Organisation (ILO). We therefore exclude from the purview of IMPUs, the following enterprises:

(i) Enterprises working with 10 or more than 10 persons with or without hired labourers

(ii) All public sector units, Co-operative organisations, trusts working in the milk producing sector irrespective of the number of persons working there.

CHAPTER – II

DATA AND METHODOLOGY
2.1 Introduction

One of the prime objectives of developing countries in general and India in particular has been to make the process of income and employment generation more efficient and equitable. With the gradual acceptance of IS as an instrument of employment and income generation and redistribution by policy makers in India, evaluation of its spatial growth becomes all the more important. It is in this context and for some other reasons listed below that we have selected the Guwahati city for our survey.

(i) Most of the earlier studies on IMPU have been conducted in large cities. With the gradual acceptance of smaller cities/towns as focal points of development, studies of
their IMPU become necessary for formulating suitable micro level employment and investment policies and for testing the earlier theories developed in this regard.

(ii) In Assam till date, not a single systematic study has been undertaken on IMPU. Saikia (2004) has undertaken one study “Prospects of Dairy Industry in Assam”. In this study he has just given a little flash about the total demand of milk in Guwahati city, but nothing is said about the economics of IMPUs, which are the prime supplier of milk in Guwahati town. Guwahati city (Presently going to be million plus city) happens to be one of the most important commercial and business centres of Assam as well as it is also the gate way to the entire North-East Region (NER). Growth of Guwahati City has long been considered as a typical case of urbanisation in the state. It is chosen as a representative of the general urban areas of the state.

2.2 Location of Study: The Case of Assam

The study area is Guwahati city in Assam. Assam is a separate province within the Indian State. Formerly Pragjyotishpur, now it is known as Assam. According to some scholars, the term ‘Assam’ is derived from Sanskrit which means peerless or unparallel. Natural phenomena, plains, river valleys and mystic hills prove this derivation. But the most acceptable occurrence of the name is related with the word ‘Ahom’, - the band of human beings stepped in Brahmaputra Valley in the early 13th century. Actually the Ahom King ‘Sukhapha’ who landed on the soil of this province in 1228 AD, shaped the destiny of Assam by establishing Ahom Kingdom. After his death, many Ahom Kings ruled the
province as his successor. They carved the identity of Assamese people bringing to light all the nicest forms of cultures. They ruled over the land for a long period of 600 years till Assam came under the colonial rule of British. The province of Assam lies on the north-east of India. The geographical location of the state is in between 24° N and 28° N latitude and almost 90° E and 97° E longitude and the state is almost 79.5 meters above from the sea level. The state is surrounded in East by Arunachal Pradesh, in West by West Bengal, in North by Bhutan and Arunachal Pradesh and in South by Meghalaya, Bangladesh, Tripura, Mizoram, Manipur and Nagaland. Strategically, three sides of the state are surrounded by foreign countries. It is surrounded in North by Bhutan, Tibet and China; in South, by Bangladesh and in East, by Burma. Existence of all these foreign countries has made Assam a strategically important state. Historical evidence suggests that the foreign Mughal invaders invaded Assam 17th times, but could not succeed. After the defeat of Mughals at ‘Saraight’ battle in 1671, under the leadership of Bir Lachit Barphukan, the then chief of the military staff of Ahom King Udayaditya Singha, the whole of the Brahmaputra valley was under Ahom Kingdom and its rule. After the last war with Mughals in 1682, the geographical boundary of Assam was extended to the river Manah in the West. The British took over Assam in 1826 on 24th February, after the treaty of Yandaboo held between the British Political Agent and the king of Ava of Brahadesh. British colonial rulers demarcated it as a separate province in the year 1874 covering the hills tracts.

The present day Assam is having a geographical area of 78438 sq. kms., which accounts for about 2.4 percent of the country’s total geographical area. Its total population as per the latest census of 2001 (provisional) is 26638407 of which 13787799 are males and
12850608 females. The density of population per sq. km. is 340.\textsuperscript{xiii} literacy percentage is 64.28 (male literacy is 71.9 percent, female literacy is 56.0 percent) and the percentage of urban population to total population is 12.8.\textsuperscript{xiv} The State’s economy is based on agriculture. Nearly 76 percent of its total population are dependent on agriculture and agriculture itself occupies a vital position in the State’s economy engaging about 53 percent of the total working force, according to 2001 census.\textsuperscript{xv} The State has vast amount of natural resources including oil, coal, minerals, alluvial soil, water and forest resources. In spite of it, it is one of the economically poorest provinces of India. The per capita income of Assam is of Rs. 6721 at constant (1993-1994) prices and Rs. 13633 at current prices during 2004-2005, which is Rs. 12416 and Rs. 23241 for all India level during this period.\textsuperscript{xvi} Dispur is the present State capital of Assam, which is situated in the midst of the sacred temple city of Guwahati.

2.3 Guwahati City

Our study area that is the Guwahati city of Kamrup district (urban), is situated in 26° 0’N and 26°30’N latitude and almost 91°15’E and 92°0’E longitude,\textsuperscript{xvii} with the altitude of 54 meters from the sea level.\textsuperscript{xviii} Geographically, Guwahati is situated on the southern bank of the mighty river Brahmaputra in the Kamrup district (Urban) of Assam. Standing on the bank of the mighty river Brahmaputra, this millennium silver city of Assam is bearing a rich socio-cultural history of its own. History reveals that right from the beginning, Guwahati is the centre point of the past glory of the State. In pre-historic time, it was known as Pragjyotisha/ Prajytishpur because of being centre point of practicing astrology in the then
country ‘Bharat’. The name is mentioned as Pragjyotisha in both the Epics, the Ramayana and the Mahabharata. The ‘Navagraha’ temple is still the witness to the exercise of this astrology. As an incarnation of Lord ‘Kamdev’, Pragjyotishpur was known as ‘Kamrup’ and it was famous later on by this name. It was found in the Allahabad pillar inscription of Samudra Gupta and in early Puranas.\textsuperscript{xix} The present Guwahati was the capital of the then Kamrup, where the famous king of ‘Asur’ dynasty “Narakashu” ruled and he built the famous sacred temple of Kamakhya. Guwahati was also the capital of the king ‘Bhagadutta’, who dug the “Dighali Phukhuri” on the occasion of his daughter Bhanumati’s marriage. The great saint ‘Bashistha’ also prayed the God ‘Bishnu’ here on the ‘Bashistha Hill’ where the “Bashistha Aashram” still exists. Guwahati received the importance in international level during the reign of king ‘Bhaskar Barma’ (594-650 AD), when the Chinese tourist “Hiuen Tsang” came to Kamrup in 643 AD and stayed one month in Guwahati, the capital of Kamrup. The name of Pragjyotishpur later known as Kamrup has been changed to Guwahati, which became famous nationally and internationally since historical period. The name Guwahati is derived from two Assamese words. Pragjyotishpur or Kamrup was full with betel nut (areca nut) trees planted systematically in rows and rows. The Assamese meaning of betel nut is ‘guwa’ and the meaning of rows is ‘haati’, which formed the complete meaning of “Guwahati”. So this place was known as Guwahati since then. This is known from the inscription of ‘copper plate’ of Nagaon King Third Balavarman (885-910 AD).\textsuperscript{xx} Mughal’s captain ‘Tughril Khan’ captured Guwahati by defeating the last king of Kamrup, ‘Sandhya’ in 1257 AD and thereafter it was under Mughals control. The Ahom King ‘Chandradhwaja Singha’ rescued Guwahati in 1667 by defeating Mughals under the leadership of ‘Lachit Barphukan’, who was the chief of the military staff of Ahom. Since
then, Guwahati became the political, administrative, commercial and defence centre of Assam as well as of the Ahom Kingdom. In 1671 at ‘Saraighat’ battle, the Ahom military power under the leadership of Captain Lachit Barphukan, defeated Mughals and it ended the Mughals invasion into the State. But unfortunately, as a result of Burmese (Maan) third invasion in 1821, Guwahati has gone to the hands of colonial British Rulers in 1824 on 28th March and later on, the whole province Assam as a result of ‘Yandaboo’ treaty held in 1826 on 24th February.xxi

Guwahati attained the first township in the province of Assam in 1853, after the formation of Guwahati Town Committee in the same year by the then Colonial British Rulers, with the total population of almost three thousand, in response to the appeal made by the inhabitants of Guwahati on 11th June 1852.xxii In 1865, the Guwahati Town Committee has been developed to Guwahati Municipal Board and a master plan was also prepared to develop the Guwahati Town.xxiii At the initial stage the area of Guwahati town was confined to the areas of Ujanbazar, Chenikuthi, Hedayetpur, Ambari, Paltanbazar, Fancybazar and Bharalumukh. But in 1899, for the first time, the colonial British Ruler, extended the area of Guwahati town covering the new areas – Kharghuli, Silphukhuri, Chandmari, Rajgarh, Barpul, Bhangagarh, Saraniya, Ulubari, Rihabari, Sanitpur and Bhutnath. In the midst, suddenly, the colonial rulers shifted the capital of Assam from Guwahati to Shillong, considering Guwahati not a healthy place.xxiv Shillong was the capital of Assam continuously till 1971. After the shift of the capital of Assam from Shillong to Guwahati, as a result of formation of Meghalaya as a separate State, the shape of Guwahati has been changing rapidly and has become a metropolitan city today. In 1971, Guwahati Municipal
Corporation Act was envisaged and in 1974 Guwahati Municipal Board was developed to Guwahati Municipal Corporation, with the recognition of Guwahati as city. The city Guwahati was recognised as the first class city in 1985, with the formation of Guwahati Metropolitan Development Authority under the GMDA Act 1985.\textsuperscript{xxv}

Guwahati, previously spelled Gauhati is a major city in the eastern India. Guwahati is considered as the gateway to all the provinces (called states in India) of the NER of the country and is the largest city within the region. Dispur, the capital of the Indian state of Assam, is situated within the city. Guwahati is one of the most rapidly growing cities in India. During past few decades it has experienced unprecedented spatial expansion and also steep rise in population. In fact, according to a survey done by a UK media, Guwahati is among the first 100 fastest growing cities of the world and is 5\textsuperscript{th} fastest growing among Indian cities. Today, the city straddles in between the Lokapriya Gopinath Bordoloi (LGB) International Airport in the west to Narengi in the east for almost 45 kms. and between the southern bank of the Brahmaputra River and the foothills of the Shillong plateau for around 15 kms. Moreover, the city is also getting gradually expanded to the northern bank of Brahmaputra. Guwahati has become a million plus city today from just 0.2 million population in 1971. Guwahati municipal corporation (GMC), the city’s local government covers an area of around 217 sq. km,\textsuperscript{xxvi} while Guwahati Metropolitan Development Authority (GMDA), the planning and development authority covers an area of 340 sq. km.\textsuperscript{xxvii} Under the GMC there are 104 revenue villages and four mauzas viz., Beltola, Ulubari, Jalukbari and Guwahati.
In addition to being the capital of Assam, Guwahati is the centre point of the NER in different aspects. It is a major commercial and educational centre of eastern India and is home to world class institutions such as the Indian Institute of Technology, Guwahati. The city is also a major centre for cultural activities, academies, social fineries, sports and intellectuals hub in the NER and for the administrative and political activities in Assam. The city is also an important hub for transportation in the NER.

2.3.1 Demography

Guwahati is one of the most rapidly growing cities in India. The city’s population grew from just three thousand in 1853, at the movement of inception of the town, to more than 5.77 lakhs in 1991 and in the census of 2001 the city’s population was found to be 8.08 lakhs. It is mentioned that the population of Guwahati was 1.24 lakhs in 1971, before the shifting of capital from Shillong to Guwahati. The decadal growth rates of population during the inter census period 1971-91 and 1991-2001 have been 78.51 percent and 28.59 percent respectively. The annual growth rates of population during these inter census periods 1971-91 and 1991-2001 were 3.93 percent and 2.86 percent respectively. The unofficial sources estimate that the total population to be around 15 lakhs in 2007. By any means this growth rate has been very high. The density of population in Guwahati city according to 2001 census, is 3,935 persons per sq. km. This clearly shows that, Guwahati has undergone massive urbanisation during the last three decades. The sex ratio as per the 2001 census is 828 females against 1000 males. It was found that 10 percent of the population is less than 6 years of age. Guwahati has an average literacy rate of 78 percent with a male literacy at 81
and female at 74 percent. Its literacy rate is higher than the state average. The average family size per household in Guwahati city is 4.64 persons. Another source says, in 2001, males constituted 55 percent while the females at 45 percent in Guwahati city. xxix

2.3.2 Geographical Area

In 1971, the geographical area of the Guwahati city was 43.82 sq. kms. xxx Now, GMC, the city’s local government covers the total geographical area of around 217 sq. kms (2001 census). This shows that the area of the city increased by 79.81 percent during the said 30 years and its population increased by 84.65 percent with in this period (population in 1971 is 1.24 lakhs and in 2001 is 8.08 lakhs). Population growth rate exceeds the city land area covering growth rate which indicates the thick density of urban population. After the formation of GMDA in 1985, the planning and development authority of Guwahati City covers the total geographical area of 340 sq. kms.

The city’s landscape is surrounded by hills and forests on all sides and with the mighty Brahmaputra flowing right through it. Hills, forests and wetlands are a vital component of the city’s environment and eco-system. Guwahati has 18 hills right within its municipal area, which not just add to the beauty of the city landscape but are crucial for the maintenance of a sound environment. The total forest cover in the hills now is a meagre 13.60 percent. Of the 7,023 hectares of hill land, 2,642 hectares fall under reserve forests (RFs). But much of even the reserve forest lies destroyed and degraded due to encroachment and tree-felling. There are as many as 75 villages in the hills, consisting of 26,985 households. Guwahati city is having as many as 19 reserve forests and three proposed
reserve forests. As per official statistics, 1,640 hectares of the city’s reserve forests are under encroachment. The unofficial figure is bound to be much higher, as forest lands are the natural choice for settlement for an ever-growing population. Similar is the case with the city’s wetlands that have undergone rapid degradation. ‘Deepor beel’, a wetland of immense significance for the city, is waging a grim battle for survival. Worse is the case with the ‘Silsako beel’, which is almost non-existent today. Other major wetlands like the Borsala and Sorusola beels are also exposed to grave threats.

2.3.3 Administration

Guwahati Town Committee was developed to GMC. The GMC was constituted in the year 1974 with only 34 numbers of wards covering an area of around 217 sq. km. Since then, there has been manifold increase in population leading to increase in number of wards to 60 in 1995. The GMC is a legally formed body, it runs the city’s local government. There is an ‘Executive Council’, which is constituted by the elected members, those who come through the democratic election process. There are 60 councillors belonging to 60 wards, elected by the voters of the respective wards. These councillors form the executive council of the municipal corporation and the executive council headed by the Mayor, prepares the planning and development strategies by the democratic process for development of different areas of the municipal corporation. The development schemes and planning undertaken by the executive council of the GMC is executed by the GMC which is a permanent constituted body.
The GMC has four revenue Zones and six administrative divisions, and each zones/divisions is under a Deputy Commissioner. The revenue zones and the wards under their preview is shown below.

Central Zone, Panbazar – Ward Nos. 23, 27 to 31, 34.

West Zone, Bhutnath – Ward Nos. 1 to 21.

South Zone, Pub Sarania – Ward Nos. 25, 26, 32, 33, 35 to 38.

East Zone, R.G. Boruah Road – Ward Nos. 22, 24, 39 to 60.

The GMC has total six divisions for administrative convenience and to render better service to the urban population. These divisions are as follows.

Table 2.1: Administrative Location of Guwahati Municipal Corporation

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of Division</th>
<th>Location of Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West Division</td>
<td>Bhutnath</td>
</tr>
<tr>
<td>2</td>
<td>Dispur Division</td>
<td>Supermarket (Dispur)</td>
</tr>
<tr>
<td>3</td>
<td>South Division</td>
<td>Ujanbazar</td>
</tr>
<tr>
<td>4</td>
<td>East Division</td>
<td>Zoo Road (R.G. Boruah Road)</td>
</tr>
<tr>
<td>5</td>
<td>Central Division</td>
<td>Panbazar</td>
</tr>
<tr>
<td>6</td>
<td>Lakhara Division</td>
<td>Lakhara Chariali</td>
</tr>
</tbody>
</table>


Since GMC is a statutory body of Assam government, constituted to perform the city’s local government administration, the corporation has its own employees. With the
total 2,750 number of employees, the GMC is a big administrative organ. Some basic data related to GMC is shown below.

**Table 2.2: Basic Parameters of Guwahati Municipal Corporation**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>8.19 lakhs (2007 estimated figure)</td>
</tr>
<tr>
<td>GMC Area</td>
<td>217 Sq. Km. (Approximately)</td>
</tr>
<tr>
<td>Wards</td>
<td>60</td>
</tr>
<tr>
<td>Employees</td>
<td>2750</td>
</tr>
<tr>
<td>Revenue Zones</td>
<td>4</td>
</tr>
<tr>
<td>Public Works Division</td>
<td>6</td>
</tr>
<tr>
<td>Public Works Zone</td>
<td>23</td>
</tr>
<tr>
<td>Primary Schools</td>
<td>5</td>
</tr>
<tr>
<td>High Schools</td>
<td>1</td>
</tr>
<tr>
<td>Parks</td>
<td>12</td>
</tr>
<tr>
<td>Municipal Markets</td>
<td>11</td>
</tr>
<tr>
<td>No. of Households</td>
<td>186006</td>
</tr>
<tr>
<td>GMC Roads</td>
<td>511.5 Km.</td>
</tr>
<tr>
<td>Water Treatment Plants</td>
<td>3</td>
</tr>
<tr>
<td>Production of Water</td>
<td>80 MLD</td>
</tr>
<tr>
<td>Water Pipe Length</td>
<td>425 Km (Approximately)</td>
</tr>
<tr>
<td>Population Served</td>
<td>4 Lacs</td>
</tr>
<tr>
<td>Deep Tube Wells</td>
<td>8</td>
</tr>
<tr>
<td>Harijan Colonies</td>
<td>6</td>
</tr>
<tr>
<td>Trucks Employed in Conservancy</td>
<td>40</td>
</tr>
<tr>
<td>Excavators</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: i) [www.guwahatimunicipalcorporation.com](http://www.guwahatimunicipalcorporation.com)  

**2.3.4 Urban Morphology**

Guwahati’s ‘urban form’ is somewhat like a ‘starfish’. With a core in the central areas, from the past few decades the southern Guwahati with the areas such as Ganeshguri, Beltola, Panjabari, etc. are forming a southern sub-centre surrounding the capital complex at Dispur and principally depending on the Guwahati-Shillong (GS) Road corridor.

The core area consists of the old city with Pan Bazar, Paltan Bazar, Fansi Bazar and Ujan Bazar, each one facilitating unique urban activities. While Palton Bazar is the hub for
transportation and hotels, Pan Bazar id for educational, administrative, cultural activities and for offices and restaurants, Fansi Bazar is the hub for retail and wholesale-commercial and on the other hand Ujan Bazar is for administrative, retail-commercial and residential activities. The core Guwahati with these areas is the busy and lively part of the city. Ulubari, Lachit Nagar and Chandmari with Zoo (R.G. Boruah) Road can be considered as added part of the core, which have a mix of retail-commercial and residential activities.

Among the corridors, the most important is the corridor formed along the GS Road towards south (almost 15 km. from the city-centre). The GS Road corridor is an important commercial area with retail, wholesale and offices developed along the main road and are also a densely-built residential area in the inner parts. The capital complex of Assam at Dispur is situated in this corridor. The corridor also facilitates growth of a southern node (sub city-centre) at Ganeshguri along with other southern residential areas developed during past few decades.

The corridor towards west (around 30 km from the city-centre) is a rail-road corridor linking not only Guwahati but also other parts of NER, east of Guwahati to western Assam and to the mainland India. The corridor links residential and historically important areas such as Nilachal Hill (Kamakhya), Pandu, Maligaon (headquarters of North east Frontier Railways) and separates into two-one towards North Guwahati and the other one towards further west to the LGB International Airport via the University of Gauhati (Jalukbari). There are also many river ports/Jetties along this corridor.
The third major corridor is towards east (around 15 km from the city-centre) linking Noonmati (Guwahati Oil Refinery-10c Ltd.) and Narengi. The corridor facilitates residential growth towards east.

Moreover, the bypass of National Highway (NH) 37 encircling the city’s southern parts linking the western corridor in Jalukbari and the southern corridor in Nomile is currently supporting rapid development along it. Similarly the VIP Road linking Zoo Road and the eastern corridor and recently completed Hengerabari-Narengi Road as planned in the older master plan are also supporting massive residential development in the east.

In brief, the major components of Guwahati’s urban structure are:

- The core centre or the ‘city centre’ with Pan Bazar, Paltan Bazar, Fansi Bazar and Ujan Bazar
- The extended core with Chandmari, Zoo Road and Ulubari
- The North-Southeast GS Road corridor
- The southern sub-centre of Ganeshguri
- The western corridor towards Kamakhya, Jalukbari and LGB International Airport
- The eastern corridor towards Noonmati and Narengi

2.3.5 Occupation
From occupational pattern of population, we can know the direction and character of a city economy. Generally city population engage themselves in formal (government and private) and informal sectors’ economic activities for earning their livelihood. The total number of households are 186006 and the total population is 8.19 lakhs in 2007 (statistical Hand Book, Assam, 2007) in Guwahati city. The work participation rate in different economic activities of formal and informal sectors is 35 percent. So the total population (workers) engaging in formal and informal sectors’ activities is 2.87 lakhs.

Out of this total, 2.87 lakhs of workers, around 1.72 lakhs are engaging in IS activities and rest 1.15 lakhs are employing in FS (government and private) activities.

2.3.6 Living Condition

Being the 5th fastest growing among Indian cities, Guwahati city is the hub of rich and aristocratic people. It also provides shelter to the poor and marginalised section of the society. All of the urban populace are not getting healthy living environment. There are 6 Harijan Colonies and at least in four places in Guwahati city slums are growing. These slum areas are Bharalu, Kamakhyagate, Maligaon and Boragoan.

About 70 percent populace of Guwahati city belong to low income group and among them, 30 percent live below poverty line. One-fifth (20 %) of the city’s present population already lives in slums, and this will pose another serious challenge in the days to come. On the other hand, the increasing number of beggars is also creating socio-economic problems. Presently there are almost one thousand beggars in Guwahati city.
The economic work participation ratio of the total population of Guwahati city is 0.35 percent.

2.3.7 Infrastructure

Guwahati city has all sorts of basic infrastructural facilities in respect of transportation (roads, railways, airlines and waterways) and communication and trade and commerce. These infrastructural facilities are described below.

2.3.7.1 Transportation

Transportation facility is the pivot for the development of a place. Transportation has direct forward and backward linkages. Good transport measures provide healthy environment for trade and commerce, communication facility and flow of tourists. Presently, Guwahati city has good transport infrastructure. In 1863 there was not a single Pucca road in Guwahati city. After 1864, the process has been undertaken at the government level to develop the roads within town area. At present, there are four P.W.D. divisions of state Government within Guwahati municipal area to develop and maintain the roads. The total numbers of roads under these four divisions are 415. Moreover, with in GMC, there is more than 1000 number of roads. Under P.W.D, within Guwahati city, total 2.23 kms length of roads are three in tracts, 10117 kms length of roads are two tracts and the rest are one tract roads. Minibus service, for the first time started in Guwahati city in April, 1947. The name of the first city bus was ‘Ford L Land’. Machkhowa was the city bus stand at that time.
From 1989, there was started mini city bus service in Guwahati city for the first time and in October, 2002 Delux city bus service has started. Rhino city bus service was added in Guwahati city from first January, 2004 with other city bus services. Presently, Garh Pandu (Aadabari) is the city bus stand for all sorts of city services.

Guwahati city is well connected by air, train and road with the NER as well as rest of the country. There are direct train services from New Delhi and Kolkata with connectivity to Mumbai, Chennai, Bangalore, Kochi and Thiruvananthapuram etc. The head office of the North- East frontier railways is located in Maligaon, within the Guwahati city.

Guwahati is well connected by a network of National Highways and other roads with all the important cities in the neighbouring states and major cities in the country. Both Government and private buses ply from Guwahati city to all the major towns of Assam. These buses also ply to the capitals of the other north-eastern states and other state’s capital of the country from Guwahati city. For the buses of the state Transport corporation of the different states, there is a parking place named ‘Inter State Bus Terminal’ (ISBT) located in Betkuchi, by the side of the bypass no 37 NH. For private network buses, there are parking places in and around in Palton Bazar.

Guwahati city is also well connected by air, through the LGB International Airport of Guwahati, with New Delhi, Kolkata, Mumbai and Chennai, Bangalore, Hyderabad, Imphal and Agartala etc. Indian Air Lines, Spicejet, Jet Airways, Air Sahara, Air Deccan, kingfisher and Indigo operate regular flights to Guwahati.

2.3.7.ii Trade and Commerce
Trade and commerce is one of the most important economic activities. Being the capital of the State and the gateway of the NER, Guwahati, the class-1 city is a hub of trade and commerce. Guwahati city has all the infrastructural facilities for trade and commerce. Although, all the offices of the different departments of the Government (state and central) sector as well as private sector are located within the Guwahati city, but it is not possible to provide employment facility to all the urban populace by Government as well as private sectors. Moreover Guwahati is becoming a million plus city. As a result, because of lack of alternative employment opportunity, the urban populace resort to trade and commerce. Being the hub of trade and commerce, there is a large number of business enterprises, factories and industries of different categories in different sectors - formal and informal. The business enterprises, factories and industries require to collect permit (no objection certificate)/licence before start their business/industrial/factory activities within Guwahati city from the Authority of GMC. There are total 51100 numbers\(^{xxxvi}\) of business enterprises and 401 numbers of factories and industries\(^{xxxvii}\) within the Guwahati city. The estimated employment of labour in the total 401 number of factories and industries is 13337.

2.3.7.iii Electricity

Electricity is the most important factor among all the factors required for development of an area as well as of its economy. Guwahati, being the capital city of the state, it requires huge amount of electric energy, because it is the centre point of the state economy. Guwahati had been the luck of getting electricity facility first in 1927.\(^{xxxviii}\) After
that, with the development of Guwahati city and extension of trade and commerce, industries/factories, extension of economic activities and population, the demand for electric power has increased. Including business enterprises, factories/industries and household consumers, Guwahati city now requires on an average 48.629 million unit electric power per month.\textsuperscript{xxxix}

\textit{2.3.7.iv Banking and Insurance}

The availability of banking and insurance network facilities are essential factors for commercial, industrial and economic development of a particular area. Guwahati city has the good network facilities of all these two basic development means. Banking and insurance sectors act as the mediator between depositors and borrowers (investors) in present time. Moreover insurance sector acts as the risk taker for the business community (viz. commodity traders, industrialists, wealth and real estates traders) of their losses due to natural calamities or uncertain incidents. There are government sector nationalised banks and regional banks as well as private sector banks in Guwahati city. The nationalised banks operating their business with their several branches in Guwahati city are- Allahabad Bank, Bank of Baroda, Central Bank of India, Canara Bank, Indian overseas Bank, Punjab National Bank, Punjab and Sind Bank, State Bank of India, UCO Bank, Union Bank of India, UBI Vijaya Bank, Assam Co-operative Apex Bank, Dena Bank, Syndicate Bank, Indian Bank and Urban Bank. There also exists the NER branch of the RBI in Panbazar. For industrial development, there are also IDBI, NABARD and SIDBI etc. in Guwahati city. On the other hand, the private sector banks (including MNCs) such as ICICI Bank, HDFC, Axis
Bank, HSBC Bank, Standard Chartered Bank, City Bank, Indus Inn Bank and Deutche Bank etc. are operating in this city.

In respect of insurance, there are both government sector as well as private sector insurance corporations/companies working in Guwahati city. The government sector insurance corporations/companies with their several branches in the city are LICl and GIC. LICl generally takes the risks of lives and GIC covers the risks of business enterprises, industries, wealth and real estates. The GIC has its three sub-branches – (i) Oriental insurance company (ii) New India insurance company and (iii) United India insurance company. Moreover, with these two insurance corporations/companies, there are two other institutions also to cover the life insurance. These are SBI life insurance and Postal life insurance (PLI) Schemes.

So far the private sector insurance companies are concerned; there are offices of several private sector insurance companies in Guwahati city. These private sector insurance companies, operating in Guwahati city are – (i) Reliance LIC, (ii) Bajaj Allianze LIC (iii) Tata AIG. LIC., (iv) HDFC Standard LIC, (v) ICICI Prudential LIC, (vi) Birla Sunlife Insurance Company, (vii) Max New York LIC, (viii) Met LIC and (ix) Bharatiya Extra LIC, etc.

2.3.7. v Communication

Communication in the form of postal and telecommunication (telegraph and telephone) is an essential measure for socio-economic development of a modern competitive society. It is during the British rule that the postal and telecommunication services were introduced and developed on modern lines in Assam. British introduced telegraph and
telephone services in Guwahati in 1866 A.D. and this introduced a cheaper, safer and prompt communication service. At present, the head Post office ‘Guwahati Post Office’ located in Panbazar in Meghdoot Bhawan, and it has several branches which are providing postal service to the public of Guwahati city. In this way the telegraph office “central Telegraph Office” located in Panbazar and the telephone office “Bharat Sanchar Nigam Limited” (BSNL), located in Panbazar, with their several branches with in the Guwahati city, rendering good communicative services to the city populace as well as to the visitors and tourists. Like the Government sector communication measures there exists also a private sector communication measure in Guwahati city. The ‘Courier Service’ a private sector postal system and the Aircel, Airtel, Reliance and Vodafone are also private sector telecommunication measures. These measures are providing immense help to the people of Guwahati city.

So far the “Broadband Service” (Internet service) is concerned; it is transforming the world into a small village. A person can get any kind of information at home through ‘internet’ service of any places of the world without going there. The ‘Internet’ service is providing immense help to commerce, trade, education, culture, technology and tourism. In Guwahati city, this internet service is being provided by the government sector as well as private sector. Bharat Sanchar Nigam Limited (BSNL), the government sector organisation has been providing internet service since 2004 to its people. The private sector organisations/companies which are providing internet service to the people of Guwahati city are Airtel, Tata Indicom, Reliance, Satyam and Sify. Satyam, the private sector company has
started providing internet service in the city from few years before. Some other private companies have started their Internet service from 2007 in Guwahati city.

2.3.7. vi Tourism and Its Infrastructure

Guwahati is bestowed with pure natural beauty that includes the greenery of the land, red rivers and blue hills. The tourists get attracted by these at their first sight. Guwahati is a treasure land of varied colourful cultures glorified with old temples and monuments. The city has immense potential for tourism, since it is the gateway to the greenery land of NER. Tracing the history of tourism, it is seen that in 643 A.D., the Chinese tourist ‘Hiuen Tsang’ came to Pragjyotishpur and stayed in Guwahati for one month. He was fascinated by its natural beauty. At present, Guwahati city has all the infrastructural facilities for inflow of tourists to here. Guwahati is well connected by the all sorts of transportation measures viz. railway communication, surface/road transport communication and airlines communication. For the fooding and lodging of the tourists, there are various deluxe/semi deluxe and from the expensive to the budget hotels and Lodges. One can find various options for stays. The luxury hotels are comparable with the best in the country with good service and travel packages, car rental service. The Hotels and Lodges, recognised by the Assam Tourism Development corporation (ATDC) for tourist and are also available in and around Guwahati Municipal area like Hotel Brahmaputra Ashok, Hotel Dynasty, Hotel Rajmahal, hotel Nandan, Hotel Rituraj, Hotel Vikash international, Chilarai Regency, Pragati Manor, Hotel Belleue, Hotel VIP international, Hotel Bluemoon, Hotel Landmark, Hotel Prag Continental, Hotel Kuber International, Hotel Ambarish Vishwaratna, Hotel President, Hotel Starline,
Hotel Embassy, Hotel Rajdoot, Hotel Nova, Hotel Alankar, Hotel Suradevi, etc. Lodges are like Prasanti, Assam Government Tourist Lodge (owned by ATDC Ltd.), Government State Guest House No. 1, and State Guest House No. 2, Circuit House, Railway Retiring Room, Hazi Musafirkhana, Satsang Vihar, YWCA (Chatribari), etc.

Tourist spots and places that a tourist can visit in and around Guwahati Municipal area like Kamakhya Temple, Navagraha Temple, Basistha Ashram, Umananda Temple, Tirupathi Balaji Temple, Srimanta Sankardev Kalakshetra, Sukreswar Temple, Assam State Museum, Silpagram, Assam State Zoo-cum Botanical garden, Science Museum (Regional Science Centre), Planetarium, Dighali Pukhuri, Deepor Beel, River Cruise (at Panbazar), Tribal Museum, Ethnic Museum, Anthropological Museum and ARTFED Emporium.

Total number of tourists visited Guwahati City during 2008 was 506400, out of which total number of foreign tourists was 53628 and the national tourists were 452772. The total tourists visited Guwahati City during 2007 were 430440 among it total number of foreign tourists were 47949 and the national tourists were 382491. The percentages of flow of foreign and national tourists to Guwahati City during the period 2007-2008 is 10.59 and 15.52 percent respectively and the percentage of total flow of tourists to the Guwahati City during this period is 15 percent as a whole.

2.3.7.vii Social Infrastructure

Social infrastructure is the first and foremost condition for quality and healthy living of the modern people of an area. Guwahati city has considerably good social infrastructure for quality and healthy living of its people in-respect of health facilities (Health and
Hygiene), culture, sports and education. These social overhead infrastructures are stated briefly below.

### 2.3.7.\(vii\) (a) Health Facilities (Medical)

Guwahati city is an important centre for health facilities in eastern India. Many government and private specialty hospitals are available. The most important are the Guwahati Medical college and Hospital, Guwahati Neurological Research Centre (GNRC), Down Town Hospital, B.Baruah Cancer Institute, Sankardev Netralaya, Mahendra Mohan Choudhury Hospital, Red Cross Hospital, Chatribari Christian Hospital, Railway Hospital, Marwari Maternity Hospital, Government Ayurvedic Hospital, International Hospital, T.B. Hospital, Navajivan (Rehabilitation centre), Sanjivanee Hospital, North-East Cancer Hospital & Research Institute and Dispur Poly clinic etc. Excluding government hospitals and laboratories, the total numbers of private sector health facilities are, (i) 51 numbers of Nursing Homes, (ii) 102 numbers of Diagnostic centres and clinical Laboratories and (iii) one Medicine Repacking industry.

### 2.3.7.\(vii\) (b) Health Facilities (Hygiene)

Maintaining good health of the urban populace is an important challenge in Guwahati city. The existing health (hygiene) infrastructure of Guwahati city is shown in Table 2.3.
Table 2.3: Health Facilities Infrastructure and their Enterprises/Arrangements

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of Enterprises/Arrangements</th>
<th>No. of Enterprises/Arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lodge</td>
<td>306</td>
</tr>
<tr>
<td>2</td>
<td>Fooding &amp; Lodging</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>Restaurant</td>
<td>465</td>
</tr>
<tr>
<td>4</td>
<td>Bar &amp; Restaurant</td>
<td>71</td>
</tr>
<tr>
<td>5</td>
<td>Tea &amp; Sweets</td>
<td>167</td>
</tr>
<tr>
<td>6</td>
<td>Bhojanalaya</td>
<td>304</td>
</tr>
<tr>
<td>7</td>
<td>Sweet Selling</td>
<td>175</td>
</tr>
<tr>
<td>8</td>
<td>Sweet factory</td>
<td>66</td>
</tr>
<tr>
<td>9</td>
<td>Cake Biscuits</td>
<td>32</td>
</tr>
<tr>
<td>10</td>
<td>Canteen</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>Fast Food</td>
<td>100</td>
</tr>
<tr>
<td>12</td>
<td>Chaat House</td>
<td>13</td>
</tr>
<tr>
<td>13</td>
<td>Dhaba</td>
<td>21</td>
</tr>
<tr>
<td>14</td>
<td>Bibah Bhawan</td>
<td>43</td>
</tr>
<tr>
<td>15</td>
<td>Coffee and Snacks</td>
<td>13</td>
</tr>
<tr>
<td>16</td>
<td>Ice Cream</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>Juice Corner</td>
<td>14</td>
</tr>
<tr>
<td>18</td>
<td>Paying Guest</td>
<td>23</td>
</tr>
<tr>
<td>19</td>
<td>Catering</td>
<td>19</td>
</tr>
<tr>
<td>20</td>
<td>Cold Drinks</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>Beer Bar</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>Beauty Parlour</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>Club</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>Clod Storage</td>
<td>4</td>
</tr>
<tr>
<td>25</td>
<td>Lassi Corner</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>Mineral Water</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>Bakery</td>
<td>104</td>
</tr>
<tr>
<td>28</td>
<td>Girls’ Hostel</td>
<td>86</td>
</tr>
<tr>
<td>29</td>
<td>Boys’ Hostel</td>
<td>13</td>
</tr>
<tr>
<td>30</td>
<td>Parks</td>
<td>12</td>
</tr>
<tr>
<td>31</td>
<td>Cinema Halls (Entertainment)</td>
<td>15</td>
</tr>
<tr>
<td>32</td>
<td>Amusement</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Enterprises/Arrangements</td>
<td>2124</td>
</tr>
</tbody>
</table>

Sources: i) [www.guwahatimunicipalcorporation.com](http://www.guwahatimunicipalcorporation.com)  
ii) GMC Office, Ulubari Branch, Guwahati.

2.3.7. Sports

Guwahati city has considerably good sports infrastructure. The Nehru Stadium and the Kanaklata indoor Stadium in R.G. Baruah Sport complex in Ulubari locality are two of the old sports complexes in the city. There are smaller stadiums like the N.F. Railway
Stadium in Maligaon and the SAI (Sports Authority of India) sports complex in Paltan Bazar.

Recently completed sports infrastructure specially constructed for the 33rd National Games includes a large stadium at Sarusajai-the Indira Gandhi Athletic Stadium, the Dr. Zakir Hussain Aquatic Complex, and the Karmabir Nabin Chandra Bordoloi A.C. Indoor Hall. Other new sports infrastructure includes the Maulana Md. Tayabullah Hockey Stadium in Bhetapara, the Deshdbhakta Tarun Ram Phookan Indoor Stadium in Ulubari, Rajib Gandhi Indoor Stadium in Amingaon, and Tennis Complex in Chalchal.

The other renovated sports complexes include - Ganesh Mandir Indoor stadium, Khanapara, Rudra Singha sports complex, Dispur and Gauhati University Sports Stadium.

Moreover, along with the Brahmaputra, there are many lakes and rocky hillocks in the city, suitable for various water and adventure sports.

2.3.7.ix Education and Cultural Hub

Guwahati is the centre point for academics, culture and art, social fineries and intellectual pursuits not only for the state of Assam, but also for the entire north-east India. To spread and develop the English education in Assam, the then British colonial rulers started a primary school named ‘Gauhati Cheminary’ in 1834. Actually, as the centre of intellectual excellence, Guwahati started since 1901 with the establishment of Cotton College. To educate the Assamese people, the British rulers helped to establish the Nabin Chandra Bordoloi Library in 1908. For socio-cultural study and to develop the cultural
aspects of the Assamese society, the colonial rulers established the ‘Department of Historical and Antiquarian studies’ in Kachari. With the establishment of Gauhati University in Jalukbari in 1948, Guwahati city has possessed great scholastic and cultural values. The Assam Engineering College and the Gauhati Medical College and Hospital are the two important institutions for science and technology and medical education. Among the city’s many other institutions of higher learning, which have the great influence on the academic and intellectuals fields not only in the state but in entire NER, are the Guwahati Commerce College, Arya Vidyapeeth College, B. Borooah College, Pragjyotish College, College of Veterinary Science, Handique Girls College, Assam Engineering Institute (Engineering Diploma Courses), Pandu College, Guwahati College, LCB College, West Guwahati Commerce College, K.C. Das Commerce College, R.G. Boruah College, Krishna Kanta Handique Sanskrit College etc. With these government institutions, there are other several private higher institutions also.

The Indian institute of Technology Guwahati (IIT-G) is the sixth member of the high-profile world’s renowned IITs in India. Since its establishment in 1994, IIT-G has proven itself as an excellent institution for research and education, evidenced by its high ranking among the IITs in India as reported by a variety of national surveys such as India Today and Dataquest.

In respect of fine arts and culture, the college of Fine Arts and Craft established in Basistha and Directorate of cultural Affairs located in Ambari contributing a great deal in this field. The other institutions offering great effective and constructive help in the development of art and culture are Sankardeva Kalakshetra, Kumar Bhaskar Natya Mandir,
2.4 Methodology

Our study is essentially primary data based. Primary data in respect of IMPUs for the year 2007 (June-July) are collected from the sample enterprises by administering a schedule – cum-questionnaire through personal interview. The data were collected from the owners of these sample enterprises. The important information sought through the schedule-cum-questionnaire are:

i. Identification and operating characteristics of the enterprise.

ii. Extent of income and employment generation.

iii. Constraints under which they operate.

iv. The ways and means adopted by them to overcome the constraints.

v. Their access to various organisations, institutions, markets and resources.

The focus of our study is the IMPUs as defined in the previous chapter.

The analysis and presentation of field data have been undertaken with the help of tables, ratios, simple percentages, growth rates, measures of central tendencies, correlation coefficients and multiple regression models.

The regression models used are as follows.
Model-1 is used to determine the association between output of the IMPUs and size of the firm, fixed capital, working capital and size of the firm.

I. \[ Y = a + b_1 X_1 + b_2 X_2 + b_4 X_4 + b_5 X_5 \]

Where ‘a’ is the intercept

And model-II is used to determine the association between output of the IMPUs and size of the firm, productive capital and age of the firm.

II. \[ Y = a + b_3 X_3 + b_4 X_4 + b_5 X_5 \]

Where ‘a’ is intercept

As the earnings of the entrepreneurs are concerned, the following regression models are used.

Model-1 is used to determine the association between total output of the IMPUs and age, education, sex, family size and caste.

I. \[ Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 \]

Where ‘a’ is the intercept

Model-II is used to determine the association between total sales turnover of the IMPUs and age, education, sex, family size and caste.

II. \[ Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 \]

Where ‘a’ is the intercept
And model-III is used to determine the association between total gross profits of the IMPUs and age, education sex, family size and caste.

\[ Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 \]

Where ‘a’ is the intercept

2.5 Sample Selection

The universe of IMPUs with employment size of less than 10 workers including the owner/operator and members and relatives was derived by pulling together the lists of all those milk producing units in the private sector provided by the Milk Producing Co-operative Societies of the Guwahati City. There are eight Milk Producing Co-operative Societies in Guwahati City. These Societies are (i) 13th Mile Tamulikuchi Milk Co-operative Society (ii) Jorabat Dudh Udpadak Samabay Samittee (iii) 11th Mile Amerigug Milk Producers’ Co-operative Society (iv) 10th Mile Belguri Primary Milk Producers’ Co-operative Society (v) 9th Mile Sivapur Marenga Basti Milk Producers’ Co-operative Society (vi) 8th Mile Ganesh Mandir-Kali Mandir Dudh Udpadak Samabay Samittee (vii) Khanapara Primary Milk Producers’ Co-operative Society and (viii) Maligaon Milk Producers’ Co-operative Society. These societies are registered under the Society Act 1949 of Assam. Again, these societies work under two bigger organisations/plat forms-one is ‘Greater Guwahati Gu-Palak Santha’ and another is ‘Brihattor Guwahati Gu-Palak Santha’.
On the basis of such a pulling together exercise, it was found that the universe consisted of about 601 IMPUs. Considering the facts that this research project is not financed by any external agency and this individual researcher had to meet all the expenditures in connection with this research work from his own sources, we had initially taken a sample of $\frac{1}{3}$ (around 33 %) of the universe which came to 200 units. These sample units were selected from the universe by means of simple random sampling method.

2.6 Issues Raised

The important research issues raised in this study are: Does this sector have any strength? And if yes, what should be the appropriate intervention strategy to support this sector? Do the IMPUs promote higher employment opportunities and income distribution as conceived? Do they depend heavily on informal finance for their capital needs and growth? Is there any link between IMPS and FS? And if any, is it supportive or exploitative?

2.7 Objectives of the Study

The specific objectives of the study are as follows:

(i) To examine the operational characteristics of the IMPUs.

(ii) To examine the output and employment structure of the IMPUs.

(iii) To analyse the capital and cost structure of the IMPUs.

(iv) To examine the finance pattern of these units and to find the importance of informal and formal finance in it.
(v) To study the nature and types of linkages between the IMPUs and the FS.

(vi) In the light of the findings, to specify appropriate policy measures.

2.8 Hypotheses

The following hypotheses have been formulated to be tested in the course of investigation of this study.

(i) IMPUs provide higher output and employment for unit of capital vis-à-vis FS.

(ii) Informal credit plays an important role in financing the productive capital requirements of the IMPUs.

(iii) Growth of IMPUs depends on the FS of the urban economy.

(iv) Socio-economic factors like education, age, caste, and size of the family of the producers/entrepreneurs influence the income levels of IMPUs.

2.9 Outline and Plan of the Study

The study is organised in seven chapters and the scope of each chapter is as follows:

Chapter – I entitled “Introduction and Review of Literature” deals with the origin, evolution, working definition and significance of IS.

The present Chapter (i.e. Chapter - II) “Data and Methodology” provides a brief description of Methodology (sampling process, data collection sources etc.) area, objectives, hypotheses and plan of the study.
The third Chapter is entitled as “Structure and Operation of Informal Milk Producing Units”. It gives an account of the identification characteristics of the IMPUs, their employment, output, capital structures and other operational characteristics.

In the fourth Chapter “Sources of Finance and Informal Milk Producing Units” an attempt is made to analyse the pattern and role of finance (both formal and informal) in the growth of IMPUs.

Fifth Chapter entitled “Linkage Patterns in the Informal Milk Producing Sector” deals with the various kinds of linkages that the IMPUs are having with different agencies. It also explains the implications of such linkages for the IMPUs.

The sixth Chapter “Profile of the Entrepreneurs in the Informal Milk Producing Sector and the Determinants of their Income” explains the personal characteristics of the entrepreneurs and their earning potentials.

The last Chapter is entitled “Summary, Conclusion and Policy Implications”. It summaries the findings of the study and provides relevant suggestions for policy formulation on the part of the government and other relevant bodies.

Notes