and looked after well by any country or nation with a vision of prosperity. The welfare of a child means his right to live a healthy life, be educated, and prepare him to earn his livelihood in his adulthood according to the skill and ability acquired and thereby having a minimum standard of life for an honest living. Then only they can contribute towards their personal well-being and the progress of the nation or the society at large. Thus the level of their welfare reflects the social and economic development of the nation. But the overall global scenario of child-health is quite discouraging; ten million infants die every year throughout the globe before getting their first birthday (UN, 1983). In India one out of every three babies born is of low birth weight, one in eight dies before their first birth day and an estimated three millions die every year from various fatal diseases (UNICEF, 1985).

Today one of the most important aspects of population studies is to identify the causes of high infant and early childhood mortality. Of course, it varies from culture to culture and society to society. The problem of infant
and early childhood mortality is related to various demographic, cultural, religious, ecological, socio-economic variables as well as the nutritional and health status of mothers and their children.

Countries which are taking different programmes for reduction of birth rate through family planning have realized that reduction of infant and early childhood mortality rates to a low level is an urgent necessary step towards achieving rapid reduction in fertility.

The mortality rate specially of infants and children is a major determinant of fertility level also. It is generally observed that when the mortality rate of the children is high the fertility level also goes up, because parents desire that their children should survive and when a great number of them die they produce more children to ensure the survival of at least a few. The U.N. department of economics and social affairs (1975) stated that reduction in infant mortality may be a necessary pre-requisite for the acceptance of family planning and the couples never wish to prevent pregnancies until they are assured of the survivability of the children they produce. Therefore, the decline of infant and child mortality rates appears to be a necessary precondition for the acceptance of small family norms in the developing countries.

It has also been observed that the level of infant and early childhood mortality in a country is not only an indicator of public health, but also an index of the quality of life lived by the people in general. At present, the death rate in India is 12 per 1000 population. Of the total deaths 30% are infant deaths and another 22% are the death of the children below 5 years of age. Some attribute this high child mortality in India to poor medical
facilities available to the general people, depressed socio-economic conditions, an old and orthodox type of cultural beliefs regarding the mother and the child. The type of food given to the pregnant and nursing mothers has also great impact on the high incidence of child mortality. The type and quality of food a child takes is one of the biggest factors influencing his health. If child's nutrition is inadequate he is more susceptible to diseases. A malnourished child has 400 times greater risk of dying from measles then a well nourished child (Bajkhaif et al. 1993). The environment is a major determinant of survival or death of the children. It includes the home where he sleeps, plays and eats, the water he drinks and taken bath in, the air he breathes, the latrine he uses, clothes he wears, children with whom he plays with and everything around him. Since, each of these items has a direct influence on the child's health, it is vital that the quality of all these be the best possible under the existing circumstances (WHO, 1985). Age old traditional beliefs and customs sometimes influence the general health conditions of the mother and the child.

The infant mortality can be divided into two divisions, namely, neo-natal mortality (0-28 days) and post neo-natal (28 days - 365 days) mortality. The causes of death of children vary according to the age of the children also. Factors which affect neo-natal deaths of children, are primarily endogenous, while those which affect post neo-natal deaths are primarily exogenous.

The endogenous or biological factors affecting the neo-natal deaths are generally the age of the mother at the time of childbirth, the birth order, the period of spacing between the births, pre-maturity, the weight at birth and multiple births etc. Post neo-natal deaths are due to various epidemics
caused by communicable diseases, both of the digestive system and the respiratory system as well as faulty feeding system and poor hygiene etc. The environmental factors generally include crowding and congestion, unsanitary surroundings, lack of proper sunshine, fresh air, pure drinking water etc. (Bhende and Kanitkar, 1996).

A curvilinear relationship is observed between the infant mortality and the age of the mother at the time of the childbirth and the order of the birth. The youngest (below 20 years of age) and the oldest (above 40 years of age) mothers have recorded high neo-natal and post neo-natal mortality rate. The impact of birth order on infant mortality appears to be due to its association with the maternal age. It is high for the first order birth, declines slowly up to the third birth order and then again takes an upward turn (Khan, 1988).

Data from both developed and developing countries suggest that the birth interval is a major determinant of infant and early childhood mortality. The shorter the birth interval, the higher are the chances of infant deaths (Gandotra et al. 1982; Swenson 1977, Wolfers and Scrimshow 1975, Wyon and Gordon' 1962, Yerushalmy et al. 1956). In a similar study Khan (1988) found that the Infant Mortality Rate (IMR) was the highest i.e. 378 per 1000 live birth when the birth interval was twelve months or less. The level of infant mortality declines by 27 percent (275) when the interval increased from twelve to twenty four months; by about 50 percent (180) for the interval of twenty five to twenty six months and by 72 percent i.e. 99 when the interval was thirty seven to forty eight months.

Among the social variables education of the mother is the most crucial determinant of infant and early childhood mortality (Gandotra et al. 1982;
Ruzicka and Kanitkar, 1972). Khan (1988) also found a negative association between infant mortality and the education of the mother. The level of infant and early childhood mortality of illiterate mothers is much higher than that of the mothers who had some years of schooling (223 Vs. 187).

Several research studies on determinant of infant and early childhood mortality have highlighted the importance of age of the mother, parity, birth weight, duration of gestation, antenatal care and quality of care during delivery for the survival of newborn. Educational and nutritional status of the mother, birth interval, family size, the quality of housing, sanitation, water supply and environmental conditions have been found associated with the differences in infant and early childhood mortality (Agarwala et al. 1982; Bhandari et al. 1983; Dutta, 1980; Bhattacharjee, 1979; Srinivasan 1976; Rao, 1972).

Keeping all these views in mind, the present researcher makes a humble attempt to study the infant and early childhood (0-5 years) mortality, its causes and the variables affecting mortality among the tea workers (tea labourers) of Dibrugarh district of Assam.

LITERATURE REVIEW

Since the celebration of the international year of child in 1979 by the United Nations, many organisations as well as researchers have been taking keen interest in the study of infant and early childhood mortality and also tried to find out the various factors, which in reality, may be responsible for the incidence of infant and early childhood mortality. A number of literatures on infant and early childhood mortality are there, and it is very difficult to make a thorough review of all the earlier works. So, it has been tried to highlight some of the major findings of the earlier works.
It has been seen from the findings of various studies that infant and early childhood death are influenced by several factors such as - demographic, socio-economic, environmental or ecological, cultural, nutritional, medical and health conditions of the mother and child etc. From the studies of Chen (1983), Mosley (1983), Mahadevan (1983) and Preston (1975) it is found that the determinants of infant, child and adult mortality vary between geographical regions, between cultural groups and also between the countries of various economic status.

Ahmed in 1986 reported that there is a large variation in mortality levels between the regions that are not equally exposed to modern medical facilities and other development facilities.

U. Koko in 1987 said that the death generally occurs due to lack of medical facilities to deal with infections, inadequate food and lack of elementary hygiene.


According to Bajkhaif and Mahadevan (1993) if nutrition is inadequate a child is more susceptible to diseases. A malnourished child has 400 times greater risk of dying from measles than that of a well-nourished child.

Bhende and Kanitkar in 1996 said that environmental factors like crowdly and congested living rooms, unhygienic surroundings, lack of proper sunshine, lack of fresh air and lack of pure drinking water may have some effect on infant and childhood mortality.
Zachariah and Patel (1983) stated that the environmental factors responsible for post-natal mortality are the first to be controlled.

Oduntan has examined the association between infant and child mortality and environmental variables in 1975.

According to Rao (1985) inadequate quality of housing, lack of environmental sanitation and possibly low levels of immunity affect mortality to a great extent.

Kohli and Al-Omain (1985) clearly stated that infant mortality is one of the first components of mortality that responds to general improvement in the environment, public health and medical care.

Simmons et al. (1979) emphasised the importance of the village health environment for lowering infant and child mortality.

Das Gupta (1987) reported that generally a female child has more longevity than the male child from birth and throughout life, but discrimination against the female child when compared to males in allocation of food and health care within the household may cause higher female infant and female child mortality.

Suchindran et al. (1981) has shown that the risk of mortality during the first year of life of infants born to very young mothers is high and it gradually decreases to reach a minimum for those women who are 25-30 years old and thereafter rises again.

Pregnancies of younger mothers (below 18 years) and old mothers (above 35 years), too many pregnancies (5 or more) and closed birth interval
(below 24 months) are likely to produce high risk to mother and child life (Perkin, 1968).

According to Arora (1980) infant mortality was high when the mothers were in the age group of 15-19 years.

Gunasekaran's study (1974) also found that the infant mortality rate was the highest when the age of mother was in between 15-19 years.


Shapiro, Schlesinger and Nesbitt (1968), Davanzo et al. (1983) said that the first birth and higher birth orders experience higher mortality. Associations of some other demographic factors with pregnancy are gestational pre-maturity, low birth weights and complications associated with pregnancies at different ages.

The United Nations (1954), Suchindran and Adlakha (1981), Davanzo, Butz and Hobcraft, Mc Donald and Rutstein (1983) in their studies showed that short intervals between births are associated with higher risk of mortality.

Caldwell (1979) mentioned that the differentials in economic condition means of providing necessary medical and nutritional care can affect the infant mortality rates.

In Bangladesh Phillips and Majumder in 1984 found that the effects of socio-economic characteristics on infant mortality are almost absent and
they are actually protected by breast-feeding, a practice which is universal and prolonged in Bangladesh.

Snyder and Merson (1982) mentioned that a study conducted by World Health Organisation had found that children of developing countries have three-quarters of a billion episodes of diarrhoea each year, causing five million deaths yearly.

According to Utomo (1983) mother's education, age at marriage and age at conception seem to have influence on infant survival, whereas household facilities have no significant impact on infant survival and morbidity.

According to Effiong (1976) morbidity and mortality from Jaundice and infection could be reduced through health education and immunization at antenatal clinic against tetanus.

Pathak in 1981 said that utilization of health services is found to be affected significantly by factors like age, literacy of mothers, type of occupation of parents and the nature of illness of the children and accessibility of health services.

According to Dawodu and Effiong (1983), neo-natal morbidity and mortality can be significantly reduced by promoting higher birth weights, providing effective antenatal care and delivery services to all pregnant women.

Child health clinics offering a mixture of curative and preventive services are an effective way of reducing child morbidity and mortality in developing countries (Ruvenekopswaraj, et al. 1987).
According to Venkatacharya (1985) birth weight, birth practices, maternal and child nutrition and levels of immunization are the important determinants of infant and child mortality and morbidity in developing countries.

Srinivasan and Mukherji in 1983 showed that there exists an inverse relationship between the infant mortality and socio-economic development.


The commonest health problems noticeable among the children aged less than five years are - diarrhoea, gastro-enteritis, broncho-pneumonia, meningitis, encephalitis and protein calorie malnutrition and these have been reported by Srivastava et al. (1979), Basu and Choudhury (1981), Singh (1979), Prasad et al. (1967), Osuher and Etta (1980).

Chandrasekhar in 1972, stated that the nutritional needs during pregnancy include the normal requirements of the mother, those of the developing foetus and the building up of reserves for both labour and lactation.

According to Anker and James (1980) nutrition and health care are interrelated. The relatively high mortality rates in the less developed countries are generally not due to differences in the attack of viruses, but due to differences in the state of nutrition.

Nag (1983) and Mahadevan (1986) said that the low infant mortality in Kerala may be attributed to the relatively better social development, the
wider distribution of health care services and the favourable environmental and hygienic condition.

A Brazilian study conducted by Faundes and Hary (1982) found that women who receive little or no prenatal care were about twice as likely to experience a perinatal death as women who received prenatal care.

An inverse relationship between child mortality and father's occupation and education of parents was reported from the study of the fertility survey data of Bangladesh (Huda 1980 and Mitra 1979). The study further reported that household economic status, as measured by ownership of various household articles have a negative relationship with child mortality.

Arriaga, E.E. and P, Way, (1987) have suggested that the factors influencing differentials in child mortality are generally the genetic differences, environmental factors and cultural factors.

Levinson, F.J. (1972), Keilmann, A. et al. (1983), Dyson, J and Mick Moore, (1983) have suggested that pattern of child mortality, health care, Kinship system and female autonomy are the important factors influencing female child mortality.

According to Ruzicka and Kanitkar (1972), educational level of mother and socio-economic status of the family, are the most effective factors determining the level of infant, neo-natal and post neo-natal mortality.

The study conducted by Jain in (1986) found that the family size and malnutrition of mother and infant were important factors associated with infant mortality.
In a study by Srivastava and Saxena (1980), it was shown that the incidence of infant mortality is significantly influenced by the caste system, education of the mother, occupation and income of the father.

Improved maternal education could reduce child mortality by changing the patterns of child rearing practices (UNO, 1984).

Scholars like Caldwell (1979), Martin et al. (1983) pointed out that parental education specially education of the mother is the most important factor influencing infant and early childhood mortality.

Mother's education is found to be more important in reducing infant and child mortality (Hobcraft et al. 1984).

Numerous studies confirm the importance of mother’s education for understanding the survival rates of her children, ever after the effect of husband’s income is held constant (Caldwell 1979, Farah et al. 1982).

Health care services are associated with low levels of mortality, indicating that health services are of some use for securing low child mortality in developing countries (UNO, 1985).

Bourgeois-Pichat, J. (1964) highlighted the differences in the relative importance of "endogenous" and "exogenous" causes of infant mortality in different countries. Exogenous causes of infant mortality are mainly related to the environment and these include deaths due to infections, parasitic or respiratory diseases. Endogenous causes, on the other hand, include deaths due to congenital malformations, circumstances of prenatal life and the birth process.

Jain (1984) proposed to distinguish between factors operating at the village, household and the individual level on infant and child mortality. The
individual level factors are further divided into six categories such as-
prenatal medical care, prenatal non-medical care, postnatal non-medical
care, postnatal preventive medical child care, postnatal curative medical and
child care.

According to Sample Registration Survey 1979, for each state, infant
and child mortality rates in urban areas are much lower than in rural areas.

Chandrasekhar (1959) classified the factors associated with infant
mortality into four groups and these are (i) biological, (ii) economic, (iii)
social and cultural, (iv) medical and pathological.

Yankaur in 1959 pointed out that patterns of behaviour and ways of
thinking of parents are etiologically related to infant mortality in India.

Rao (1972) in his study pointed out that certain customs and habits,
e.g. branding the skin, applying cow dung to the cut end of the umbilical
cord, frequent purgation, faulty feeding and weaning practices are some of
the cultural factors associated with high infant mortality in India.

Gandotra, Das and Bhatt (1980) observed the birth weight and the
maternal conditions at the time of birth are the most important factors
influencing neo-natal mortality.

Srivastava and Saxena (1980) concluded that the incidence of mortality
is lower -

(a) When the mothers availed regular ante-natal care,

(b) When the birth weight of the child increased upto the normal
weight of 2.5 kilogram and above.

(c) When the nutrition value of food given to the infant is higher.
Bhattacharya, Srivastava and Lamba (1980) concluded that the environment, sanitation, education, economic condition of parents, food habits, living patterns, and cultural practices exert an influence on the mortality of infants and children.

Research findings of Chandrasekhar (1972), Rao (1972), Bhattacharya et al. (1980), Simmons et al. (1979), Bhattacharjee (1979), Mahadevan (1986) Sandhya (1986), Dyson and Moore (1983), Khan (1988), Gandotra and Das (1988) show that not only the Public Health Programmes and socio-economic conditions but also the cultural and ecological settings in which the people live are important in determining the infant and early childhood mortality.

In North-East India studies on infant and early childhood mortality are a few in number.

Baruah, S K (1980) studied certain problems of fertility and mortality among the Khasis of Meghalaya.

In 1991 Das, R studied the differential fertility and child mortality among two caste groups of Mirza area in Kamrup district of Assam.

Sarma, R (1991) in her study "Some demographic aspects of the Rabhas of Boko area" dealt with some aspects of child mortality also.

Baruah, T (1992) in her study "A Demogenetic Study of the Phakes of Assam" discussed about some aspects of the child mortality of the Phakes.


Das, B (1989) studied the fertility and mortality among the Shyam people of Sivasagar district.

Das, P B and B.M. Das (1973) studied the incidence of child mortality in a Kachari village. The same author in 1982 studied the child mortality among the rural Assamese.

Das et al. (1989) confined their studies to some bio-social observations on the Assamese Hindu castes, Muslims and Mongoloids of Assam.

Das, B (1985) studied the fertility and mortality differentials among the Khamiyang and the Turung population of Jorhat district.

The Population Research Centre Gauhati University in their evaluation reports (1985-86 and 1992-93) dealt with different aspects of child mortality of North-East India.

Chakraborty, M (1995) studied the infant and child mortality among the Jayantias of Meghalaya.


Mandal, B (1997) in his study "Birth weight and in Biosocial proximates: A study of four population of Meghalaya" studied the causes and effect of low birth weight.
TEA INDUSTRY – ITS GROWTH AND DEVELOPMENT

The growth of tea-garden population in Assam is related to the growth of tea industry in the state. The history of tea industry in Assam is, therefore, worth knowing. In fact, tea-plantation in Assam has a long history. This agro-based industry occupies an important place in the economy of Assam, and was first introduced by the British in the early part of the 19th century.

Tea is grown almost all over Assam in both the Brahmaputra and The Barak Valleys. 75 percent tea-estates of Assam are concentrated in the districts of Lakhimpur, Dhemaji, Dibrugarh, Tinsukia, Sivasagar, Jorhat, Golaghat, Darrang and Sonitpur; 19 percent in the Barak Valley, N.C. Hills and Karbi Anglong districts and 6 percent in lower Assam (Bhagabati, Bora and Kar, 2001).

The English word 'tea' is probably derived from the Chinese word "Thea". About 5000 years back, tea was used as a medicinal plant in China. The scientific name of 'tea' is "Camellia sinosis". In Assam tea has been used for a long time as a beverage. Use of tea liquor as a medicine in cold and fever was also in practice. "Tea" which is known to be the 'green gold' of Assam has been growing abundantly as a wild plant in the forests of Assam since long before it was discovered. The largely accepted view is that 'tea' plant is native to certain areas from the interior of southern China to the border of Assam (Kar, 1981).

In India tea-plantation can be traced back to 1774 and at that time China seeds began to arrive in India. In 1778, Joseph Banks studied the cultivation of new crops and prepared notes where he advocated about tea-cultivation in India. In 1793 a mission was sent to China, to collect information about the cultivation and manufacture of tea.
Some people believe that Assam is the homeland of the tea shrub from where it spread to China in the 3rd century A.D. and to Europe through the Dutch and to England around 1645 (Seliman, 1957). In fact, Indian tea industry came into existence due to discovery of the indigenous tea plant in Assam, which was first discovered by Robert Bruce, an official of British empire in 1823. But the cultivation was started in a systematic manner in 1835. At that time wild tea plant was scattered in many places of Assam.

In 1832, F. Jankin was entrusted to prepare a detailed account about the economic resources of Assam and he studied here in Assam for two years. Mr. David Scott, an agent of the then Governor General of Assam declared that tea was growing as a wild plant in Assam and he had discovered it 10 years before Jankin. In 1837 tea-seeds were planted in Chabua, in the present district of Dibrugarh. In 1839, China seeds were planted in some places like Chabua, Jaipur, Chota Tingri, Hukanpukhuri, Nazira and Jorhat. One more nursery was established at Sadiya with the indigenous variety of the plant for production of tea. Lord Bentinck, the then Governor General of India, formed a tea committee. Mr. Wallace, Mr. Macland and Mr. Griffiths were the members of this committee. They searched systematically for tea jungles and found tea to be far more widely scattered in Assam than had been thought of earlier (Kar, 1981).

By 1840, tea-cultivation had occupied 2638 hectares of land. In 1841, England gave Rs. 4,20,000 to India to utilise in the field of tea industry (Kurmi, 1990).

In 1840, Buckland became the first secretary of the tea company and certain gardens were closed during his days.
In 1840, first government sale of tea in India took place in Calcutta by Mackenzie Lyall and company (Kurmi, 1981).

In 1847 Mr. Stephen was appointed as superintendent in Assam, and thereafter the company made a lot of progress. In 1849, the East India Company sold its remaining gardens to a Chinese employed at Chabua. He resold it to James Warren, a distinguished tea proprietor. Private gardens made their presence by 1850-51. In 1853, Moniram Dewan established two tea gardens. So, Moniram Dewan was considered as the first Assamese and Indian to start tea planting in Assam. Bhuyan (1960) claims that it was Moniram Dewan who first informed C.A. Bruce about the tea plant in Assam. By 1853 there were three private tea-gardens in Sivasagar and six near Dibrugarh. By 1859 there were 51 tea-gardens in Assam owned by private firms - 10 in Dibrugarh, 15 in Sivasagar, 3 in Darrang and remaining 23 in Kamrup and Nagaon district. In 1859, Jorhat tea company was formed. By 1855-56 tea cultivation was started in Cachar district. By the year 1860, tea-cultivation was started almost in all the districts of Assam. In 1862, five public and 57 private companies owned 160 tea-estates. The public companies were the Assam tea company, the Jorhat tea company, the East India Company, the Lower Assam tea company and Central Assam tea company. By 1880, there were 1058 tea gardens in Assam and the land used for tea cultivation measured 1,53,657 hectares. In 1913, tea was cultivated in 3,67,500 hectares of land. Since 1947 the ownership pattern of tea industries have undergone changes. It had passed from the British to the Indian hands. Before that Indian owners were a few. After independence tea cultivation was taken up by reputed industries like the Tata, Birlas etc.
According to the Tea statistics of 1972-73, the total number of tea gardens in Assam is 751 of which Darrang, Goalpara, Kamrup and Lakhimpur have 93, 10, 14 and 235 tea gardens respectively, whereas in Nagaon, Sivasagar, Cachar districts have 23, 262 and 114 tea-estates respectively. While in India the total number of gardens is 12,015. The formation of Assam Tea Corporation Ltd. in 1972 is also an important landmark in the history of the tea industry of Assam.

The progress of tea-industry in Assam, has been summarized in a systematic way by Bhagabati, Bora and Kar in 2001

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of tea-estates</th>
<th>Area under cultivation (in hectare)</th>
<th>Production (in '000 Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850</td>
<td>1</td>
<td>809</td>
<td>99</td>
</tr>
<tr>
<td>1900</td>
<td>804</td>
<td>1,36,379</td>
<td>14,012</td>
</tr>
<tr>
<td>1950</td>
<td>999</td>
<td>1,56,208</td>
<td>1,52,459</td>
</tr>
<tr>
<td>1990</td>
<td>848</td>
<td>2,30,363</td>
<td>3,88,181</td>
</tr>
<tr>
<td>India 1990</td>
<td>13861</td>
<td>4,16,563</td>
<td>7,20,338</td>
</tr>
</tbody>
</table>

Thus tea-industry has today developed from an early stage to a fully developed one. According to the 1994 enumeration, the state of Assam has 1012 tea gardens. Now tea industry is a major employer of labour. In 1991 Assam employed 55-64 percent of the total labour employed in tea plantation of India. During 1990-91, tea production in Assam was 388 million kilograms and contributed to a turn over of Rs. 17000 million. India became an earner of foreign exchange through export of its produce. Nearly Rs. 6000 million are earned by the tea industry annually (Saikia, 1994). The Government of
Assam collected Rs. 1040 million approximately by way of the agricultural income tax, the sale tax and land revenue in the assessment year of 1990-91.

MIGRATION AND ASSIMILATION OF THE TEA WORKERS WITH THE LOCAL PEOPLE

The forefathers of the present day tea workers of Assam were recruited as plantation labour in different periods of the 19th century, during the rule of the colonial government. These labourers were mainly recruited from Bengal, Orissa, Madhya Pradesh and Andhra Pradesh. A major portion of these migrant labourers initially suffered from various mal-adjustments. A section of them died, some others returned home after the expiry of the contracted period and some of them fled away before the expiry period. But a major section of them stayed back in their work place and gradually made up their minds to make a permanent settlement in the tea gardens of Assam and adjust themselves to a new habitat and new economy (Kar, 2001). Therefore, the tea workers living in the tea-estates of Assam today are the direct descendants of the migrated labourers. Now they have made Assam their motherland and assimilated in the mainstream.

Every member of a community wherever he goes, carries his customs, rituals and beliefs with him. These heterogeneous ethnic groups living in the same environment and having the same economy began to share their joys and sorrows among one another. Their prolonged association with the local people has also created a definite impact on their socio-cultural life. The common economy and common ways of living gave birth to a common culture which is better known as the culture of the tea garden labourers of Assam (Bhuiyan, 1960).
In the first half of the 19th century the lands now occupied by the Assam tea plantation were mainly dense and uninhabitable jungles. The local people were reluctant to render their services for clearing these jungles for tea cultivation. Different views have been put forward by different authors regarding incompatibility and non-availability of the local labour force. The indigenous Assam peasants had considered it derogatory to work under any outsiders for wages. Secondly the people of the north-eastern India had sufficient land to work in and therefore they did not feel it necessary to work as wage labourers. Besides, the British planters were also willing to employ outsiders because they thought that it would be easier for them to control the labourers recruited from other parts of the country (Kar, 1984).

The contract system was the earliest method of labour recruitment in tea cultivation in Assam. But this system was abolished under the Act VIII of 1915 paving the way for other two methods of labour recruitment. These two methods were the 'Arakati System' and the 'Garden Sardari System'. Another method of labour recruitment was 'Girmit', through which labourers were recruited by agreement for five to ten years while in 'Arakati system' the labourers were imported forever.

During 1902 to 1930, a total of seventeen lakh two thousand nine hundred and five labourers were enumerated in Assam. While in 1950 another twenty three thousand labourers were brought in to Assam. No records are available after that. Perhaps 1950 was the last year of enumeration of the tea labourers (Chah Majdoor) in Assam (Kurmi, 1977). From 1960 onwards, recruitment from outside the state was totally stopped and the tea labourers then began to be employed only from the unemployed brigades available within the state (Bhadra, 1990).
In this way people belonging to different states of India with various cultural, linguistic and ethnic heritage came to Assam and settled here in different tea gardens as tea labourers. In course of time these people assimilated with the land and people of Assam.

FIELD AND THE TEA WORKERS

The present study has been conducted among the tea-working population of three tea-estates of Dibrugarh district, Assam. The tea-estates are Rajgarh, Dirai and Pithagooti.

Assam

Assam is the most populous state of north-east India. It is located 24.3° and 28° north latitudes and 89.5° and 96.1° eastern longitudes. The mighty Himalayas bounds Assam in the north. The hills of Bhutan and Arunachal Pradesh bound the eastern border of the state. The extreme south of the state is bounded by the state of Mizoram. In the western border of the state there are low lying places of Bangladesh, the state of Meghalaya and the narrow corridor connecting the state with the northern part of the state of West Bengal. The mighty river Brahmaputra in the north and the Barak in the south carve out deep valleys that represent the major part of the state. The state has an area of 78,438 Sq. Kilometers representing 2.39% of the Indian landmass and a population of 22,414,322 (1991 census), accounting for 2.64% of the total population of the country. The main language of the state is Assamese. About 60% of the people are Hindus and 25% are Muslims. The literacy rate of the state is around 64%. It is comprised of 23 districts. The Brahmaputra valley has fertile alluvial soil. Rice is the main food crop. Assam produces over half of India's tea and about 60% of world
tea production. Jute, oil seeds, sugarcane are also grown in this region. Oil is known as "liquid gold" of Assam. Its existence in upper Assam dates back to 1825. Oil and petroleum fields in Assam are concentrated in several places of Dibrugarh, Sivsagar and Jorhat.

Dibrugarh

The tea-city of the east i.e. Dibrugarh district extends from 27° north latitude to 95° eastern longitude. The name Dibrugarh is derived from the name of the river Dibaru or Dibru. It is nestling in the eastern most part of Assam, is surrounded by Dhemaji district and a part of Lakhimpur district in the north, part of Sivasagar district and Arunachal Pradesh in the south, Tinsukia district in the east and Sivasagar district in the west. The mighty river Brahmaputra flows down from the north towards the western part of Assam. The total geographical area of the district is 3381 sq. Km. The total population is 10,42,457 of which 5,47,266 are male and 4,95,191 are female. Density of population is 308 persons per sq. km. area. Distribution of rural and urban population is 8,75,894 and 1,66,563 respectively. Assam Medical College, Dibrugarh University, Dibrugarh Polytechnic are some of the leading educational institutions of the state situated in Dibrugarh. Oil and tea are two important industries of the district. Some of the major tea-companies of the country have set up flourishing tea gardens in the district. It is the largest tea exporting city in India. (www.yahoo.com).

Location and boundaries of the study area

The distance of the gardens from Dibrugarh town is about 70 kilometers. Rajgarh, Pithgooti and Dirai are situated on the south bank of the Brahmaputra and in the district of Dibrugarh. Rajgarh tea-estate is situated almost seven kilometers away from Dirai and Pithagooti. On the
other hand, Dirai and Pithagooti are the two adjoining tea-estates and Pithagooti is a sub-division of Dirai. In 1921, Rajgarh tea-estate was established by Andrew Yule Co. Ltd. Williamson Magor was the establishing authority of Dirai and presently is owned by Maclean Magor. Pithgooti is the sub-division of Dirai tea-estate. The boundaries of Rajgarh, Dirai and Pithagooti are:

<table>
<thead>
<tr>
<th>Direction</th>
<th>Rajgarh</th>
<th>Dirai</th>
<th>Pithagooti</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Gerakoni Gaon</td>
<td>Diksam river</td>
<td>Dirai tea-estate</td>
</tr>
<tr>
<td>South</td>
<td>Nabhoktia Gaon</td>
<td>Pithagooti village</td>
<td>Garchinga gaon</td>
</tr>
<tr>
<td>East</td>
<td>Azizbag tea-estate</td>
<td>Kakoni gaon</td>
<td>Pitha Pathar gaon</td>
</tr>
<tr>
<td>West</td>
<td>Longboi tea-estate</td>
<td>Diksam block gaon</td>
<td>Noga Bat</td>
</tr>
</tbody>
</table>

Settlement pattern and house type

The number of households belonging to the tea workers of Rajgarh tea-estates is 252, while in Dirai and Pithagooti the total number of households are 422 and 393 respectively. All the houses of the tea workers are built by the plantation authority and provided to the garden labourers as residential quarters. Labour quarters of Pithagooti and Rajgarh are distributed in seven clusters each; while in Dirai, it is distributed in six clusters. Each cluster is locally known as labour line and a definite name is there for each line. The names of the labour lines of the three tea-estates are -
The linear type of settlement pattern is found in the labour lines. There are three types of residential quarters in the gardens viz. pucca, semi-pucca and kutcha. The pucca houses have corrugated iron sheet roofs, while in some houses asbestos is also observed. The walls and floors are plastered with cement. The semi-pucca houses are made of brick walls and corrugated iron sheet roofs but the floor is kutcha. The kutcha houses are built of bamboo and thatched roofs and mud-plastered walls. The floors are also kutcha. The roofs of the houses are slanting for the protection of the houses from heavy rainfall. The houses of artisans, clerical and medical stuff are pucca, but the quarters of wage earners are semi-pucca and kutcha. The office and the factory are situated almost at the center of the gardens. The plantation covers almost a continuous stretch of land. The continuity is occasionally broken by the existence of office, factory houses, hospital and residential quarters. The bungalows of the managerial personnel and the

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Rajgarh</th>
<th>Dirai</th>
<th>Pithagooti</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14 nombor line</td>
<td>46 nombor line</td>
<td>Natun line</td>
</tr>
<tr>
<td>2</td>
<td>Bor line</td>
<td>Football field line</td>
<td>Gathia bam line</td>
</tr>
<tr>
<td>3</td>
<td>Rongamoni line</td>
<td>Tin line</td>
<td>Maj line</td>
</tr>
<tr>
<td>4</td>
<td>Notun line</td>
<td>Maj line</td>
<td>Orang line</td>
</tr>
<tr>
<td>5</td>
<td>Bunglow line</td>
<td>Bhuyar line</td>
<td>Bosti line</td>
</tr>
<tr>
<td>6</td>
<td>11 nombor line</td>
<td>Bosti line</td>
<td>10 nombor line</td>
</tr>
<tr>
<td>7</td>
<td>Hospital line</td>
<td></td>
<td>Pithagooti line</td>
</tr>
</tbody>
</table>
quarters of office staff are near the office and the factory. These are not much away from the main road. The quarters of the labourers are more or less the same. The main doors of the houses generally face the road.

**Transport and communication**

Due to the remoteness of the gardens, the transport and communication system to and from the gardens is not so good. A pitched road runs from Moran to Naharkotia via Dirai, Pithagooti and Rajgarh. From morning till evening rickshaws and autorickshaws are available on that road. Within the gardens the people generally move by walking. Many people solve the problem of transportation by having their own bicycles for the marketing and short journey purposes. People travel by bus, commonly known as '407' and '609' to any part of the district or the state. The garden roads are motorable.

**Market**

Bimonthly markets are held in the playground of the gardens on every alternate Fridays and Saturdays. These markets provide almost all the essential commodities of day-to-day life. The permanent workers get their payments on every alternate Fridays while the temporary workers get their salaries on every alternate Saturdays, and thus they purchase the essential commodities like fish, meat, egg, vegetables, spices, clothes, soaps, detergent etc. from the markets. There are no shades for the shops in the market. The shopkeepers bring their goods in some containers and display the same for sale on the floor on a mat or on a piece of cloth. For some other necessary items like clothing, stationery goods etc. they have to go to Rajgarh town or Moran for shopping. There are some small pan shops and tea stalls just outside the boundaries of the gardens.
Dialect

The tea workers of the gardens belong to several tribes and castes. Each of them has his own language such as Mundari, Santali, Oriya, Bengali etc. but in the garden they communicate with one another by speaking "Sadani". "Sadani" is the link language in the garden. It is also observed that most of the people cannot speak their own languages as they have forgotten their languages totally.

Climatic condition

It is very difficult to determine the climate of a small unit like a tea garden. It is same as the climate of the Dibrugarh district as well as of Assam. The tropical monsoon climate engulfs the whole Assam state, which makes the gardens also experience the same. Like all parts of the state, the gardens also experience a high rainfall and moderately high temperature from the month of April to August. Scanty rainfall and comfortable weather prevails from the month of September upto the last part of February. Sometimes light to heavy fogs is experienced during the winter months. In the months of March and April rainfall along with hailstorms and thunders are common in the gardens like other part of the state. This is locally known as "Bordoisila" in Assam. During the early part of March sometimes sandstorms are also experienced which is locally known as "pasowa botah".

Natural vegetation

The area is mainly occupied by tea plants. The natural vegetation of the area is predominantly characterised by dense evergreen and deciduous types. Other plant species are sam, hollocks, tetachopa, bettlenut, sonaru, nahar, mango etc. In the kitchen garden of every household various types of seasonal vegetables like brinjal, cabbage, pumpkin, gourd are generally
seen. Various kinds of fruit-bearing trees like citrus fruit, black-berry, guava, olive, banana, coconut, bettlenut, mango, berry are seen in the campus of labourers. The surrounding low swampy areas are covered by water hyacinth (meteka).

Economic structure

The economy of the workers is basically wage employment. There are two types of wage earners; one is permanent and the other is temporary. The temporary workers are locally known as "faltu". The permanent workers of the industry receive some extra benefits like residential accommodation, subsidised ration and provident fund facilities. The temporary workers are recruited by the authorities time to time to cope up with heavy work load in the peak seasons. Temporary workers are recruited from the unemployed members of the families of permanent workers and also from the neighbouring areas (basti areas) of the garden. Besides the labourers there are some other workers such as sardar, chowkidar, artisan, peon, cook, tractor driver etc. The daily wages of the male and female workers are Rs. 48.50 while Rs. 24.25 is the daily wage for children.

Socio-cultural life

The workers related with tea-industry of Assam, have undergone a process of change coming in contact with the people of the adjoining areas. The tea labourers migrated to Assam long back from different parts of the country and now have made Assam their motherland and assimilated in the main stream. They have accepted "Bihu" the main festival of Assam as their own festival. On every festive occasion they drink their cherished wine "Hariya" (rice beer). Majority of the people are Hindu by religion and only a few of them are Christians. For their day to day worship, both "Namgarh" and "Church" are built by the plantation authorities.
Medical facilities

For the health care of the tea labourers there are two thirteen bedded hospital each in Rajgarh and Dirai. On the other hand, there is only one dispensary in Pithagooti. The hospital staff of Rajgarh consists of one doctor, two nurses, one compounder, two trained dhai, two health workers, one ambulance driver, one cook, one chowkidar and one ward girl. Same type of hospital staff is there in Dirai. Breakfast, lunch, evening tea and dinner is provided to the patients free of costs. No patient is attended in the labour line. The patients have to go to the hospital for treatment of diseases. The surgery cases, cases requiring X-ray and other complicated cases are referred to Assam Medical College, Dibrugarh.

The plantation authorities provide various welfare schemes for the tea workers such as - Family Welfare Programme, Universal Immunization Programme and National Malaria Control Programme. Under Mother and Child Welfare Programme the hospital authorities provide free iron and folic acid tablets to the pregnant mothers, vaccination against various types of diseases for mother and children, vitamin 'A' solution to the infants and regular health check up for the mothers and their children. People go to hospitals for primary diseases like fever, diarrhoea, worm, cough, influenza etc. In case of minor accidents like cuts, burns also they go to the hospitals. Authorities supply medicines and do the necessary dressing to the suffering people. When necessary they admit the patients in the hospitals of the gardens but send the serious patients to Assam Medical College Hospital Dibrugarh. The company incurs the cost of treatment of the patients and also provides ambulance for their conveyance.
WELFARE SCHEMES BY THE COMPANY FOR THE PERMANENT WORKERS

Housing facility

The authorities of the gardens provide the housing facilities to the workers for their service period. The compound areas for the different categories of workers are specified by the authorities which are as follows:

<table>
<thead>
<tr>
<th>Category of worker</th>
<th>House Area</th>
<th>Compound Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Grade (Official staff)</td>
<td>1000 sq. ft.</td>
<td>2500 sq. ft.</td>
</tr>
<tr>
<td>B-grade (Artisan and staff)</td>
<td>950 sq. ft.</td>
<td>2000 sq. ft.</td>
</tr>
<tr>
<td>C-grade (3rd and 4th grade staff)</td>
<td>650 sq. ft.</td>
<td>1500 sq. ft.</td>
</tr>
<tr>
<td>Sub grade (wage earner)</td>
<td>516 sq. ft.</td>
<td>1000 sq. ft.</td>
</tr>
</tbody>
</table>

Drinking water facility

The plantation authority provides drinking water facility to the workers. Tube-well are provided to the tea workers in the labour lines.

The facilities of leave

The authorities provide the facilities of leave with wages and sickness benefits to all the categories of workers of the gardens. The women get 3 months maternity leave.

Educational facilities

There are all total two lower primary schools, one in Rajgarh and one in Dirai. The pupils of Pithagooti have to come to Dirai. The plantation authorities establish both these two schools. All the students are looked after by only one teacher who teaches simultaneously to the pupils of
different classes. The school starts at 10 AM and continues upto 3 PM with a recess of half an hour. Students have to go to Rajgarh town for Middle and High School level studies. For college level they have to go to Tingkhong or Moran.

Recreational facilities

The tea-estate authorities provide games and sports as well as other recreational facilities to the workers. All together there are three labour clubs where T.V., carom, Ludo and some musical instrument are available. All the labourers employed in the gardens are the members of the club. They need not pay any membership fee. The tea workers enjoy cinema once in a month screened by the plantation authority.

Besides providing the above mentioned facilities, the tea authorities provide canteen facility in each of the gardens where rice, puri, roti, singara, sweets and tea etc. are sold at a subsidised rate. There are all total three creches, one in each of the gardens where children are kept during mothers' duty hours. The children are looked after in each creche by a woman, appointed by the authorities. Milk and snacks are also provided to the children in the creches. Annually the tea workers get umbrellas, rain coats, jerseys and uniforms, pair of chappals, blanket and mosquito nets.