An Economic Analysis of Rural Out-Migrating Communities in Dibrugarh District, Assam

A Dissertation Submitted To Sikkim University

In Partial Fulfillment of the Requirement for the

Degree of Master of Philosophy

By

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February 2020

Dedicated to my Parents

Date: 07/02/2020

DECLARATION

I, **Utpaljit Deori**, hereby declare that the research work embodied in the dissertation titled **"An Economic Analysis of Rural Out-Migrating Communities in Dibrugarh District, Assam"** submitted to **Sikkim University** for the award of the **Degree of Master of Philosophy,** is my original work and it has not been submitted earlier to this or any other University for any degree.

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This is to certify that the dissertation titled **"An Economic Analysis of Rural Out-Migrating Communities in Dibrugarh District, Assam"** submitted to the **Sikkim University** for partial fulfillment of the requirement of the degree of **Master of Philosophy** in the Department of Economics, embodied the result of bonafide research work carried out by **Utpaljit Deori** under my guidance and supervision. No part of the dissertation has been submitted earlier to this or any other University for any Degree, Diploma, Association and Fellowship.

All the assistance and help received during the investigation have been duly acknowledge by him.

We recommend that the dissertation be placed before the examiner for evaluation.

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"An Economic Analysis of Rural Out-Migrating Communities in Dibrugarh District, Assam"

Submitted by **Utpaljit Deori** under the supervision of **Dr. Rangalal Mohapatra**, Assistant Professor, Department of Economics, School of Social Sciences, Sikkim University, Gangtok, 737102, India.

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Utpaljit Deori

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INTRODUCTION

1.1 Introduction

Better living, being a natural instinct of human population, migration from one place to another constitutes an important way of achieving it throughout the ages. The human migration which occurred mainly due to scarcity of food, change in climate and of landscape, first occurred around 50,000-70,000 years ago in Africa and the Middle East to Eurasia and slowly spreaded to other parts of the world (Hadit, 2012). The human migration from Africa to India occurred during 65000 years ago (Joseph, 2018). The pattern of migration changes over the year and mainly from the ages of industrialization. The migration of people from the rural to the urban areas mainly started in Europe due to industrialization which further led to the growth of urbanization, employment creation and helps in economic growth (Bhattacharya, 1993). Mortality and fertility which affects the size of population of the country and are both biological factors but migration affects only the place of destination and the place of origin of migration. The surplus labour in rural areas are mainly attracted to the cities and towns due to industrialization and urbanization which creates better employment opportunities for different skills of people and helps in population redistribution (Lewis, 1954). The movements of people from one place of residence to another (mainly from the rural to urban areas) are due to various push factors such as flood, drought, famine and unemployment which pushes the people to move out from their place of residence to other places and pull factors like higher wage, better employment opportunities and urban amenities which mainly attracts the people to migrate to that place. But rural to urban migration is not always attracted by

higher expected income (Meagher, 2001). According to the NELM theory propounded by Lucas & Stark (1985) migration decision is taken jointly by the household or the family members to diversify risk burden and diversify the income source of the household. Migration is a complicated phenomenon where different factors like micro factors (like educational status and marital status), macro factors (like socio-economic condition, political situation, demographic and environmental circumstances), and meso factors (communication technology, social media, and linkage with friends and relatives in the destination) operate together as a driving force in decision making of an individual to migrate from one place to another (Castelli, 2018).

The global scenario of migration reveals the fact that the main destination of international migration since 1970 has been to the United States of America and the second top destination is Germany in 2015 (IOM, 2018). The main reason migration of labour to United States of America and Germany is because of higher salary jobs and better urban amenities (Abramitzky & Boustan, 2017). About half of the international migrants were from Asian origin countries (mainly from India, china, Afghanistan, Bangladesh and Pakistan followed by Mexico and European countries). The migration destination of the Asian countries among the top 20 corridors, 13 were occurring within the Asian region. Most of the migrants in the Asian countries were from the South Asian countries mainly of low skilled and semi-skilled workers particularly in the destination of Gulf Cooperation Council (GCC) countries namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates. They were mainly attracted by higher wages and better economic opportunities. The main reasons for migration of labour from the South Asian countries to gulf countries were high employment, seasonality of work, low wages and

limited economic opportunities. Majority of the migrants from Bangladesh, Pakistan, Nepal and India were male workers of mainly low skilled and semi-skilled workers. Most of the migrants from the South Asian countries were in the age-group 20 to 39 years old (IOM, 2018). The migrants from Bangladesh to the GCC countries were married men (63%) and have schooling of six to ten years (50%). The main destinations are Saudi Arabia (48%) and United Emirates (34%). The average stay of the migrants is for 6.27 year (Rahman, 2012). Pakistani migrants to the GCC countries are observed since 1970s. From 1971 to 2015 about 96% of migrants from Pakistan were employed in the GCC countries mainly in Saudi Arabia of 50% and United Arab Emirates of 33% (Pakistan Bureau of Emigration and Overseas Employment, 2015). Nepal is a newcomer of supplier of labour migrants to the global market. The main destination for short term migration from Nepal is to India while for migration of labour of low skilled and semi-skilled workers for more than 12 years through multiple contract extensions particularly migrate to Malaysia of 24%, Qatar of 19% and Saudi Arabia of 18.8% (Zwager & Sintov, 2017). While migration from Sri Lanka were mainly female dominated. Majority of the women migrants migrate to the GCC countries and were employed as domestic helpers. About 84% of migrants from Sri Lanka migrate to Saudi Arabia, Qatar, Kuwait and United Arab Emirates. 89% of women migrants were employed as domestic helper in 2009 (Sri Lanka Bureau of Foreign Employment, 2009). Migration of labour from India to the GCC countries took place from 1973 due to the incident oil boom in the GCC countries. Migration of labour from India to GCC countries were mainly from the states of Kerala, Andhra Pradesh, Maharashtra, Uttar Pradesh, Bihar and Tamil Nadu. Migration of labour to the GCC countries in the initial phase is mainly from Kerala but

recently Uttar Pradesh and Bihar dominate. Majority of the migrants from India were in Saudi Arabia (38.8%), United Arab Emirates (27.7%) and Kuwait (10.5%) in 2015. The migration to the GCC countries were mainly male dominated however the number of women migrants from the state like Kerala have increased and were particularly engaged in the profession like nursing (Taukeer, 2018). Before migration, the migrants workers from the South Asian countries were mainly agricultural labourers, Industrial labourers, small businessman and artisans. After migration to the GCC countries, they take up as construction workers, drivers, factory workers, domestic helpers and cleaners. Female migrants are mainly engaged as housemaids, cleaners and nurses (Rahman, 2012; Abraham, 2012).

Returning to the internal migration scenario within India reflects the fact that rural-urban internal migration is mainly seen due to the push factors like unemployment, drought, flood, poverty and underdevelopment unlike the case of developed countries where pull factors are more dominant (Kochkin & Sircar, 2014). Parida et.al (2015) using NSSO data of 55^{th} and 64^{th} round found that the highest number of rural out-migration in India is in Uttar Pradesh followed by Maharashtra, Andhra Pradesh, West Bengal, Rajasthan, Bihar, Madhya Pradesh, Karnataka, Odisha and Tamil Nadu in 2007-08. Kerala has the highest percentage of international migration of 9% followed by Punjab (4.5%), Tamil Nadu (1.6%) and Andhra Pradesh (1.6%). In North-Eastern states, the highest percentage of international migration is in Tripura (34%) and lowest in Assam (0.001%). Internal migration is highest in Himachal Pradesh (42%) followed by Haryana (38.6%), Kerala (34.6%), Maharashtra (33%), Uttaranchal (32.9%), Uttar Pradesh (32.4%) and so on in 2007-08. In the case of North-Eastern states, Nagaland has the

highest internal migration of 16.5% and Assam has the second highest percentage of internal migration of 12.2% in 2007-08. The North-Eastern states have the highest percentage of rural out-migrants who moved with their households as compared to the eastern states of India (Hassan, 2012). Most of the migrants from North-East India in Pune, Bangalore, Delhi, Mumbai and Trivandrum belongs Scheduled Tribes and Scheduled Castes people and are engaged in the Hospitality sector like in hotels, saloons, retail shops and restaurants (Kikon, 2018). The plywood industry in Kerala, manufacturing units in Chennai are mainly dependent on the migrants from the North-East India and mainly from Assam which the share majority of the migrants into this sector (Peter & Gupta, 2012; Jeyaranjan, 2017). According to the Census of India (2011) including all duration of residence and considering all ages, Assam has the highest number of rural out-migrants 81,42,045 among all the eight states of North-East India and the most dominant form of migration is internal migration and is in the form of rural to rural areas (70,52,687), second is rural to urban areas (10,89,358), third is urban to urban (8,26,054) and fourth is urban to rural (2,87,100). Male magnitude of rural out-migration is more particularly in case of migration for employment, business, education, moved after birth, moved with household and female magnitude of migration is more in case of migration for marriage. Migration from Assam to the urban areas of other states by place of birth is highest in West Bengal (101,444) followed by Maharashtra (26,750) and Delhi (24,116).

Migration, as a phenomenon has a lot of implications to individuals, society and to the country as a whole. It has serious socio-economic, political, cultural outcomes in the source and the destination of migration both positively and negatively (Mitra, 1990).

The rural-urban migration is essential for industrialization, urbanization, economic growth and also reduction of poverty in the rural area. The remittances sent back by the migrants help the households in boosting the purchasing power; uplifting the standard of living of the households and also help to increase assets like land, agricultural inputs and durable consumer goods. But every migrant from the household is not in a better economic position to send back remittances (Hossain, 2005). The migration of mainly young educated labourers from the rural to the urban areas leads to scarcity of young and able skilled labour in the area of origin. Besides this, it also increases slums areas in the urban areas; exerts pressure on public amenities in urban areas; changing the fertility rate, age structure and mortality rate in both the area of origin and destination (Agesa & Kim, 2001; Maddela, 2017).

1.2 Conceptual Framework

1.2.1 *Migrants and its Various Types*

Migrants are persons who move from one's native place of residence to another within a country or move to another country for settling temporarily or permanently. International Organization for Migration (2011) defines a migrant "as any person who is moving or has moved across an international border or within a state away from his/her habitual place of residence, regardless of (1) the person's legal status; (2) whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is". The types of migrants are: Temporary Migrants (Temporary Migrants are those migrants who migrated for a shorter period of time say between 3 months to 12 months); Short-term Migrants: Nguyen & Winters (2011) define

short-term migrant as an individual who stays in the household for a cumulative period of less than or equal to 6 months in the past twelve months prior to the survey, but was gone the remaining part of the year; Seasonal Migrants: Brauw (2010) defines seasonal migrants as a member of the household who had left for work during the past 12 months; Permanent Migrants (people who migrated for more than one year in the new area from his habitual place of residence); Highly Skilled and Business Migrants (people with qualifications such as manager, professional technicians, executives who move within the country or outside the country); Unskilled Migrants (people who do not have proper skills or lacking any skill or training); Illegal Migrants (are those who enter without any proper legal necessary documents and permit usually for employment purpose from one country to another); Forced Migrants (people who are forced to move due to external factors such as environmental catastrophes such as cyclone, flood, forest fire etc or development projects); Return Migrants (people who return to their origin place of residence after a period in another location within a country or outside the country).

There are various policies and measures taken by the government to stop the migration of people from rural to urban areas and step are also been taken to protect the rights of the migrants workers in the destination area. For example, Article 19(1) (d), (e) and (g) of the Indian constitution provides the rights to citizens of India to move freely to any parts of India except in Schedule Tribes areas and army areas, to reside and settle in any parts of India excepts in Jammu & Kashmir, and to do any trade, business or occupation in many parts of India. The central government and state government set the minimum wages for the payment of skilled and unskilled labour under the Minimum Wage Act of 1948 and are different for different state and for different industry. Whether

the worker is a local worker or migrant worker he must not be given below the minimum wages set by the government and giving below minimum wages will be considered as forced labour. Similarly, Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act of 1979 mainly regulates the working condition of inter-state migrants workers who are working outside their native state in India should get equal wages as native workers in time and should get their travel cost, better accommodation and medical facilities for free, and have the rights to complain to authorities if an accident occurs within three months. For the welfare and social security of the unorganized worker mainly self-employed workers, daily wage workers and home-based workers Unorganized Workers' Social Security Act was enacted in 2008. Under this act, the central government and the state government formulate schemes from time to time for the welfare of the unorganized workers. The Integrated Rural Development Program was launched in 1978 in order to provide productive assets and inputs through government subsidies, loans to the rural artisans, marginal farmers, labourers, scheduled caste and scheduled tribe people and people living below poverty line in order to become self reliant and improve their standard of living so that they do not migrate to the urban areas in search of employment opportunities. For providing employment in the rural area itself and to stop the people migrating from rural areas to the urban areas in search of employment, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was enacted on 25 August, 2005. This act provides rural people with the right to work at least 100 days to every household adult member in rural areas to do unskilled manual work voluntarily in a financial year. For empowering the rural youths Training of Rural Youth for Self Employment (TRYSEM) scheme was launched in 1979

mainly to provide technical skills and training to rural youth of age 18-35 years old so that they become self-employed by taking up in any sector either agriculture, business, service or any other income-earning activities and utilize the resources of the rural areas properly which will help in the development of the rural areas and helps in curbing the rural youths from migrating to the urban areas in search of employment. For decreasing the disparity between the rural and urban areas Provisions of Urban Amenities to Rural Areas (PURA) scheme was implemented in August 2003. The main objective of this scheme is to stop the rural people migrating to the urban areas by making the rural areas attractive as urban areas by providing urban amenities and economic opportunities in rural areas so that the disparity between rural and urban areas is reduced. The concept was given by Dr A.P.J. Abdul Kalam.

Despite taking various policies and schemes by the government for reducing migration of people from rural areas to urban areas still, migration continues from rural areas to urban areas. However, migration is not a vital and permanent solution for the rural people to uplift their standard of living because of its impact on the destination and origin areas both positively and negatively.

1.3 Statement of the Problem

Rural people are mainly attracted to migrate to the urban areas by economic incentives. Attractions of urban life, economic opportunities arising from industrialization, urbanization, improve transport and communication are the other reasons.

Slower growth and low income generating capacity of agriculture, low wages in the agricultural sector, lack of sustained sources of income along with the lack of alternative livelihood opportunities, increasing population pressure at the household level, increasing socio-economic disparities between people and communities, disparities between urban and rural areas, increasing unemployment, unequal land ownership, drought and flood which pushes the rural people to migrate to the urban areas in search of jobs. Surprisingly, only few migrants manage to secure jobs in the formal sector while the majorities are forced to join the informal sector as they are less educated and unskilled.

The uncertain rainfall and the erosion of agricultural cultivable land year by year by the river Brahmaputra and its tributaries led to serious misery to the farmers' causes the migration of rural people to the urban areas.

The migration of labour from the rural to the urban areas mainly by the young age people causes labour shortage, low agricultural production, low food availability, and low-income generation from agricultural activity and affects the rural economy as a whole. There is a loss of more able-bodied labour when the migration of labour belongs to the young age people who are also better educated than non-migrant in rural areas. Besides the migration of young age people from the rural is also changing the demographic structure of the rural areas leaving only the aged people and children in the labour forces.

The study, therefore, focuses to understand the dimension, structure, perception of push and pull factors of the cause of rural out-migration, its impact on agricultural

performance and farming and the impact of remittances on the migrant family back home in the rural areas.

1.4 The Rationale of the Study

Rural out-migration is a common issue. However, it has economic as well as social consequences both good and bad which changes the structure, functioning and the system of the rural and urban economy and the economy of the country as a whole.

Assam is an agrarian economy. Migration is the most common phenomena both in rural as well as in urban areas. Therefore the study will focus on internal migration mainly in the form of rural out-migration. It will enable to explore and evaluate the socio-economic profile of the households who are the frequent migrants and then study will help in evaluating the dominant factors of rural out-migration. The study will also explore the consequences on agricultural activities and on the impact of the remittances of the migrants' household in the origin areas. The findings of the study could help the policymakers in formulating various strategies for the development of the rural areas which could make the rural areas attractive to the rural out-migrants in the urban areas and helps in reducing the rate of rural out-migration. The findings of the study will also helps in contribution to the argument on rural out-migration and also help as a guide for further research.

1.5 Objectives of the Study

1. To examine the socio-economic & demographic features of the rural out-migrant households in the source.

2. To identify the perception of the dominant factors of rural out-migration.
3. To assess the impact of rural out-migration on agriculture mainly in terms of labour availability, crop yield and farm income.
4. To examine the impact of remittances on the expenditure on various items of the migrants family left behind in the origin.

1.6 Research Questions

1. What are the major factors that cause rural out-migration?
2. What are the strategies taken by the migrant family left behind in origin in farming activities as a result of rural out-migration of its family member?
3. What is the impact of rural out-migration on agricultural performance in the source area?
4. What are the impacts on remittances on the expenditure allocation among various items?

1.7 Hypotheses

1. Socio-economic variables like age, sex, education, marital status and number of children has no significant impact on rural out-migration.
2. Rural out-migration has no significant impact on crop yield.
3. Rural out-migration has no significant impact on the expenditure pattern of the migrant family left behind in origin.

CHAPTER: 2

REVIEW OF LITERATURE

2.1 Literature Review

The subject of human migration is interdisciplinary and different theory has been provided by the sociologist, demographers, economists and geographers to examine the causes, process and to analyze the consequence of migration on both destination and origin area. Rural out-migration and its linkage with agricultural production, labour availability and different effects on both the origin and destination have received considerable attention among researcher for the theoretical framework and empirical research. From the vast literature on migration, the study has made a review of the current literature most relevant to the study. An attempt has been made to make an assessment on these issues in general and particularly in rural out-migration in the origin area. In addition to this the review provides an opportunity to know about the data type used, empirical tools employed and the important findings are drawn.

2.1.1 *The Neo-Classical Equilibrium Perspective*

British Geographer Ravenstein (1885) made the first theory building attempt in the field of human migration in his paper "laws of migration" where he provides seven laws regarding people migration. His first law of migration says that distance and migration are negatively related. His second law of migration says that the cities and urban areas that are growing rapidly have migrants from nearby rural areas and the reduction in population in the rural population of the migrant areas are filled up by

migrants from other backward rural areas. His third law of migration says that the mechanism of migrating out and the infiltration of people from one area to another are both oppositely related to each other. His fourth law of migration says that every major migration wave creates an equal and opposite wave. His fifth law of migration says that generally long-distance migration is motivated by preferences. His sixth law of migration says that rural people tend to migrate more compared to an urban residence. His seventh law of migration says that men's migrate less in comparison to female. Women participate more actively in short distance than men. He saw migration as an essential part of development. The neo-classical theory explains migration at the macro level through geographical differences in demand for and supply of labour.

At the micro level, neo-classical migration theory considers migrants as individual actors who make a rational decision whether to migrate or not on the basis of cost-benefit analysis. Assuming that individual has free choice and possess full information about the wages and productivity of work he will make a decision to migrate to that place where his skills were required and he can be more productive and able to earn higher wages.

Neo-classical migration theory looks rural-urban migration as an essential part of the development process which allows the surplus labour in the rural sector to the urban industrial economy (Lewis, 1954). Todaro (1969) tried to formulate a model on rural to urban migration and according to this model the real wage differences in rural and urban areas and in the prospect of getting jobs in the urban areas motivate people to migrate to the urban areas. Later Harris & Todaro (1970) modified this model and says that it is the expected wage or expected income difference in the rural and urban areas and the

prospect of getting jobs in the urban destination areas that motivate people to migrate to urban areas from rural areas. Since then the Harris-Todaro model became the basis of neo-classical migration theory. Later on factors like cost of transportation, the opportunity cost of migration, the psychological cost of migration, temporary unemployment while moving and settling at the destination area were added to the neo-classical theory.

Later refinements of the neo-classical migration theory links with the selectivity of migration which not only consider expected wage but also on other factors like cost of migration, the risk of migration and the human capital characteristics posses by an individual plays a significant role in determining migration. The association of such factors may explain the heterogeneity and forces of migration system.

2.1.2 *New Economics of Labour Migration (NELM)*

The New Economics of Labour Migration (NELM) model became popular and come into appearance in the 1980s and 1990s as a critical response to the neo-classical migration theory and structuralist theory (Massey et al., 1993). The NELM model considers both the positive and negative development developmental effects of migration. This model considers migration as a household strategy rather than an individual as a decision maker (Taylor, 1999). NELM model allows accommodating factors other than the maximization of expected income as an influencing factor of decisions to migrate.

The NELM model looks migration both internal and international as a household strategy for subsistence and diversification of risk as the remittances sent by the migrants helps the family of the migrants in the source as income insurance. The household

strategy of migration as risk diversification can also be explained in the absence of expected income differentials (Lucas & Stark, 1985). The neo-classical migration theory does not consider the role of remittances which in the NELM model it is considered as an important motive for migration.

The NELM model considers migration of people from the rural to the urban areas as an outcome of the market failure, imperfect capital markets, to diversify or reduce risks and for maximization of earnings of the household particularly in less developed countries (Taylor et al., 1996). The remittances send by the migrants helps in purchasing of inputs, acquisition of modern technology in the production process and increase the overall output of production (Rosenzweig, 1988; Taylor, 1999). This provides a pathway to shift from production for household consumption to commercial purposes. The household before sending the migrants to the urban areas adopts a decision simultaneously of the current labour position and other components that will probably influence the short and long term yield and investment (Taylor, Rozelle, & Brauw, 2003).

2.1.3 *Why do People Migrate?*

The urban life, urban facilities, higher wages attract people of the rural areas to migrate out from their place. (Rakotonirina & Cheng, 2015) in their study in Antananarivo found that people migrated from rural Madagascar to Antananarivo city mostly in search of a better livelihood, urban facilities, higher wages, and economic opportunities and tried to settle permanently. The economic opportunities, urban facilities or services and hope of better standard of living in the cities than in the backward and

rural areas attract people to migrate to the cities (Amphune, Weldegebriel, & Enaro, 2018)

Madhu & Uma (2014) in a case study on Manvi Taluk of Raichur district of Karnataka found that people migrate from rural areas to urban areas due to Seasonal unemployment, for repayment of debt and poverty which are the main push factors behind migration. It has been found that migration has led to an increase in income expenditure and saving and fall in debt. 99.6% of migrant workers income has increased due to seasonal migration.

The worsening of agriculture and lack of employment opportunities in rural areas on the one hand and rapidly developing industries and better employment opportunities in the urban areas, on the other hand, forces people to migrate to the cities (Phillips, 1959). The negative impact of an environmental factor on agricultural activities on the rural people results in the insecurity of their lives and forces people to migrate to urban places to earn income and support their family (Das, 2015; Sagynbekova, 2017).

Haberfeld et.al (1999) shows that due to increasing the number of rural population and increasing the number of nuclear families there is increasing the number of disguised unemployment and land scarcity as a result of which people are migrating from rural areas to urban for increasing their income earning, standard of living and to reduce the risk of household.

2.1.4 *Who Migrates?*

Ranathunga (2011) found that mainly young people of below 30 years migrate from rural to the urban areas in Sri Lanka for industrial employment and mainly in the

export processing zone. Ofuoku & Chukwuji (2012) also found the migration of the young population (21-30 age group) from rural to urban areas has led to the labour shortage in rural areas and leaving a large amount of arable land uncultivated.

The head of the household mainly male members of the family migrates from the rural areas to the urban areas to support their family (KC, Wang, & Gentle, 2017). Bhatt (2009) found that male migration rate was higher than the female migration rate with a specific age group of 30-39s and 40-49s. The tendency to migrate and educational attainment is directly related to migration to the urban areas either the distance is short or long from their home in the rural areas (Rele, 1969). Non-married male migrants who are more educated than non-migrant in the rural areas and have low income earning before migration are more prone to migrate to the urban areas (Rehbun & Brown, 2015). Haberfeld et.al (1999) shows that people with post-primary education in the rural areas are more prone to migrate to the urban areas which are about 38% and people having less education than post-primary or having no education are not prone to migrate to the urban areas.

Whereas on the other hand, Singh (1986) shows that single females migrate more in Kerala and in the case of Bihar and West Bengal married females migrate more from the rural areas to the urban areas. The greater the education of women the higher the probability of migration from rural to urban areas than men (Reed et.al, 2010). Sengupta (2013) found a highly significant and negative relationship between education and poverty of rural out-migrant and urban in migrants. The households of temporary out-migrants are significantly poorer than others in rural areas and illiterates. ST migrants are poorer than others in both rural and urban areas (Keshri & Bhagat, 2010). The states

having a higher poverty headcount ratio, there is a greater number of rural out-migration to the urban areas (Parida et.al, 2015). Amphune et al. (2018) in their study in Wolatia Sodo Southern Ethiopia found that 97% of respondent were below age 40 and about 60% of them were unmarried and 2/3 of them have little or no education.

Married couples migrate from rural to urban areas to uplift their standard of living and to utilise the amenities available in the urban areas and mainly to uplift the career of the husband. The higher the education of the husband the higher the probability of migration of the family from the rural to the urban areas but higher the wife education than husband the family migration from rural to urban is not at the same rate (Vidal et.al, 2017). Migration decision of the family is mainly made by the husband rather than a wife and the probability of family migration increases when women had only one child and decrease if the number of children increases more than one (Cooke, 2003). Shauman & Noonan (2007) supported this view and showed that married women earn less benefit from family migration than the married man. Migrant married women lose their earlier jobs after migration with their husband for the betterment of husband jobs in urban areas (Chattopadhyay, 1997). On the other hand, Foged (2016) showed that Danish couples are neutral in migration decision from rural to urban areas when the benefit of migration is either linked with husband or wife betterment of career.

2.1.5 *Direction & Trend of Migration*

The differences in the level of regional development induce people from the backward regions to move to the developing regions. People move from one state to another state which is of short distance, have higher resources, higher wages, lower taxes

and higher central government grants and subsidies (Narayana, 1990). Kochkin & Sircar (2014) using statistical data and learning from case studies have tried to identify shortcomings believe that official data suggest rare existence of short term migration in India whereas case studies are found contradicting the official data. They have found that major factor for SC & ST migration is informal indebtedness. (Pandey, 2013) studying 17 states of India using NSSO data from 1993 to 2007-08 found that rural-urban migration in India is increasing after economic reform and is followed by regional differences in the level of economic development and the distance does not matter to migrate due to developed communication and transport facility. The growth of big cities and already developed urban areas attracts more rural people to migrate out from the rural areas nevertheless the growth of big cities and already developed urban areas is smaller compared to higher growth or the same level of growth in smaller cities and towns (Maddela, 2017).

2.1.6 *Consequences of Migration*

The migration of people from the rural areas to the urban areas, on the one hand, increases the incidence of urban poverty but decreases the overall incidence of poverty due to fall in the rate of rural poverty (Bhanumurthy & Mitra, 2010). The rural-urban migration not only helps the migrants to uplift their standard of living but also helps in the upliftment of rural communities through remittances send by the migrants and involvement of the migrants in the development project of the community (Ajaero & Onokala, 2013). About 60% of the annual household income of the migrants family back home in rural areas comes from remittances (Haberfeld et al., 1999). As the income of the household increases the expenditure on consumer goods and expenditure on durable

goods, health and education increases (Parida et.al, 2015). Male migration to urban areas make wives left behind at home in rural areas more self-confidence in the decision making of day-to-day activities and better financing the remittances sent by their husband (Desai & Benerji, 2008). The remittances sent by migrants help to uplift the life of migrants family back home and also helps the economy of rural areas by creating employment through remittances money and thus reduce unemployment in the rural areas (Sagynbekova, 2017). Ranathunga (2011) found a similar result that rural-urban migration helps in reducing poverty of the rural communities through remittances and non-married migrants sent more remittances regularly than married migrants to their older people and parents.

On the other hand, Hossain (2005) found that rural-urban migration does not necessarily create better economic opportunities for a large portion of the poor migrant. After migration to the cities they lived below the poverty line, most of them are denied to access to employment in the formal sector, urban social and political set up and thus becomes a vulnerable section as a consequence. To overcome the difficulties of urban life they adopt different strategies like sacrificing many essential goods, denying education to children, engaging more family member in the labour force. Different household adopts different strategies in order to cope with poverty and deprivation on the basis of the number of income-earning people. 78% of rural-urban migrants live in the slums area in the cities and for every single job, there are 3 migrants to compete (Ullah, 2004). The increasing number of rural to urban migration and mainly young-age people leads to the shortage of land and rise in land price in urban areas leading to increasing the number of slums areas in the cities and change the fertility rate, age structure and mortality rate in

both the rural and urban areas (Mitra, 1990). The migration to the urban areas from the rural areas also involves a social cost in terms of separation of family, away from rural community life, more pressure on social services and amenities in the urban areas (Maddela, 2017).

2.1.7 *Impact of Rural Out-Migration in Origin*

The relationship between rural out-migration, agricultural production, remittances and expenditure pattern of the migrant household in the origin areas seems to be the prominent issues in the empirical research. From the vast literature, the study has made a review of the current and most relevant literature for the study.

Lipton (1980) observed that rural out-migration and mainly of young age population leads to labour shortage and decline in the agricultural production of the rural areas. The remittances sent by the migrants to their family back home in the place of origin is of small quantity which was used by the household mainly for consumption purpose and they were not able to use them financing on agricultural activities like hiring labour, buying agricultural inputs like better quality of seeds, chemical fertilizers and buying breeds of livestock because of their high prices. A similar result was also found by Tacoli (2002) that rural out-migration of younger age people negatively impacted the production of the rural area and the return from it. The continuous rural out-migration of young age people led to hike the mean age of the working forces. The amounts of remittances sent by the migrants were hardly able to replace the loss of labour and it hampers more when the farming activities are done by hand. Jokisch (2002) found that remittances were not been utilised for agricultural enhancement rather are utilised for

housing purpose and the rural out-migration of people due to economic and environmental reason led to the shortage of labour and have an adverse impact on the production of agriculture. The wages of the sending areas may increase if the loss of labour due to rural out-migration is not replaced by the jobless people and the system of wage flexibility is not there (Lucas, 2007). KC et.al (2017) found a similar result in western Nepal that due to rural out-migration from a higher elevation above 1400m to lower elevation particularly of young age people in the age group of 15-24 years old lead to the labour shortage, higher wage and low crop yield.

On the other hand, Taylor et.al (2003) observed that the decline in yield in the rural migrant household due to loss of labour as a result of rural out-migration is partially compensated by the remittances sent by the migrants. The remittances are used by the household in the acquisition of supplementary inputs or hiring labour. In the initial stage, the migrants may not be able to send remittances but after settled in the new destination, they sent remittances and the reduction in crop yield due to rural out-migration is compensated in the long run which allows the migrants household in the rural area to invest in agriculture (Haas, 2001). Fasoranti (2009) in his study in Nigeria from the perception of non-migrant left behind in the rural areas found that about 80% of the respondents admitted and strongly admitted that rural out-migration allows more agricultural land space for cultivation which ultimately brings about enlarge cultivation and finally rise in crop yield. Hass (2003) in his study in Southern Morocco found that due to rural out-migration the households of the migrants in the rural areas used hired labourers by paying them from the remittances sent by the migrants which lead to hiking in wage rates. Haberfeld et.al (1999) found in his study in Dungarpur district of

Rajasthan, India that every month of the migrant worker increases the household annual income by 7% and every hectare of arable land contribute 16% to household income in the source area.

Deshingkar (2004) reviewed a number of cases in Asia and concluded that loss of labour due to rural out-migration may or may not decrease the productivity of agriculture; remittances probably can or cannot enlarge the accessibility to assets through alleviating credit constraints which probably can or cannot increase the productivity of agriculture and household earnings.

The tools generally used by the researcher for studying migration are Purposive Sampling techniques, Descriptive statistics, Chi-Square test, Fisher test, Radar diagram, Multiple regression Analysis, Hierarchical Cluster Analysis, Kruskal Wallis test, Logistic Regression Model, OLS Regression model, Probit Model , Tobit Model, Unit Root ADF test, Time-series Analysis, Johansen Cointegration test, Vector Error Correction Model, Granger Causality test, Working-Leser Model. The researcher applies different methods to study the same variables or a combination of different methods in a different field area. The variables like education and employment are being studied by Logistic Regression Model, OLS model, Probit model, Tobit model, Multiple Regression Model, and by a combination of Purposive and snowball sampling techniques, Descriptive statistics Chi-square test, Fisher test, Radar diagram.

Using the same method and similar variables, some studies have found contrasting results for different areas of study. For instance, using Multinomial Logistic Regression Model and common variables like age, gender, education, marital status,

nativity and income, Rehbun & Brown (2015) has found that in Israel, educated adult males have a higher probability of migrating whereas Reed et al. (2010) found that educated women in Ghana have higher chances of migrating to urban areas compared to men.

It has been observed that most empirical studies regarding rural-urban migration tend to use Logistic Regression Model, finding similar results like the poor and less-educated young age between 21-34 years old rural populations shows more tendency of migrating to urban areas mainly to reduce household risks and to uplift their standard of living. Remittances sent by male migrants have increased household incomes and also instilled more confidence among their housewives in decision making as well as better financing of the family.

But on the other hand, empirical studies also find that migration to the urban areas from the rural areas does not uplift the standard of living of the rural to urban migrants and they live in the slums areas in the urban areas. They increase the poverty level of the urban areas and also impact the job structure of the urban areas affecting the local natives of the urban areas (Ullah, 2004).

2.1.8 *Research Gap in the Literature*

Different scholars and writers have given their opinion and views on the impact of rural out-migrants on the rural household and on agricultural performance in the rural economy at global, national, state, district and village level. The contradictions in the literature about the impact of rural out-migration are not similar for every area across time and space. The impact of rural out-migration in the destination area is done by many

researchers in the North-Eastern region of India and in Assam. It is realised that a little study has been made on the relationship between the impact of rural out-migrants on agricultural performance and the role of remittances on the expenditure pattern, assets accumulation and a household earning of the migrants' household in the source area in North-East India and particularly in rural areas of Assam. However, no research has been done on the impact of remittances on the expenditure of the migrants household in the origin areas of migration particularly of Schedule Tribes Community in Assam and in Dibrugarh district of Assam. Hence, an attempt has been made to fill the identified research gap on the said topic.

CHAPTER: 3

RESEARCH METHODOLOGY

3.1 Background of the Study Area

The geographical location of Dibrugarh is 27.472834 latitudes and 94.911964 longitudes. The latest GPS coordinates are 27º28’22.2024”N and 94º54’43.0704”E. The major industries in Dibrugarh are Oil and Natural Gas, Tea Production, Power Generation, Fertilizer, Cottage Industry, and Tourism. Dibrugarh is well connected to other parts of India in every field like air, road, train and waterways. The Airport of Dibrugarh is situated at Mohanbari which is 15 km away from the Dibrugarh Town. There are two train stations in Dibrugarh one at Dibrugarh Town in Mancotta Road and the other at Dibrugarh in Banipur. The National Highway (N.H)-37 connects Dibrugarh with other parts of India. The newly constructed Bogibeel Bridge now connects the Northern Bank of Brahmaputra by N.H-52(B). There are three Bus Terminus in Dibrugarh at Chowkidinghee (ASTC Bus Terminus), at Malakhubasa (Muralidhar Jalan Bus Terminus) and at Borbari (AMHC Bus Terminus). Dibrugarh is also connected by waterways known as National Waterways 2 across Brahmaputra river and ferry services are available to Dhemaji District (sengajan, panbari), Oriam Ghat, Kereng Chapori, Sisi Mukh and also to Guwahati.

Dibrugarh is developing rapidly in case of industrialization and communication. It is becoming popular as an Industrial hub of North East India. The newly developed rail-cum-road bridge namely Bogibeel Bridge makes it easier and low cost of transportation

to the city from the district of Dhemaji and Lakhimpur. Dibrugarh is considered as the main centre of activity in case of industry, communication and health care facilities in Upper Assam. It is well connected to other districts of Assam and to the rest of India by air, waterways, roads and railways which make it attractive for business activity.

Dibrugarh town is the largest tea exporting town in India which is the gateway to the three major tea exporting districts namely Tinsukia, Dibrugarh and Jorhat which accounts around 50% of Assam tea produce. Because of this, it is called the Tea City of India.

The large scale industry in the district is Oil India Limited and Assam Gas Company Limited at Duliajan, Brahmaputra Valley Fertilizer Limited and Assam Petro Chemical Limited at Namrup, Brahmaputra Gas Cracker and Polymer Limited at Lepetkata which is India's first largest Nitrogen Plant, Andrew and Yule Limited at Rajgarh, North Eastern Power Corporation at Kathalguri, Namrup Thermal Power Station at Namrup, Tata Tea Limited, Rossell India Limited and McLeod Russel India Limited. The number of Micro, Small and Medium Enterprises is 2849.

The major crops grown in the district are paddy (Ahu, Sali and Bao rice), wheat, maize, mustard seeds, pulses, jute and cotton. Horticultural crops like mango, papaya, banana, orange, pineapple and coconut are grown. Vegetables like spinach, radish, vegetable mustard, chinese mellow, cabbage, cauliflower, tomato, onion, lady's fingers are grown.

3.1.1 *Migration Situation in Dibrugarh*

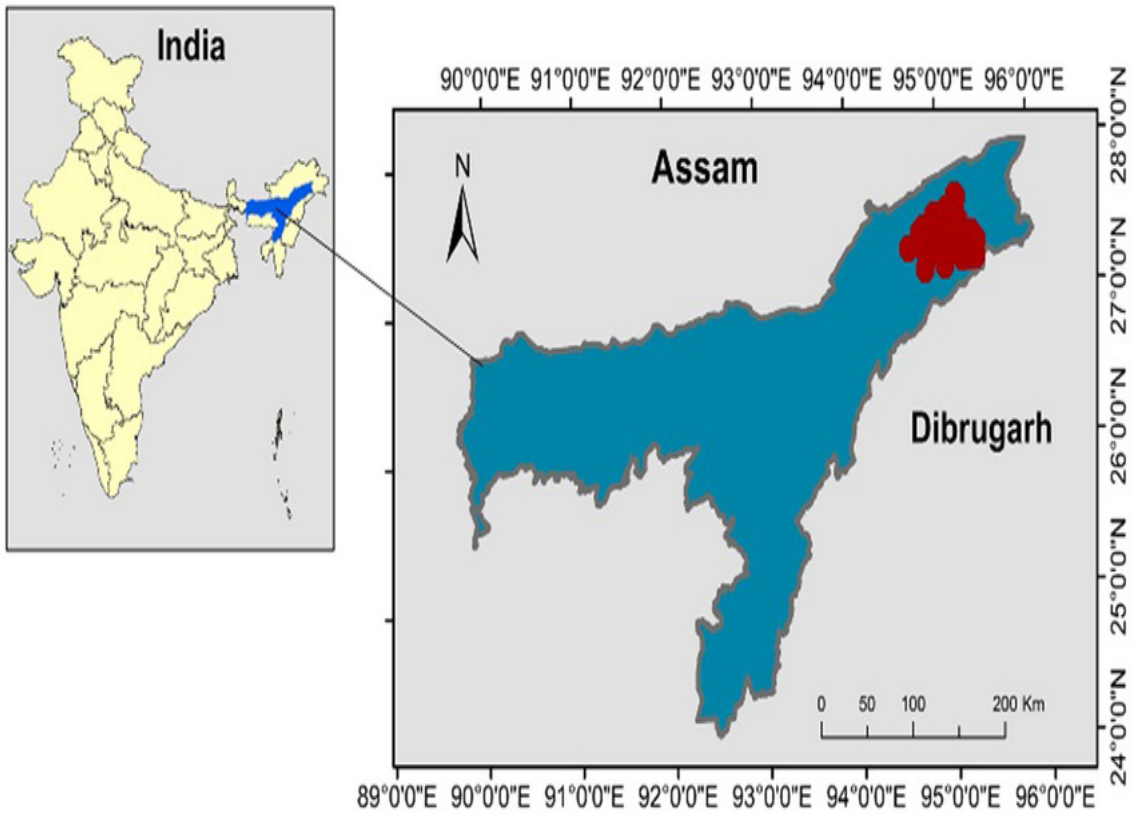
The migration of people from Dibrugarh district is highest to the neighbouring district of Tinsukia and Sibsagar and third to Kamrup district. According to the report of Census of India (2001) by place of birth the number of people born in Dibrugarh District and migrating within the Dibrugarh district is 8,29,919 of which males are 4,36,379 and females are 3,93,540 and the number of people migrating to the rural area is 7,82,717 of which males are 4,10,221 and females are 3,72,496 and the number of people migrating to the urban areas is 47,202 of which males are 26,158 and females are 20,044 which shows that males migration rate to rural and urban areas within the district is more than females. The number of out-migrants from Dibrugarh district to Tinsukia district is 29,682 of which males are 12,346 and females 17,336. The numbers of people migrating to the rural areas are 20,832 of which males are 8,610 and females are 12,222 and the numbers of people migrating to the urban areas are 8,850 of which males are 3,736 and females are 5114. The numbers of people migrating from Dibrugarh district to Sibsagar is 18,288 of which males are 4192 and females are 14,096 and the people migrating to the rural area is 15,440 of which males are 3015 and females are 12,435 and the numbers of people migrating to the urban areas are 2,848 of which males are 1,177 and females are 1,671 which shows that people migrating to the neighbouring district female migration rate is more than male. The third highest number of people migrating from Dibrugarh district is to Kamrup district of 7,932 and of which males are 3981 and females are 3951. The number of people migrating to rural area is 395 of which males are 165 and females are 230 and the number of people migrating to the urban area is 7537 of which males are 3816 and females are 3721 which shows that people migrating to Kamrup district rural

area is less in comparison to migration of people to the urban areas as the largest city of the state and of North-East India is Guwahati city which is located in Kamrup district. The males migration rate is more than females in the urban areas and females migration rate is more than males in case of rural areas of Kamrup district. According to census of India 2011, the continuous increase in the number of migrants to Dibrugarh MG + OG Town has increased the number of slums population and make it among the highest in all Assam (Dibrugarh MG + OG Town, 27089) which is a serious issue for the economy of the city and the state and also for the government. The second highest number of slum population is in Guwahati (M corp.) of 25739. It is also found that in Dibrugarh MG+OG Town has the highest number of illiterate person of 26941 according to the census of India 2011. As Dibrugarh is developing rapidly in case of industrialization and in other economic activities is inducing migration.

According to Assam Human Development Report (2014) the unemployment rate is highest in Dibrugarh district (19.4%) among all the districts of upper Assam and is the second highest among all the districts of Assam next to Cachar district (20.5%). According to the census report, the total population of the Dibrugarh district is 1,326,335 in 2011 of which males are 676,434 and females are 649,901. The number of people living in the rural areas of Dibrugarh district is 1,082,605 of which males are 550,299 and females are 532,306 and the number of people living in the urban areas is 243,730 of which males are 126,135 and females are 117,595. About 81.62% of the population in Dibrugarh district lives the rural areas. Due to the migration of people from rural areas who are mainly agricultural farmers to urban areas affects agricultural production and labour availability in rural areas. According to the census of India, the number of

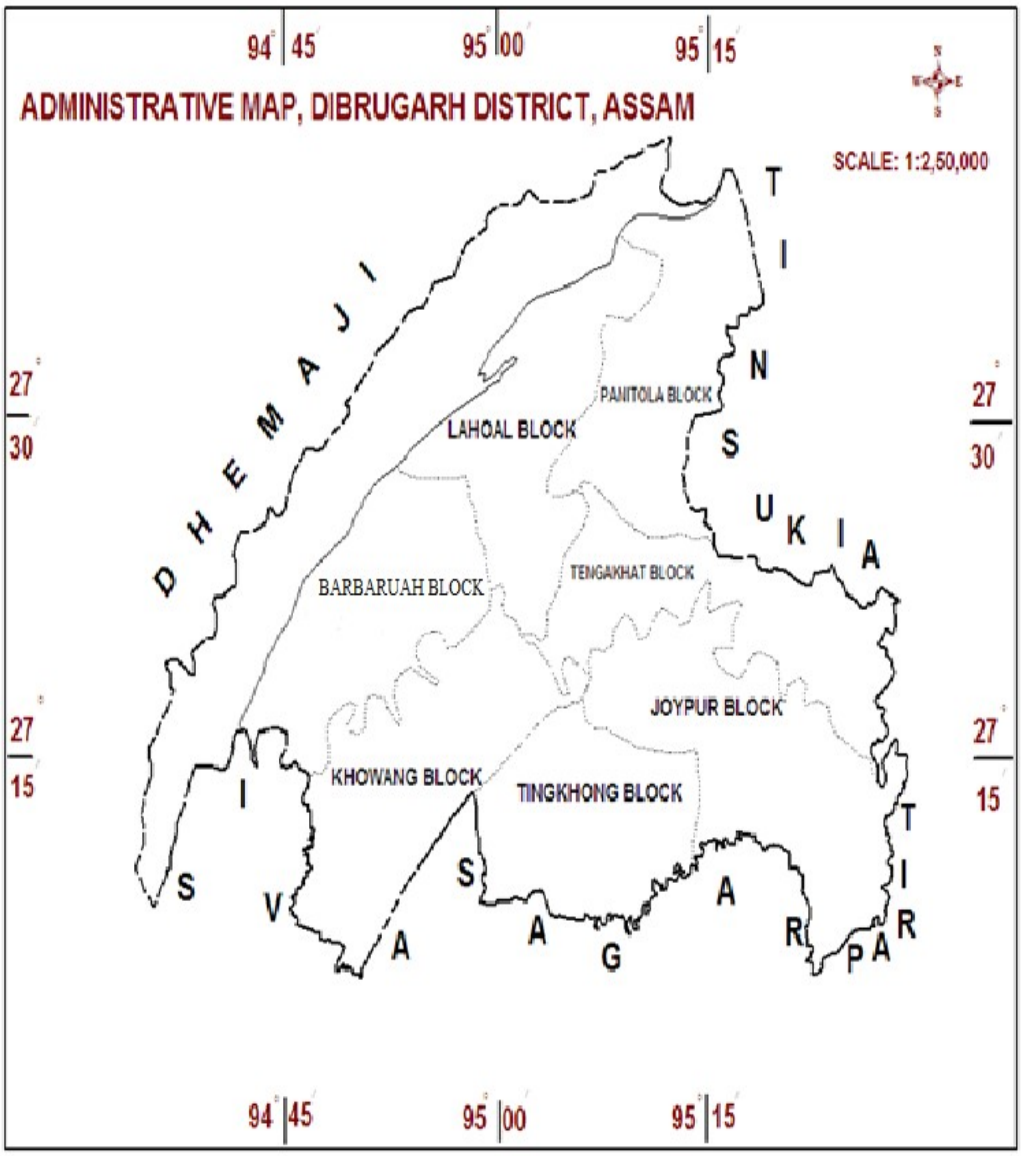
cultivators in Dibrugarh district is 4061627 (33.93%) of the total population in 2001 which decreases to 135194 (24.12%) of the total population in 2011 and the number of agricultural labourers decreases from 1845346 (15.42%) of the total population in 2001 to 61,209 (10.92%) of total the total population in 2011 which depicts that the percentage of cultivator and agricultural labourer is decreasing and will affect the production of agricultural crops and income from it. In the study area of Barbaruah block, the number of cultivators is 19838 (30%) and the agricultural labourer is 7504 (11.46%) of the total population in rural areas according to the census of India 2011.

Fig: 3.1 Map of Dibrugarh District



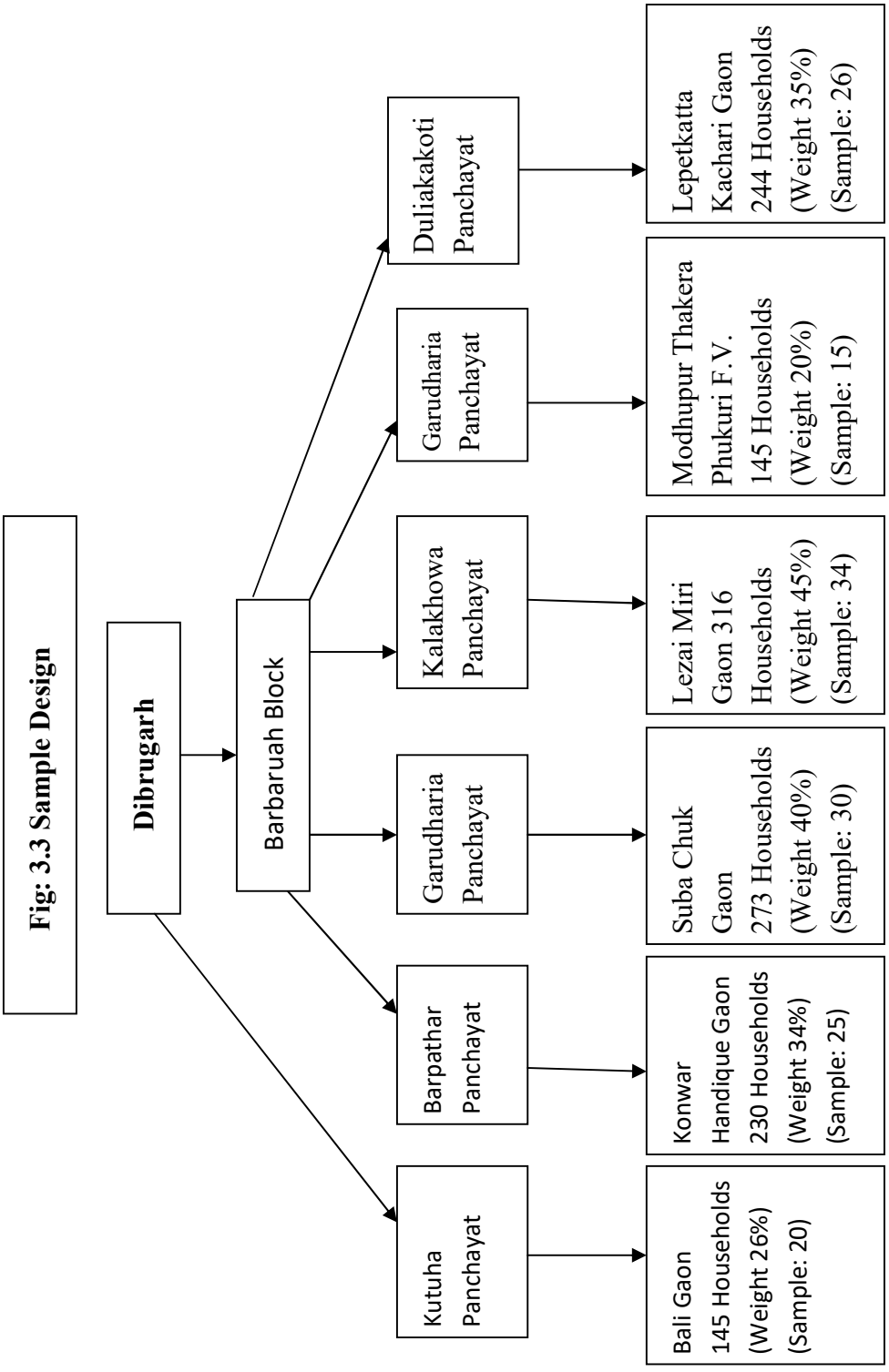
Source: Latha, Vinayak, & Murthy (2017)

Fig: 3.2 Map of Blocks of Dibrugarh District



Source: Central Ground Water Board North Eastern Region, Ministry of Water Resources Guwahati, September, 2013.

3.2 Sample Design



The study has been conducted in Dibrugarh District of Barbaruah Block. In Fig 3.3 the sample design is shown. 3 villages have been selected on the basis of the highest percentage of Scheduled Tribes (ST) category population and households. For comparative study, 3 villages have been selected with the highest number of population and households having no ST population.

3.2.1 *Sampling Technique and Data Collection*

For selecting the sample, multi-stage and purposive sampling techniques have been adopted and primary data has been collected in this study with the help of questionnaire and observation through a field survey of the sampled households in the study area. A total of 150 samples have been collected, 75 samples from ST dominating villages and 75 samples from villages having no ST population. Only those farm households are selected whose family members have out-migrants for more than one year within India.

3.2.2 *Reasons of Selection of Dibrugarh District*

- Assam is a state of India which is situated in the northeastern part of the country. There are 33 districts in Assam out of which some of the districts are more developed than other districts, fertile in land and possesses a large number of the industry while some of the districts lack these characteristics. There is a vast difference between the rural and urban areas in Dibrugarh district, so the study chooses Dibrugarh district purposively. The rural areas in Dibrugarh district are mainly dominated by agriculture and allied activities whereas on the other hand the in the urban areas are mainly industry dominated and posses mainly non-farm employment opportunities.

- Highest rate of unemployment (19.4%) among Upper Assam District and second highest among all Assam after Cachar (20.5%) according to Assam Human Development Report 2014.

- Highest school dropout rate in rural areas due to support earning of the household among Upper Assam districts (47.41%) and 3rd highest among all the districts of Assam. Male school dropout due to failed in exam is highest among Upper Assam (7.76%) and 4th highest among all Assam according to Assam Human Development Report 2014.

- According to Census of India, 2011 about 81.62% of the population in Dibrugarh district lives in rural areas. The number of cultivators decreases from 33.93% in 2001 to 24% in 2011 and agricultural labour decreases from 15.42% in 2001 to 10.92% in 2011.

- Highest number registered MSME- Micro, small and Medium Enterprises (306): Micro (144), Small (156) and Medium Development Report, 2014. [Source: Number of Registered MSME units under the Commissionerate of Industries and Commerce, Assam, 2013-14 to 2016-17].

3.2.2.1 *Reason of Selection of Block*

There is one Sub-division in Dibrugarh district, 7 revenue circle, 7 C.D. Block, 1 Municipality Board, 2 Town Committees, 9 Towns, 93 Gaon Panchayats, 21 Mouzas, 1327 Revenue Villages, 1348 Census Villages. From 7 C.D. Block namely Barbaruah, Lahoal, Panitola, Tengakhat, Khowang, Tingkhong and Joypur, Barbaruah Block has been selected for the rural sample as it has the highest number of ST population. Since

the ST and Scheduled Castes population migration is more than the General and Other Backward Category, Barbaruah Block is selected on this criterion.

Table: 3.1 Reasons of Selection of Barbaruah Block

Highest % of ST population in this Block compared to all other blocks	16.28%
% of the cultivable area to total area	60.45%
% of irrigation area to total cultivable area	0
Agricultural credit society	0
% of rural population served by power supply	95.06% lowest among all other blocks
Age-wise employed in the financial year 2018-19 of MGNREGA Registered person since beginning in age-group (18-30 yrs) is 4571 Registered person since beginning in age-group (31-40 yrs) is 15509	Employed person 364lowest among all blocks 1395Lowest among all blocks

Source: Census of India, 2011; Office of the Commissioner of Panchayat and Rural Development, Assam.

3.2.2.2 *Selection of Panchayats, Villages and Households*

- The Barbaruah Block comprises of 188 villages and 13 Gaon Panchayats which were Barpathar, Bogibil, Barbaruah, Chiring Dainijan, Duliakakoti, Garudharia, Jokai, Kalakhowa, Khanikar, Kutuha, Lezai, Mancotta, and Rajabheta. From the 13 Gaon

Panchayats, the villages having 75 and above the percentage of ST population to total population belongs to 6 Panchayats namely Lezai, Kalakhowa, Garudharia, Kutuha, Duliakakoti and Jokai. From the 6 Panchayats, 3 Panchayats having highest number of ST population and households have been selected for the rural sample. From each Panchayat, one village is selected which has the highest number of ST population and households. The selected villages are Lepetkatta Kachari Gaon of Duliakakoti Panchayat, Lezai Miri Gaon of Kalakhowa Panchayat and Modhupur Thakera Phukuri F.V. of Garudharia Panchayat. For comparative study, 3 villages having no ST population are selected. They are Konwar Handique Gaon of Barpathar Panchayat, Suba Chuk Gaon of Garudharia Panchayat and Bali Gaon of Kutuha Panchayat.

- The reason for choosing the farm household is to evaluate the economic impact of the migrants on agricultural production and its performances as well as to examine and estimate the reallocation of the household expenditure from the remittances. Further, the particular age group (15-55 years) of the migrants is chosen on reasoning that people below the age of 14 who even migrates with their family members for work are not legally allowed to do any manual work. Secondly, the upper age limit is preferred to be taken as 55 as beyond 55 people may contribute for the household work but generally do not get any opportunity to work in urban areas in comparison to the young. According to Census of India 2001, age-wise category migration is seen mainly in this age-group as below 14 years age-group were considered as child labour in India and above 55 years age-group were near to old age-group.
- Census data of India has been retrieved for the information on place of the last residence, age, sex, educational level, duration of residence, purpose of migration. Also

various relevant data have been retrieved from Statistical Handbook of Assam, District Census Handbook and various reports of central and state government.

- Because of time constraint and limited resources of the researcher, only 150 Samples have been collected.

3.3 Quantitative Tools

- 1. To examine the perception of rural out-migration of the community, x^2(chi-square) test is applied. And to see the impact of rural out-migration on agricultural performance binary logistic regression model is used.
- 2. To examine the contribution of remittances on food, healthcare, education, housing and consumer goods Working-Leser model (Working, 1943; Leser, 1963) have been used in the present study. The Working-Leser framework describes the budget share of the household linearity to the logarithm of the total expenditure of the household. To estimate the impact of remittances on each category of household expenditure pattern seemingly unrelated regression (SURE) technique is applied which allows in analysing the model with multiple equations and correlated error terms (Zellner, 1962).

CHAPTER: 4

SOCIO-DEMOGRAPHIC FEATURES OF THE STUDY AREA

This chapter will explain about the socio-demographic features of the migrants' and their households in the place of origin about their family size, number of children, total monthly gross income, household durable assets, landholding, numbers of migrants, migrants' monthly income and migrants' education level.

4.1 Socio-Demographic Features of Migrants' Households

4.1.1 *Family Size of the Migrants' Households*

Family size is an important factor that affects the household day to day expenditure. Besides, this family size also reflects about the availability of labour force in the household.

Table: 4.1 Family Size of the Migrants' Households in Total in Origin Place

Size of Family of the Migrants' Households	Frequency	Percent
Small (3-4 Members)	73	48.7
Medium (5-8 Members)	77	51.3
Total	150	100.0

More labour means more income earning person and more saving. Availability of more labour in the households also helps in the agricultural activities and less chances of hiring labour for the agricultural activities. The above Table 4.1 shows that majority (51.3%) of the migrants family sizes were of medium size of 5-8 members in the household. The small size family is 48.7% consisting of 3-4 members in the household. Now family size does not matter much in relation to decision of migration of people from rural to the urban areas. Migrants family in the origin whether it is of small or medium, family members migrates to the urban area mainly to increase the level of household income, for the expenses of household expenditure, for education of their children and for reducing the risk burden. The increase in the prices of day to day expenditure, lack of employment opportunities, lack of alternative employment opportunities, marginal size of agricultural land holding and crop loss due to floods forces the rural people to migrates to the urban areas to support their family and also providing the household a sense of relaxation that one of its family member (migrants member) is having a stable source of monthly income besides the household in the rural areas which is mainly dependent on agriculture for their earning and which is mainly seasonal.

4.1.2 *Numbers of Children of Migrants' Households in the Origin*

Greater the number of children more is the burden on the household because it increases the number of dependents in the households and also the expenditure on them. Besides, children are not demand in the rural areas to do labour work because they are less skill, not well efficient and also require more time. In the urban area also they are not demanded because employing children in labour work under the age of 14 years old will fall under the crime of child labour.

Table: 4.2 Numbers of Children of Migrants' Households in the Origin

Numbers of Children	Frequency	Percent
No Children	68	45.3
1-2 Children	80	53.3
More than 2 Children	2	1.3
Total	150	100.0

From the Table 4.2 it is found that 53.3% of the migrants' families have 1-2 children and only 1.3% of the migrants' families have more than 2 children. This reflects that family planning is quite prevalent among the family of the migrants' households. Besides more the number of children means more the expenditure of the household and less earning person of the household. Further children are less skill and not young able to contribute to the household income. As a result the migrants' family mainly prefers to have one or two children only because more number of children increases more economic burden of the household. There are 45.3% of the migrants' household who do not have any child which is due to mainly because of the migrants is single or the migrants are newly married. There are only 1.3% of the migrants' households who have more than 2 children and it is mainly seen in those household who have joint family system in the households.

4.1.3 *Number of Earning Person of the Migrants' Households*

Greater the number of earning person more the level of household income and lesser is the burden on the household for their day to day and other expenditure. Beside this, in the households who have more number of earning person they have less household risk as compared to the household who have only one earning person. More number of earning person in the household contribute to the accumulation of household assets like purchase of new land, expansion of business, addition of household durable consumer goods, construction, renovation and expansion of the house.

Table: 4.3 Number of Earning Member of Migrants' Households

Number of Earning Person	Frequency	Percent
1-2 Earning Members	100	66.7
More than 2 Earning Members	50	33.3
Total	150	100.0

The Table 4.3 shows that majority (66.7%) of the migrants households have 1-2 earning members in the family which reflects due to less number of earning person in the family to support, mainly the male member of the household migrate to the urban areas to support their family and the spouse are left behind with their children in the origin and some households with their old parents and children for maintaining the household and farm activities. It is seen that 33.3% of the migrants household have more than 2 family

members who migrates to the urban areas which is mainly for increasing the household level of income, for stable source of monthly income and for higher wages. Low income earning from agriculture due to marginal size of agricultural land holding and increasing decline in the size of holding of agricultural land due to increasing number of family members in the household and due lack of employment opportunities the family member whether the household have availability of two labour or more than two labour who are capable of earning mainly migrate to the urban areas in search of jobs for their better future and for raising the household income through which the migrants' household in the origin could buy agricultural land or any other assets, can hire leased-in land and reduce household risk.

4.1.4 *Gross Monthly Income of the Migrants' Households Including the Monthly Income of the Migrants*

Household income mainly decides the household member either to migrate to the urban areas in search of employment or do some non-farm activities in the rural area itself in order to increase the household income and reduce household risk burden. Higher the income of the household lesser is the probability of the household to migrate to the urban areas from the rural areas because higher household income have less risk burden as compared to the households who have lower household income. The Table 4.4 shows that majority (75.4%) of the migrants monthly household gross income is in the range of rupees 10000-25000 which reflects lower household income mainly forces the rural areas people to migrate to the urban areas mainly to increase the level of household income.

Table: 4.4 Total Monthly Gross Income of the Migrants' Households

Monthly Gross Income	Frequency	Percent
₹ 10000-25000	113	75.4
₹ 25000-40000	32	21.3
₹ 40000-65000	5	3.3
Total	150	100.0

The increasing day to day expenditure of the household, low income from agriculture due to marginal size of agricultural cultivable land and increasing the member of the household mainly increase the risk burden of the household for maintaining the day to day expenditure of the household on food, health, education of their children and on other household consumer goods. Besides this the lack of other alternative employment opportunities and very few non-farm employment opportunities prevailing in the rural areas the household members mainly the male member of the household migrate to the urban areas in search of jobs of higher wages and of regular income in order to reduce the risk burden of the household. It is mainly seen that household monthly gross income in the range of ₹ 40000-65000 there is only 3.3% of migrants household and which is mainly due to one of its family member of the household is an government employee. This reflects that higher household income have less probability of migration of its family members to the urban areas because higher household income have less household risk burden compared to lower household income. And monthly gross income in the range of

₹ 25000-40000 there is 21.3% of migrants' household which is mainly due to migration of more than one family member from the household and migrants' having occupation mainly in business, company worker of higher position and higher income earning jobs of monthly income in the ranges of ₹ 16000-22000.

4.1.5 *Government Employee of Migrants Households*

The government employee of a household mainly has a stable source of income and has higher income than the income from agriculture. But the number of government vacancy jobs is very less as compared to the jobs opportunities created by the private sector.

Table: 4.5 Having Government Employee in Migrants' Households

Type	Frequency	Percent
No any Govt. Employee	139	92.7
Having Govt. Employee	11	7.3
Total	150	100.0

Only few people in the rural areas are able to successfully get government jobs. In the study area there are only few people of the migrants' household who have at least one of its family member having government jobs. From the Table 4.5 it is observed that only 7.3% of the migrants' household have government employee in the household. But besides having government employee in the household there is still migration of family

member from the government employee households because migrants migrate to the urban areas mainly for the better future of their own, to support their family and for the education of their children . In a joint family or nuclear family one member of the household is engaged in government jobs and the migrants have the responsibility of his own wife and children. For non-married person they mainly migrate to the urban areas for regular income and for the settlement of jobs for their better future. Besides, it is also observed that now staying together of two brother of one married and one unmarried in the same household, but after marriage of non-married brother the family mainly goes for separation. Keeping the probability of this in mind migrants either married or unmarried mainly migrates for the better future of his own and for his family of his wife and children. It is observed from the Table 4.5 that majority (92.7%) of the migrants household do not have any government employee in the household which indicates that no government employee in the household have no any stable source of income than the households having government employee and have greater risk burden which pushes the rural family members having no any government employee in the household to migrate to the urban areas in search of better employment opportunities, higher income and regular monthly earning jobs so as to increase the level of household income for the day to day and other expenditure of the households and reduce the risk burden of the households.

4.1.6 *Family Type*

Prevalence of joint family system is mainly less observed in the study areas. People in the study areas of the rural areas are now separating from the joint family and are forming nuclear family, building their houses in the same compound or little near than the earlier house in which they were living together as a joint family. In a joint

family system major household decision are taken jointly by the household and mainly by the elder one. There is mainly seen of family dispute regarding the expenditure and investment cases when family are living together as a joint family. But after separating from the joint family and forming a nuclear family the new form family can take decision of the household by their own like expenditure of the household, savings and investment decision.

Table: 4.6 Family Type of Migrants' Households

Family Type	Frequency	Percent
Joint	34	22.7
Nuclear	116	77.3
Total	150	100.0

From the Table 4.6 it is observed that there is only 22.7% of joint family of the migrants' households and majority (77.3%) of the migrants' households are of nuclear family which depicts that joint or nuclear family does not matter much in regard to migration of family member to the urban areas from rural areas. Now family mainly prefers to have nuclear family which provides freedom of taking decision in matter to way of living.

4.1.7 *Housing Type of the Migrants' Households*

The housing condition of the household mainly reflects the economic conditions of the household. Better housing condition (pucca house) also reflects about the socio-economic status of the household. Mainly the poor background people who have less household income lives in kutcha houses because they do not have sufficient money to build pucca houses. The household who is little better of build semi-pucca houses and the household who have better household income are able to build pucca houses. The Table 4.7 shows the housing condition of the migrants' household. Majority (62.0%) of the migrants' household are kutcha which also reflects that majority of the migrants from rural to urban areas are from houses of poor economic background.

Table: 4.7 Housing Type of Migrants' Households

Housing Type	Frequency	Percent
Kutcha	93	62.0
Pucca	22	14.7
Semi-Pucca	35	23.3
Total	150	100.0

Only 14.% of the migrants' household has pucca houses and mainly of the household whose occupation were business, company worker of higher rank and of household having one of its member in government jobs which reflects that households

which have higher source of income are able build pucca houses. On the other hand there is also less number of Semi-pucca houses of the migrants' household which is 23.3% and mainly build by the households who have more number of earning person, whose migrant's income is from ₹ 14000-20000 monthly and by the households who have migrants in the urban areas for more than 2 years. The regular contribution of remittances sent by the migrants helps the households in the renovation, construction and betterment of the housing condition of the household.

4.1.8 *Cooking Fuel*

The types of cooking fuel used by the households not only indicate the exposure to pollutants but also indicate about the household economic conditions. It is observed from the Table 4.8 that majority 58% of the household have gas bought by the household of their own expenditure. The household used both gas as well as firewood because refilling cylinder is quite costly for the migrants' household in the rural areas.

Table: 4.8 Cooking Fuel of the Migrants' Households in the Origin

Cooking fuel	Frequency	Percent
Firewood only	7	4.7
Govt. Gas+ Firewood	56	37.3
Own Gas+ Firewood	87	58.0
Total	150	100.0

Only 37.3% of the migrants' households have received gas provided by the government. And 4.7% of the migrants' household still relies on firewood as a source of fuel for their cooking. This depicts that the 'Ujjwala Yojana Scheme' of the government has not reached to the entire households in the rural areas. The reason behind this is that majority of the rural household does not know how to fill up the form due to illiteracy and ignorance about the updates of distribution of gas and some due to corruption and favoritism within the rural areas among the high officials and panchyats members of the rural because of which not every household in the rural areas received the benefits provided by the governments. Beside this the household who are getting free gas from the government mainly cooked less because they do not have money to refill the gas and mainly it is seen study area that majority of the refilling of LPG gas cylinder is done after 3-4 months. Beside this there is also transportation cost for refilling of LPG gas cylinder because rural people have to travel to the gas godown which is situated in the town areas. They mainly used gas for boiling water, boiling milk, making tea, omelette and dishes which can be cooked within very less amount of time. They mainly prefer to cook in firewood because firewood is easily available in the villages.

To see the whether there is any relationship between housing type and cooking fuels used by the migrants' households we run chi-square test. The Table 4.8.1 shows the relationship between housing type and cooking fuels. The chi-square result ($\chi^2 = 20.975$, df = 4, p-value = 0.000) shows that there is significant relationship between the housing type and cooking fuels used.

Table: 4.8.1 Relation between Housing Type and Cooking Fuels

Housing Type	Cooking Fuels			Total
	Firewood	Govt. Gas + Firewood	Own Gas + Firewood	
Kutcha	7	45	41	93
Pucca	0	3	19	22
Semi-Pucca	0	8	27	35
Total	7	56	87	150

It is observed from the Table 4.8.1 that only firewood as a source of cooking fuel is mainly used by the kutcha household of low income household and in the pucca house it is seen that LPG gas cylinder and firewood are used mainly by the higher income households. Government gas of Ujjwala Yojana Scheme is been reached to only 56 household of the migrants' family out of 150 samples in the rural areas of the study area and 87 household have their own gas. While 7 households have no any own gas or government gas and still rely on firewood as a cooking fuel. Due to low level of education of the household member, favoritism of the panchyats members in distributing the government gas and also due to wrong form fill up or do not know how to fill up a form by the household are the main reasons behind the not receiving the government gas of the Ujjwala Yojana Scheme.

4.1.9 *Sanitation Facility of the Migrants' Households*

Proper sanitation facility not only helps the household in the keeping the household area clean but also helps the household members in maintaining good health and to keep away from diseases like cholera, diarrhea and dysentery which affect more easily to children under 5 years old.

Table: 4.9 Sanitary Facilities of Migrants' Households in the Origin

Sanitary Facility	Frequency	Percent
No	5	3.3
Yes	145	96.7
Total	150	100.0

The Table 4.9 reflects that majority (96.7%) of the migrants' housholds have sanitation facility. Majority of the households sanitation facility is provided by the government under the Scheme of 'Swachh Bharat Mission' which reflects that public toilet scheme have been reached to majority of the rural household and some are build by the households of their own expenditure. Besides this the pucca latrines provided by the government are of very small size and some household who have pucca latrine build by of their own expenditure and getting government latrine use it for only urine purpose and some household left it as un-functional due to its small size. Only 3.3% of the migrants' households do not have sanitation facility and are using pit latrine. They do not get public

toilet because of recent separation from nuclear family and mainly due to corruption and favoritism of the members of the rural local body in distributing the public toilet.

4.1.10 *Borrowing Source*

Borrowing source helps the household in financing at the time of emergency. The borrowing sources are mainly government banks, private banks, self-help group, friends and relatives. Mainly the borrowing from friends and relatives without any interest is most prevalent in the rural areas of the study areas because the money is received immediately without any paper work formalities and collateral. Self-help group is another source prevalent in the rural which helps the household in taking larger amount of borrowing than taking from friends and relatives because it is given to its member of the household with a very low rate of interest.

Table: 4.10 Borrowing Sources of the Migrants' Households in the Origin

Borrowing Source	Frequency	Percent
Friends & Relatives Without Interest	32	21.3
Mixed	118	78.7
Total	150	100.0

The source of borrowing in the study areas is mainly friends and relatives without interest, from Self Help Groups at a low rate of interest and from banks. There is not seen

of borrowing from money lender at certain rate of interest in the study areas. The Table 4.10 shows that 21.3% of the migrants' households borrow from only friends and relatives without any rate of interest because it is received immediately or sometimes within a short span of time and does not require any collateral. Besides taking loan from banks require lots of paper work, collaterals to be submitted and also require time to receive the money. Majority 78.7% of the migrants' households borrow from a mixed source (friends and relative without any interest rate, Self Help Groups and banks). For small amount of money the migrants' households mainly borrow from friends and relatives and for larger amount of money the migrants' households borrow from either self-help group or from banks.

4.1.11 *Beneficiary Cards*

The beneficiary card issued by the government mainly help in getting the services at the subsidized prices which is lower than the market rate.

Table: 4.11 Beneficiary Cards of the Migrants' Households in the Origin

Beneficiary Card	Frequency	Percent
BPL Card	20	13.3
APL Card	130	86.7
Health Card	136	90.7
Old Age Allowance	14	9.3
Ration Card	150	100
Job Card	150	100

The beneficiary card of the households reflects the subsidy facilities that are enjoyed by the household provided by the government. It is observed from the Table 4.11 that households having BPL card holder there is only 13.3% of the migrants' households in the study area. Majority (86.7%) migrants' households are APL card holder which reflects that people living below poverty line is very less in the study areas. Old wage allowance is enjoyed by only 9.3% of the migrants' households. Most of the old age people do not apply for old age allowance because of not knowing the procedure of applying and also due to illiteracy. There is 100% of ration card and job card in the migrants' households of the study areas. The benefits about the Health card are not known by the migrants' households.

4.1.12 *Land Holding of the Migrants' Households*

The size of land holding of a household mainly reflects about the availability of land for crop production and other purposes.

Table: 4.12 Land Holding of Migrants Households in the Origin

Landholding of Migrants' Household	Frequency	Percent
Marginal (Below 1.0 Hectare)	144	96.0
Small (1.0-2.0 Hectare)	6	4.0
Total	150	100.0

The increase in the number of family members of the household generation after generation the size of land holding per members of the household is gradually declining. Greater the size of landholding greater is the capability to produce more crops. From the Table 4.12 it is observed that majority 96% of the migrants' households have marginal land of below 1 hectare. Due increase in the size of population at the household level the land-man-ratio of the household land holding as per member of household gradually reduce and leads to scarcity of land for cultivation purpose which leads to either hire leased-in land as an option for production of agricultural crops to support their family. With the increase in population size and decrease in the size of land holding the agricultural production is of low quantity and farmers have low income earning as result of scarcity of land. Scarcity of land, crop failure due flood, no irrigation facility system, lack of alternative employment opportunities and increase in day to day household expenditure increases the probability of migration of family members to the urban areas to increase their household level of income and reduce the risk burden.

4.1.13 *Use of Leased-in Land by Migrants' Households*

The leased-in lands are generally used by the migrants' households who have less holding of land. To fulfill the food demand of the household the families have to hire the land of other for their agricultural purposes. Due to increase in the size of population at the household level there is an negative impact on the size of land holding as the number of members of its family increase in the household.

Table: 4.13 Use of Leased-in Land by Migrants' Households in the Origin

Leased-in Land	Frequency	Percent
No Use of Leased-in Land	132	88.0
Use of Leased-in Land	18	12.0
Total	150	100.0

The Table 4.13 shows that only 12% of the migrants' households use leased-in land and is mainly used by the joint family due to increase in the size of family members to feed and by the households who have only 1 bigha of agricultural land. 88% of the family does not use leased-in land mainly due to nuclear family of small family size consisting of 3-4 members. The families who have more members in the households and mainly by the joint families who have marginal size of land holding are not able to fulfill the food demand of the household for the whole year and their food stuff last for only 7-8 months for which they to hire the land of others for their own agricultural purposes. The remittances send by the migrants helps the household in hiring leased-in land for agricultural purposes in order to fulfill the food demand of the household.

Table: 4.13.1 Relation between Size of Family of the Migrants' Households and Leased-in Land Use

Family Size	Leased-in Land		Total
	No Leased-in Land use	Use of Leased-in Land	
Small (3-4 Members)	72	1	73
Medium (5-8 Members)	60	17	77
Total	132	18	150

The Table 4.13.1 shows the relationship between size of the family and use of leased-in land. The chi-square result (χ^2 = 15.217, df = 1, p-value = 0.000) shows that there is significant relationship between the size of family member and leased-in land use. This same thing is also confined by likelihood ratio test and fisher's exact test. The used of leased-in land is mainly seen to be used by the households whose family size is of medium size consisting of 5-8 members. More number of persons in the household requires more food production. But due to scarcity of land and marginal size of landholding and having more members in the household could not have sufficient food production for the whole year as a result as the household have to hire leased-in land. The remittances send by the migrants helps the household in hiring land for agricultural purposes.

Table: 4.13.2 Relationship between Earning Members in Migrants' Households and Use of Leased-in Land

Numbers of Earning Members	Leased-in Land		Total
	No Leased-in Land use	Use of Leased-in Land	
1-2 Earning Members	92	8	100
More than 2 Earning Members	40	10	50
Total	132	18	150

The Table 4.13.1 shows the relationship between numbers of earning members in the migrants' households and use of leased-in land. The chi-square result ($\chi^2 = 4.545$, df = 1, p-value = 0.33) shows that there is significant relationship between the size of family member and leased-in land use. This same thing is also confined by likelihood ratio test and fisher's exact test. More earning person make the household capable of hiring leased-in land to the families who have more family members and less land. The increase in the number of earning members in the household mainly contributes to increase in the household income and helps in fulfilling the food demand for the entire year through leased-in land.

4.1.14 *Leased-Out Land*

Leased-out land in the study area are mainly given by the household who have more land than required to fulfill the food demand of the family for the entire year.

Table: 4.14 Leased-Out Land by the Migrants' Households

Leased-out land	Frequency	Percent
No leased-out land	146	97.3
Leased-out land	4	2.7
Total	150	100.0

Mainly land is leased-out if land is more as per member of the household. The Table 4.14 shows that only 2.7% of the migrants' households leased their land out for agricultural purpose to other households whose have less agricultural land for their cultivation. The leased-out land is mainly given from the households that have more land than required to fulfill the food demand of the households for the entire year and by the households who have less number of labour to do agricultural activities. Leased-out land is mainly given by the households in return of cash or in return of half crops produced of the leased land.

4.1.15 *Change in Agricultural Landholding*

The change in land holding in the study area is of very less percentage. There is increase in size of land holding by those households who have more numbers of earning members in the household.

Table: 4.15 Change in Agricultural Land Holding of Migrants' Household in the Origin

Change in Land Holding	Frequency	Percent
Constant	111	74.0
Increase	39	26.0
Total	150	100.0

The Table 4.15 shows that only 26% of the migrants' households are able to buy land or invest in the purchase of land and mainly by those migrants' households who have 2 migrants from the household or migrants whose monthly salary is from ₹ 16000-22000 and to household who have government employee in the household. Majority 74% of the migrants' households do not buy land because of low household income and some due to expenditure in some other area.

Table: 4.15.1 Change in Land Holding and Family Size

Family Size	Change in Land Holding		Total
	Constant	Increase	
Small (3-4 Members)	66	7	73
Medium (5-8 Members)	45	32	77
Total	111	39	150

The Table 4.15.1 shows the change in land holding in relation to the size of the family. The chi-square result (χ^2 = 19.906, df = 1, p-value = 0.000) shows that there is significant relationship between the size of family member and change in holding. This same thing is also confined by likelihood ratio test and fisher's exact test. Mainly large family has more human capital and as a result more earning person which ultimately contribute to the household source of income. Due to increase in the size of family members and scarcity of land as per member of the household when the household income increases family mainly buys land.

To see whether there is any significant relationship between the number of earning members and change in landholding we run the chi-square test. The Table 4.15.2 shows the change in land holding in relation to the number of earning members in the household. The chi-square result (χ^2 = 15.593, df = 1, p-value = 0.000) shows that there is significant relationship between the number of earning members and change in holding. This same thing is also confined by likelihood ratio test and fisher's exact test.

Table: 4.15.2 Numbers of Earning Members and Change in Land Holding

Earning Members	Change in Land Holding		Total
	Constant	Increase	
1-2 Earning Members	84	16	100
2 or More Earning Members	27	23	50
Total	111	39	150

The result shows that increase in the number of earning member there is more income of the house. Majority of the migrants household have marginal size of land holding and there is scarcity of land as the number of family size increases. when more members of the family in the household start earning the households' level of income increases and the households are capable of buying land in order to remove the shortage of land. More land means more production, more income and more food that fulfill the food demand for the entire year.

4.1.16 *Types of Land Increment*

The types of land increment seen in the study area are mainly tea land, paddy land and home land. Mainly there is seen of more percentage of land increment of tea land. Now families are purchasing land and converting them into tea garden, as income earned from tea is more profitable than paddy cultivation.

Table: 4.16 Land Increment Types of Migrants Households

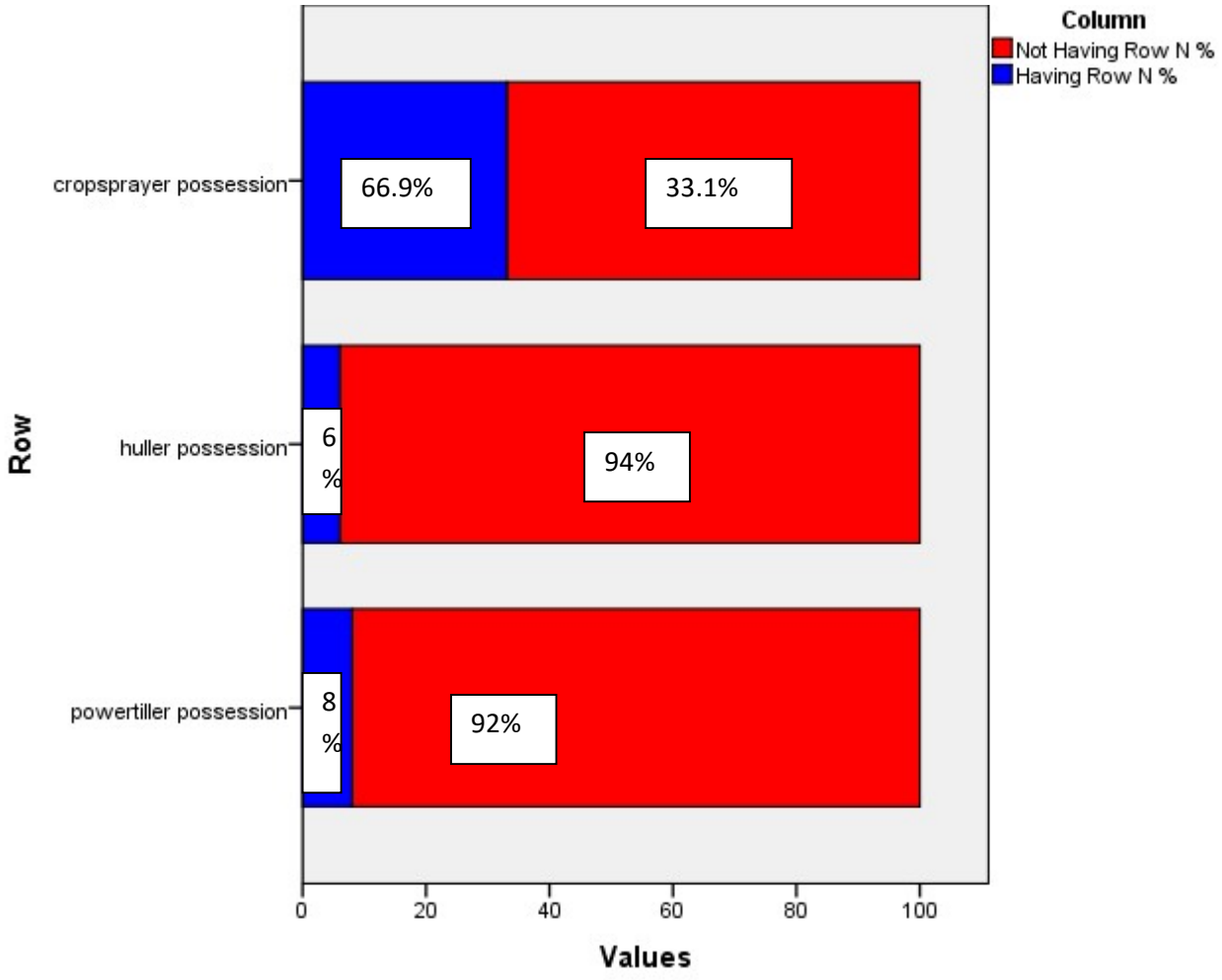
Land Increment Types	Frequency	Percent
No Increment	111	74.0
Paddy and Homeland	17	11.3
Tea land	22	14.7
Total	150	100.0

The Table 4.16 shows that now migrants' household are interest to buy more tea land because tea is more profitable than paddy cultivation which is 14.7%. Now the migrants' household started to do tea garden as a side source of extra income that is mainly required at the time of emergency besides earning income from paddy and vegetable cultivations. There is 11.3% of migrants' household who buy paddy and homeland.

4.1.17 *Possessions of Agricultural Assets by the Migrants' Households in the Origin Areas*

Majority of the migrants' households in the origin area do not have any modern agricultural equipment. They have old traditional wooden plough, sickle and spade. The Fig 4.1 shows that only 6% of the migrants' households have huller machine and 8% have power tiller machine. This is because the machines are quite costly and the households are not able to afford to purchase it. Only the households whose monthly household gross income is above ₹ 20,000 which are mainly by the households who have one of its family members working as a employee in government jobs and by the households who have more than two migrants from the households. The possession of crop sprayer of the migrants' household is 66.9% which is mainly because crop sprayer is not very costlier and in some of the migrants' household they got the crop sprayer free from the government. The migrants' households who do not have modern agricultural equipments like tractor and power tiller they used hired tractor or power tiller to plough their cultivable land.

Fig: 4.1 Possessions of Agricultural Assets by the Migrants Households

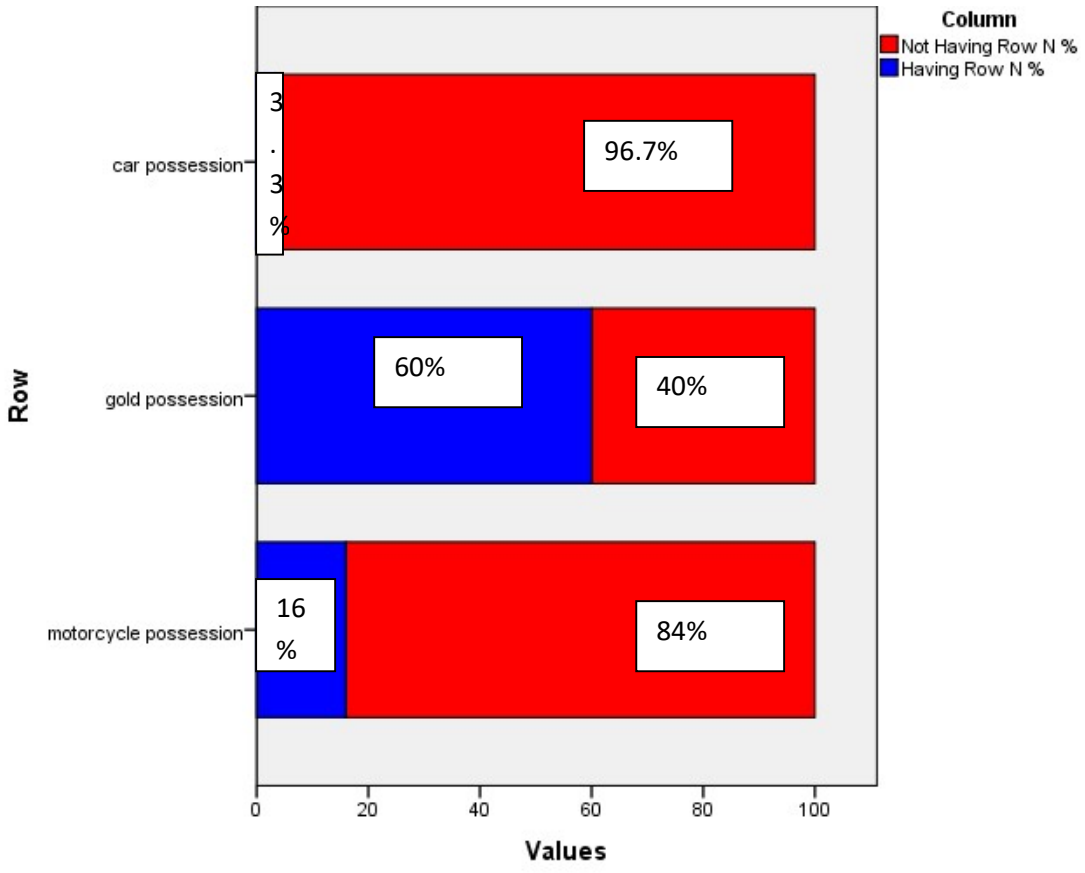


The migrants' households who are unable to used hired tractor or power tiller used the traditional wooden plough to plough their cultivable land with the help of bullocks.

4.1.18 *Possessions of Durable Assets by the Migrants' Households in the Origin*

Possession of durable assets by the household reflects about the economic condition of the household.

Fig: 4.2 Possessions of Durable Assets by the Migrants' Households



The possession of durable assets not only reflects about the economic background of the household but also help the household at the time of emergency to convert the durable assets in to liquidity. The Fig 4.2 shows about the possession of durable assets by the migrants' household in the origin. Possession of gold by the migrants' household is 60%. Gold can be easily convertible into liquidity for which the migrants' household keep it for their security and convert it into liquidity at the time of emergency. Beside this most of the married women of the migrants' household at time of their marriage they bring ornaments made of gold. The Possession of motorcycle is 16% and possession of car is only 3.3% by the migrants' household. The car and motorcycle are mainly possessed by those migrants' household who have government employee in the

household, more than two migrants from the household and by those households whose migrants monthly income is rupees 20,000 or above.

4.1.19 *Numbers of Migrants from the Household*

The number of migrants indicates the number of human capital that is totally available in the household.

Table: 4.17 Numbers of Migrants from the Household

Numbers of Migrants	Frequency	Percent
1-2 Migrants	136	90.7
More than 2 Migrants	14	9.3
Total	150	100.0

The households who have marginal size of land holding, less household income and have more number of labours in the household generally send the more number of labour persons from the household to the urban areas in order to increase the household income level. The Table 4.17 shows that 90.7% of the migrants' household sent at least 1-2 members from the household to work in the urban areas to increase the household income. In a household who have more than 5 members in the household and mostly by joint family that are capable of sending 2 or more migrants from their household. Due to increasing the number of population, increasing unemployment, decreasing landholding due to increase in the number of members at the household level, increasing disguised

unemployment and low agricultural income due to marginal size of agricultural cultivable land holding and crop loss due to flood mainly force the household member to look for either in non-farm jobs which is very less in rural areas and ultimately migrate to the urban areas.

4.1.20 *Age Group of the Migrants'*

Age group of the migrants mainly reflects about which age groups are more prone to migrate from the rural areas to the urban areas. Beside this age group of the migrants also reflects about the availability of what age group labour force left in the origin areas.

Table: 4.18 Age Group of the Migrants'

Age Group	Frequency	Percent
15-24	46	30.7
25-34	82	54.7
35-34	19	12.7
45-54	3	2.0
Total	150	100.0

From the Table 4.18 it is observed that majority 54.7% of the migrants in the study falls in the age group of 25-34 and second highest group is 30.7% which is in the age group of 15-24. Mainly young able-bodied are demanded more in the urban areas that's why rural young people mainly migrate after completing high school level and secondary level of education in search of jobs in the urban areas to raise the level of

household income, for their own better future and for a regular and stable source of income.

4.1.21 *Sex of the Migrants'*

Mainly the male member of the household migrates from the rural to the urban areas. In developing countries like India mainly the male member of the family take the responsibility of migration from the rural to the urban areas.

Table: 4.19 Sex of the Migrants'

Sex	Frequency	Percent
Male	143	95.3
Female	7	4.7
Total	150	100

From the Table 4.19 it is observed that majority (95.3%) of the migrants in the study areas were male migrants. The male members of the household mainly son and husband migrate to urban places of short and long distances in search of job, to increase household income and to reduce household risk burden. The female members are left with their children and some household with their old parents to take care of the farm activities, education of their children and household activities. Female migration is less in the study areas of the rural areas because female got marriage quite early. After crossing the age of 18 years old majority of the female in the rural areas got marriage.

4.1.22 *Migrants Monthly Income*

The monthly income of the migrants of the households in the study area mainly ranges from ₹ 5000 to 25000.

Table: 4.20 Migrants Monthly Income in the Destination

Monthly Income	Frequency	Percent
₹ 5000-10000	43	28.7
₹ 10000-15000	81	54.0
₹ 15000-20000	21	14.0
₹ 20000-25000	5	3.3
Total	150	100.0

The Table 4.20 shows that majority 54.0% of the migrants income is in the range of ₹ 10000-15000 and 28.7% of the migrants monthly income is in the range of ₹ 5000-10000 which reflects that majority of the migrants migrate to the urban areas in search of monthly income of ₹ 5000-15000 which is at least a stable source of income unlike the agricultural income which is low due to marginal size of land holding, seasonal and unstable due to crop loss damaged by flood. Majority of the migrants have education of high school level and higher secondary level therefore are not competent of high ranking jobs and high salaried jobs in the urban. Most of the migrants are unskilled. Monthly

income of ₹ 15000-20000 and from ₹ 20000-25000 are only 14% and 3.3% mostly by the migrants who have education level of degree level and are in higher position in company jobs than high school level migrants of company worker and mainly by businessman.

4.1.23 *Education Level of the Migrants*

The higher the education level higher is the probability of higher income and of high rank jobs than the low education category people.

Table: 4.21 Education Level of the Migrants'

Education level	Frequency	Percent
Upper Primary	4	2.7
High School	108	72.0
Higher Secondary	29	19.3
Degree Level	9	6.0
Total	150	100.0

The Table 4.21 shows that majority of the rural-urban migrants (72%) in the study areas mainly have education of high school level and 19.35% have higher secondary level of education. Only 6% of the migrants have degree level of education and upper primary level of education is also quite low which is only 2.7% which indicates that majority of the migrants after completing their high school and secondary level of education migrates

to the urban areas in search of jobs mainly due to lower the risk of the household and for their own better future and to increase household income. Due to marginal size of agricultural land holding of the migrants' household there arises the problem of scarcity of land. The land owned by them becomes insufficient to fulfill the food demand for the entire year of households who have more members. Most of the migrants do not do further study after high school level because most of the migrants very hardly pass high school level and many fails in class IX only and do not reach to class X. Besides seeing the migrants from the same villages earning well in the urban areas having only class IX and class X of education many young migrants are influence by them. Through communication of friends and relative from the same villages they got the information about the salary and types of skills and the about the working condition. Due to scarcity of land, unemployment, lack of alternative employment and low income from agriculture due marginal size of land holding and crop loss due to floods in the rural areas which ultimately push the rural youth out from the rural areas to the urban areas.

4.1.24 *Marital Status of the Migrants'*

Married migrants have more responsibility of handling his own family of the daily expenses of the household, expenses on education of their children for their better future and on health of the old parents whereas unmarried person have less burden and responsibility as compared to the married migrants.

Table: 4.22 Marital Status of Migrants'

Marital Status of Migrants'	Frequency	Percent
Married	86	57.3
Single	64	42.7
Total	150	100.0

The Table 4.22 shows that majority (57.3%) of the migrants are married. The low income from agriculture due to marginal size of land holding besides very less non-farm employment opportunities in the rural areas forces the household to send at least one of its family members to work in the urban areas in order to increase the household level of income and to reduce the household risk burden.

4.1.25 *Occupations of the Migrants'*

The occupations of the migrants are mainly seen of business, company worker, construction worker, driver, private security guard, workers in hotel, shop and shopping mall. The Table 4.23 shows majority of the migrants 38.7 % in the urban areas are engaged in private company as a worker mainly in car part making industry, bike parts making industry and in paper making and plywood industry mainly in the destination of Chennai, Bangalore and Kerala.

Table: 4.23 Occupations of the Migrants' in the Destination

Occupations	Frequency	Percent
Business	10	6.7
Company Worker	58	38.7
Construction Worker	12	8.0
Contact Worker	10	6.7
Driver	7	4.7
Private Security Guard	23	15.3
Self Employed	11	7.3
Worker in Hotel, Shop & Shopping Mall	19	12.7
Total	150	100.0

Another job where most of the migrants 15.3% are engaged is in private security guard jobs. In the third rank worker in hotel, shop & shopping mall 12.7% of the migrants are engaged. As majority of the migrants have education up to high school and higher secondary level who are unskilled so they are seeking such kind of jobs which required less skills and have at least a stable and permanent source of monthly income.

4.1.26 *Periods of Migration*

The greater the period of migration greater is the probability of sending more remittances back to the households in the origin areas by the migrants because it takes times for the migrants to settle in the new destination and his skills and experience of work increases as time passes.

Table: 4.24 Period of Migration in the Destination

Years of Migration	Frequency	Percent
1-2Years	22	14.7
3-4 Years	83	55.3
5 or More Years	45	30
Total	150	100.0

From the Table 4.24 it is observed that majority (55.3%) of the migrants' years of migration in the destination is 3-4 years. As the period of stay increases in the destination the migrants come to know about the new job opportunities where working condition and wages is comparatively better than their earlier working condition. Besides this working in the same industry or profession, the skills of the migrants' increases and some got promotion to higher ranking jobs. After settling in the destination the migrants told about the working condition, wage rate and staying condition to the rural people staying in the

origin areas when they visits home mainly to friends and relatives which influence them of becoming new migrants to the urban areas.

4.1.27 *Perceptions of Push Factors of Rural Out-Migration*

The push factors of migration mainly force the people to move out from their place of residence to other place. The push factors of rural out-migration of the study area mainly crop failure, poor housing condition, soil erosion, scarcity of agricultural land, unemployment, lack of alternative employment opportunities, increasing household burden and low income of the household. From the Table 4.25 it is observed that the highest percentage of reasons of push factors of rural out-migration in the study area is unemployment (84.7%) followed by crop failure (82%), lack of alternative employment opportunities (78%), low household income (77.3%), increase household or family burden (61.3%), scarcity of land (55.3%), poor housing condition (32%) and soil erosion (13.3%). There is seen to be variation in the perception of push factor of rural out-migration between the ST and Non-ST communities in the factors like poor housing condition and soil erosion. Unemployment is mainly due to increasing the number of members in the household and the increase in population growth as a whole in the state. Rate of unemployment mainly goes up due to lack of employment opportunities in the rural areas, increasing pressure on land due to increase in the size of family members of the household generation after generation which leads to rural out-migration.

Table: 4.25 Perceptions of Push Factors of Rural Out-Migration

Perception of Push Factors of Migration	Types of Community				Total (150)		χ^2 Test
	ST (75)		Non-ST (75)				
	N	%	N	%	N	%	
Crop Failure	63	84	60	80	123	82	χ^2=0.407, df= 1, p=0.524
Poor Housing Condition	48	64	0	0	48	32	χ^2=70.588, df=1, p=0.00
Soil Erosion	20	26.67	0	0	20	13.3	χ^2=23.077, df=1, p=0.00
Scarcity of Land	40	53.34	43	57.34	83	55.3	χ^2=.243, df=1, p=0.622
Unemployment	64	85.34	63	84	127	84.7	χ^2=0.51, df= 1, p=0.821
Lack of Alternative Employment Opportunities	60	80	57	76	117	78	χ^2=0.350, df= 1, p=0.544
Increasing Household or Family Burden	46	61.34	46	61.34	92	61.3	χ^2=0, df= 1, p=1
Low Household Income	59	78.67	57	76	116	77.3	χ^2=0.152, df= 1, p=0.697

Source: Author's Calculation

Crop failure is the second major reason of rural out-migration in the study area. It is observed from the state that there is no any significant difference between the ST and Non-ST communities in the perception of crop failure as a push factor of rural out-migration. Crop failure in the study area is mainly seen due to flood which occurs

continuously years after years, crop loss due damaged by the elephants and monkey coming from the nearby Jokai Rain Forest. Besides this most of the migrants' household agricultural lands in the origin were in the low lying area because of which the flood affecting the crop increases. As the people in the study area are mainly dependent on agriculture, they have no any alternative option rather than cultivating crops. Lack of alternative employment opportunities is in the rural areas is the third major reason of rural out-migration. There is very few alternative employment opportunities prevailing in the study area besides farming and very few rural people are only engaged in this activities like bamboo and cane product making, local liquor selling, small vendor shop, pickle making and handloom. Majority of the migrants' household in the study area are engaged in farming only. Low household income is the fourth major reason of rural out-migration. Due to marginal size of land holding mainly increasing family members in the household and lack of alternative employment opportunities mainly results in low household income. To support the family and maintains the increasing household expenditure on food and other items mainly the male members of households migrate to the urban areas in search of jobs. The increasing size of burden due to low income of the household, increasing expenditure due to newly born baby and expenditure of children on education, health expenditure on old age parents mainly increases the household risk burden. To reduce the risk burden of the household the male member mainly migrates to the urban areas in search of higher wage and regular income so that regular remittances could be sent to the households in the origin in order to reduce the household risk. Scarcity of land is the next push factors of rural out-migration. There is no any significant difference in the perception of scarcity as push factor of migration of between

the ST and Non-ST communities. Scarcity of land is mainly due to increasing the size of the family members and partition of land as the joint family goes for separation which further goes for separation generation after generation and the land holding decreases. Due to scarcity of land, lack of alternative employment opportunities and increasing population growth at the household and village level results in the increase in the unemployment rate. To support the family and for own settlement of jobs for future earning the rural people mainly pushes to migrate out from their place of residence to the urban areas in search of jobs. There is seen to be significant difference between ST and Non-ST communities in the perception of poor housing condition and soil erosion as push factors of rural out-migration. The poor housing condition and soil erosion is mainly seen in the study area of ST communities in the study area. This is mainly due to people residing near the river Buridehing, which every year affects both the house and the agricultural fields. Besides this living near to the Buridehing river every year, flood damage the houses and erodes the soil of the homeland areas of the houses who are just living besides the river and as result of which their homeland area decreases year after year.

4.1.28 *Perceptions of Pull Factors of Rural Out-Migration*

The pull factors of migration in the destination mainly attract the migrants to that place and are mainly urban places. The pull factors that attracts the rural people in the study area to migrate to the urban places includes higher wages, better income earning by the migrants from the same village, regular income, large number of industry, short distance, same language and culture, own settlement, better employment opportunities.

Table: 4.26 Perception of Pull factors of Migration

Perception of Pull Factors of Migration	Types of Community				Total (150)		χ^2 Test
	ST (75)		Non-ST (75)				
	N	%	N	%	N	%	
Higher Wage	71	94.67	69	92	140	93.3	χ^2=.429, df= 1, p=0.513
Better income earning by migrants from same village	63	84	52	69.34	115	76.7	χ^2=4.509 ,df=1 ,p=0.034
Regular Income	62	82.67	62	82.67	124	82.7	χ^2=0.00 ,df=1 ,p=1
Large Number of Industry	66	88	56	74.67	122	81.3	χ^2=4.391, df=1, p=0.036
Short Distance	20	26.67	51	68	71	47.3	χ^2=25.700, df= 1, p=0.00
Same Language and Culture	20	26.67	51	68	71	47.3	χ^2=25.700, df= 1, p=0.00
Own Settlement	32	42.67	31	41.34	63	42.0	χ^2=0.27 ,df= 1 ,p=0.869
Better Employment opportunities	63	84	57	76	120	80	χ^2=1.500 ,df= 1 ,p=0.221

Source: Author's Calculation

The Table 4.26 shows the main factors that attracts the rural people to migrate out from their place to the urban areas are higher wage (93.3%) followed by regular income (82.7%), large number of industry (81.3%), better employment opportunities (80%), better income earning by migrants from the same villages (76.7%), short distance (47.3%), same language and culture (47.3%), own settlement (42%). Higher wages

mainly attracts the rural areas people to migrate to the urban areas because the income they earned from agriculture is seasonal and quite low as compared to the non-farm employment in the urban areas. Besides the crop loss damaged by flood and wild animals like elephants reduced the income of the household further more leading to increase household risk burden and low availability of food. Therefore in order to reduce the risk burden, the people in the study area migrate out from their places in search of higher wages and regular income. Better income earning by the migrants from the same village is another factor that mainly attracts the rural people to migrate out from their places to the urban areas where migrants from the same village are earning well. It is observed from the Table 4.26 that there is significant difference in the perception of better income earning by the migrants from the same villages, large number of industry, short distance and same language and culture as a factors of rural out-migration to the destination which is mainly urban area as a pull factors of migration between the ST and Non-ST communities. The variation is mainly seen because in the study area ST migrants are migrating to long distance mainly from one state to another mainly in the states like Tamil Nadu, Karnataka, and Kerala. Whereas the Non-ST communities in the study area it is observed that they mainly migrate to short distance from one district to another within the state. The ST migrants in the urban destination of other states communicate with their friend and relatives about the working condition, staying facilities and wages through mobile phone communication and also when the migrants come back during the vacation period in the origin. Because of information passing from known person the new migrants from the village migrate to that place with his friends and relatives who is already staying and working in the urban destination. Besides the contractors when ever

required new labour contacts with the migrants who are already working under him to arrange for more labour from his villages for that for every migrants the contractor provides commission. The Non-ST migrants in the study area mainly migrate to short distance in search of work. The influence of friends, relatives and family members working in long distance mainly in other states of India is not very much prevalence in the study area of the Non-ST communities. Beside this there is very less number of migrants from the Non-ST communities villages of the study areas because of which the demonstration effect of migration is very less and as a result there is less number of long distance rural out-migration. The short distance also has advantages of coming to their home in the origin during the time of emergency, can send remittances by friends, relatives and by migrants' themselves. Beside this migration within the state also has the advantage of communication which has the same language and culture.

4.1.29 *Place of Destinations of Rural Out-Migration*

Place of destination is the place where the rural out-migrants are mainly attracted to migrate which are mainly the urban places where there are better job opportunities available, higher wages, better amenities and higher wages. In the study area the place of destination mainly choosed by the rural out-migrants are both intra-state and inter-state. From the Table 4.27 it is observed that the inter-state destinations choosed by the rural out-migrants are mainly Chennai (20.7%), Bangalore (18%) and Kerala (12%). Whereas the intra-state destinations mainly choosed by the rural out-migrants' are Guwahati (18.7 %), Dibrugarh Town (12%), Digboi (10%) and Namrup (8%). In Chennai majority of the rural out-migrants in the destination are engaged in jobs of automobile parts making company and very few in man power supplier to different factory of manufacturing units.

Chennai mainly attracts migrants from different states because there is large number of automobile manufacturing units of various automobile companies in Chennai. The local labour is not enough for the manufacturing units and beside this the local labour demand more wages and they do not work extra labour hours for which contractors mainly demand for migrants labour. Majority of the migrants labour working in manufacturing units in Chennai are from North-East only and mainly from Assam. The rural worker coming to urban areas mainly preferred to do jobs in the service sectors because of less hours of work and it provide employees' provident fund, employee's state insurance, canteen facility and other facilities which are very less provided by jobs in manufacturing and construction sectors (Jeyaranjan, 2017). In Bangalore the migrants are mainly engaged in jobs like Security guard, driver, delivery boy, construction worker, automobile parts making factory and man power supplier. Kerala mainly attracts migrants from different states mainly by the plywood industry. The local labour are mainly demanding more wages and most of the local labour migrate to the West Asian countries where wage is higher than the local wage. Majority of the migrants worker from the study area are engaged in paper and plywood industry and very few in coke industry. The migrants labour engaged in plywood industry from Assam have more number of dependents than migrants from other states and majority of them comes from Dibrugarh district. Because of shut down of plywood industry in Assam and the growing up of plywood industry in Kerala mainly attracts the workers who are working in the shutdown plywood industry in Assam (Peter & Gupta, 2012).

Table: 4.27 Place of Destinations of Rural Out-Migrants'

Place of Destinations	Frequency	Percent
Bangalore	27	18.0
Chennai	31	20.7
Dibrugarh	19	12.7
Digboi	15	10.0
Guwahati	28	18.7
Kerala	18	12.0
Namrup	12	8.0
Total	150	100.0

Guwahati city is the most developed city in the Assam and among the North-Eastern states. Beside this city is also large and provides various opportunities of jobs to different background of people. In Guwahati city the migrants' worker from the study area are mainly engaged in jobs like business, driver, mechanic, construction worker, welder, carpenter, worker in hotels, shops and showrooms. Due to develop transportation it is easier for the migrants to travel. In case of Digboi the migrants are mainly attracted to migrate due to the contacts jobs in the oil refinery mainly of cleaning the machinery units and of security guard of various industrial units, godowns, store room of various industry and showrooms. In Namrup majority of the migrants' workers are engaged as a home guard and few in driver of companies.

CHAPTER: 5

IMPACT OF RURAL OUT-MIGRATION ON AGRICULTURE

5.1 Factors of Agricultural Performance of the Migrants' Households in the Area of Origin

To see the impact of agricultural performance due to number of migrants, migrants' education level, income of the migrants', net sown area, remittance amount send, years of migration and marital status of migrants' binary logistic regression model is used.

Table: 5.1.1 Omnibus Tests of Model Coefficients of Enter Method

Enter Method			
Step 1		**Chi-square**	**Sig.**
	Step	**35.960**	**.000**
	Block	**35.960**	**.000**
	Model	**35.960**	**.000**

Table: 5.1.2 Omnibus Tests of Model Coefficients of Forward Stepwise Conditional Method

Forward Stepwise Conditional Method			
		Chi-square	**Sig.**
Step 1	**Step**	**19.993**	**.000**
	Block	**19.993**	**.000**
	Model	**19.993**	**.000**
Step 2	**Step**	**13.432**	**.000**
	Block	**33.425**	**.000**
	Model	**33.425**	**.000**

Table: 5.1.3 Omnibus Tests of Model Coefficients of Forward Stepwise Likelihood Method

Forward Stepwise Likelihood Method			
		Chi-square	**Sig.**
Step 1	**Step**	**19.993**	**.000**
	Block	**19.993**	**.000**
	Model	**19.993**	**.000**
Step 2	**Step**	**13.432**	**.000**
	Block	**33.425**	**.000**
	Model	**33.425**	**.000**

Three alternative methods have been used to check the good fit of the model. To test the overall model coefficients are significant omnibus test is run. By doing the omnibus test that at least there is one variable whose coefficient is different from zero (H0: The coefficients of all variables are zero; H1: At least one coefficient variable is different from zero**).** In all the three methods the overall model coefficients are significant. The model fitting the data is tested by Hosmer test where H_0: The model fits the data.

Table: 5.2.1 Omnibus Tests of Model Coefficients with Variables of Enter Method

Enter Method			
Step 1	Var	B	Sig
	c	-24.049	.998
	migno	15.532	.999
	migedu	.309	.315
	income	.000	.987
	nsa	.976	.008
	rem	.12	.144
	yearsofmig	.377	.268
	martial	.214	.830
	Hosmer and Lemeshow Test: Chi-Sq (9.072); p (0.0336)		
	Nagelkerke R Square (.461)		

Table: 5.2.2 Omnibus Tests of Model Coefficients with Variables Forward Stepwise Conditional Method

Forward Stepwise Conditional Method			
	Var	B	Sig
	c	-1.583	0.094
	rem	0.15	0.000
	c	-4.216	.002
	nsa	1.085	.003
	rem	.15	.002
Step 1	Hosmer and Lemeshow Test: ChiSquare (6.650); p (0.575) Nagelkerke R square (.270)		
Step 2	Hosmer and Lemeshow Test: Chi-Sq (6.332) p (0.610) Nagelkerke R Square: (.432)		

Table: 5.2.3 Omnibus Tests of Model Coefficients with Variables Forward Stepwise Likelihood Method

Forward Stepwise Likelihood Method			
	Var	B	Sig
	c	-1.583	0.094
	nsa	1.085	0.003
	rem	0.21	0.000
	c	-4.216	0.002
	rem	0.17	0.002
Step 1	Hosmer and Lemeshow Test: Chi-sq: (6.650); p (0.575) Nagelkerke R Square (.270)		
Step 2	Hosmer and Lemeshow Test: Chi-Sq (6.332) p (.610) Nagelkerke R Square (.432)		

In the Table 5.2.1, 5.2.2 and 5.2.3 the variables migno; number of migrants from the household; migedu: years of education of the migrants'; income: monthly income of the migrants'; nsa: net sown area; rem: amount of remittances send by the migrants'; yearsofmig: years of migration; marital: marital status of the migrants' and c: constant. On the basis of omnibus test the model considered all the variables in the first method (due to enter method). In the second method (forward stepwise conditional method) two alternative models is considered, in the first Step 1 model considered remittances as a significant variable that affects agricultural performance and the model itself drop all the other variables and in the second Step 2 model it considered net sown area and remittances as a significant variable that affects agricultural performance and the model drop the other variables itself. In the third method (forward stepwise likelihood method) two alternative model is considered, in the first Step 1 model net sown area and remittance are considered as a significant variable that affects agricultural performance and in the Step 2 model it considered only remittances as a significant variable that affects agricultural performance and the model itself drop all the other variables. The model fitting the data is tested by the Hosmer and Lemeshow test in which H_0= model fits the data. In the enter method χ^2=9.072, p (.336) > 0.05 and hence the null is accepted i.e. the model fits the data. In the forward stepwise conditional methods in the first Step 1 model χ^2=6.650, p (.575) > 0.05 and in the second Step 2 model χ^2=6.332, p (.610) > 0.05 and hence in both the model the null is accepted i.e. the model fits the data but compared to first model the probability value is more in the second model. In the forward stepwise likelihood method, in the first Step 1 model χ^2=6.650, p (.575) > 0.05 and in the second Step 2 model χ^2=6.332, p (.610) > 0.05 and hence in both the model null hypothesis is

accepted i.e. the model fits the data but compared to first model the probability value is more in the second model. The power of explanatory variable explaining the dependent variable is tested by Nagelkerke R Square in which value from 0.2-0.4 is highly satisfactory. In the enter method the Nagelkerke R Square value is 0.461 which is highly satisfactory. In the forward stepwise conditional methods the in the first Step 1 model the Nagelkerke R Square value is 0.270 and in the second Step 2 model the Nagelkerke R Square value is 0.432 which is more highly satisfactory as compared to the first model. In the forward stepwise likelihood method in the first Step 1 model the Nagelkerke R Square value is 0.270 and in the second Step 2 model the Nagelkerke R Square value is 0.432 which is more highly satisfactory as compared to the first model. From all three alternative methods, forward stepwise conditional methods is choosed and from the forward stepwise conditional methods the second model is choosed because in this model the probability value, Nagelkerke R square value and the explanatory variable which are significant in affecting agricultural performance is more as compare to the other models in the three alternative methods. Hence, net sown area and amount of remittance are statistically significant for influencing the positive impact on agriculture. Higher agricultural sown area has important implication for the migrants' household. The migrants' households who have more than one family member migrating from the rural to the urban areas and migrants whose monthly income is more than rupees 15000 per month were able send more remittances back to the households in the origin which helps the migrants household to purchased new land for cultivation purpose. Those who do not have more land to cultivate, they take leased land so that the remittances send by the migrants is invested more on agricultural production purpose.

5.2 Impact of Rural Out-Migration on Agricultural Performance

The impact of rural out-migration in the study area on the agricultural performance is mainly seen in terms of labour availability, change in agricultural cultivable land, change in livestock holding and farm income.

Table: 5.3 Paired t-Analysis

Items	Pre Migration (Mean Value)	Post Migration (Mean Value)	t-Value (p-Value)
Area Cultivated	2.8900	3.1500	5.424 (0.000)
Labour Availability	3.9400	2.8400	-41.770 (0.000)
Value of Paddy Cultivated	20650.9333	25213.6667	3.891 (0.000)
Vegetables Cultivated Value	1158.3333	1238.6667	3.756(0.000)
Livestock Value	20970.2667	26989.6000	12.409 (0.000)
Tea Value	466.6667	3383.3333	5.459 (0.000)
Farm Income	33707.1333	44764.7333	8.722 (0.000)

Source: Author's Calculation

5.2.1 *Area Cultivated*

From the Table 5.3 it is observed that the area of cultivation of the migrants' household increase after migration of family member from the households. The mean value of cultivated area before migration of family members from the household was 2.8900 bigha which increased to 3.1500 bigha after migration of family from the

household. The t-value (5.424) also shows positive difference between after and before migration period. The mean value of the cultivated area increased after migration of family member from the household because of hiring leased-in land and purchasing of new land. The remittance send by the migrants back home in the origin helps in hiring leased-in land for cultivation purpose mainly for the migrants household who have more family members and less number of cultivated area to fulfill the food demand of the household for the entire year. The purchasing of new land is purchased by the part of saving income comes from agriculture activities, household non-farm income and the remittances send by the migrants. The purchasing of new land and hiring of new land because of shortage of land for cultivation purpose and low lying agricultural fields is mainly purchased by the migrants households who have more than one number of migrants from the household, having migrants monthly income of above 15000 and having one government employee in the migrants household. The increased in cultivated area is mainly used for paddy cultivation, vegetables cultivation and tea plantation.

5.2.2 *Labour Availability*

For the cultivation purpose in the rural areas it is mostly the labour from the household itself who are used for the cultivation purposes. From the Table 5.3 it is observed that the mean value of labour availability which was 3.9400 before migration of family member from the household decreased to 2.8400 after migration of family member from the household. The t-value also shows a negative difference of after and before migration period of labour availability in the migrants' household which is mainly because of migration of family from the household to urban areas. There is mainly more shortage of labour by the migrants' household who have only two labour in the household

for cultivation purpose before migration and after migration of one of its family labour from the household there is only availability of one labour in the household for cultivation and other household activities. In the study area, it is mainly the male member of the household who migrate to the urban area in search of jobs to support the household in maintain day to day expenditure of the household, for education of their children and for better of the migrants himself and for their family as a whole. The wife of the migrants are left behind in the origin with their children and some with their old parents to maintain the day to day household activities, education of their children, old parents and farm activities. The remittances send by the migrants helps in hiring of labour and tractors for agricultural purposes. Beside this there is exchange of labour to labour system mainly prevalent among the ST communities than Non-ST communities in the study areas. The neighbor helps each other in planting and harvesting of agricultural crops of each other in which no monetary wage are paid and only labour to labour are exchanged.

5.2.3 *Paddy Cultivated Value*

In the study the households are mainly cultivating paddy of Sali and Ahu crops. The households are mainly relied on paddy cultivation for fulfilling their food demand and as a source of income. From the Table 5.3 it is observed that the mean value for the paddy cultivated value increased from ₹ 20650.9333 before migration of family member from the household to ₹ 25213.0667 after migration of family member from the household. The t-value (3.891) also shows positive difference between before and after migration period. The p value (0.000) also shows that there is a significant difference between before and after migration of the cultivated value of the paddy crop because of increased in the cultivated area. The remittances send by the migrants helps in increasing

the cultivated area either by hiring leased-in land or purchasing of new land. The shortage of agricultural land, low production, crop loss due to flood and animal attacks, more family member in the household increased the household risk burden forces the household members in search of non-farm jobs in the urban areas. The purchasing of new land is mainly seen in the migrants' household whose family member have migrated for more than 3 years, having monthly income of more than ₹ 15000 and of households having one family member in the government jobs.

5.2.4 *Vegetable Cultivated Value*

The vegetables mainly grown in the study areas are potato, cauliflower, broccoli, cabbage, tomato, pea, brinjal, carrot, bitter gourd, bottle gourd, pumpkin and sweet potato. From the Table 5.3 it is observed that the mean value for the cultivated value of vegetable increased from ₹ 1155.3333 before migration period to ₹ 1238.6667 after migration of labour of member from the household. The t-value (3.756) also shows a positive difference between the two period of migration. The remittances send by the migrants to the household in the origin not only helps in financing day to day expenditure of the household but also helps in growing vegetables which are mainly good source of income. Through the remittances, the migrants' households are able to buy high yielding variety of vegetable seeds, fertilizer and pesticides. The vegetables are yield within a short span of time compare to paddy cultivation. Besides this, vegetables can be grown within a small plot of cultivable land which is easier to maintain. The local produce vegetables are more demanded in the market and have better prices. The market nearest to the study area is Barbaruah market and the Dibrugarh town market where the vegetables produce by the migrants households are sold easily. Mainly the migrants'

households sold their vegetables produce in Sunday market of the week either in Barbaruah market, Dibrugarh town market or sell it to middle man who collects the vegetables produce by the migrants' household from their houses or cultivated areas.

5.2.5 *Livestock Value*

In the study area all the migrant's households rear animals and fowls for their earning. From the Table 5.3 it is observed that the mean value of the livestock possessed by the migrants' household increases from ₹ 20970.2667 before migration to ₹ 26989.6000 after migration. The remittances send by the migrants helps the household in purchasing livestock animals. The main animals and fowls reared by the migrants household are cows, buffalo, duck, chicken, goats, pigs and ox. In majority of the migrants' households of ST communities pig are the most reared animals because of its higher price value compared to other animals reared by the households. Pig is more demanded in the ST communities because in rituals and ceremonial activities of the household pig is required besides other animals like chicken and fish. Because of this every households rear at least one or two pigs. Buying of pigs from the market for rituals and ceremonial activities by the poor migrants household it is costlier for them because of which they rear piglets which has low price. Beside this pigs is easily sold in the market and good amount of income can be earned from it because of its higher price. Goats rearing are quite low in the ST communities as compared to the rearing of animals like cows, pigs, ox, chicken and ducks. They are reared for commercial purposes. The livestock helps the migrants' households in earning a good amount of earning besides income earning from paddy and vegetable cultivation. For feeding the livestock the

migrants' households do not buy any fodder from the market they give locally homemade fodder of the dried paddy plants, rice husk and wastage of vegetables and food items.

5.2.6 *Tea Cultivated Value*

The people in the study are starting tea plantation as a side source of income other than paddy, livestock and vegetable cultivation. The migrants' households are mainly influence by the small tea growers in their village who make a good amount of profit from a small amount of land. Some of the migrants' households are converting their kitchen garden into tea plantation garden while some are purchasing new land and converting them into tea plantation garden. As majority of the migrants households in the study area have marginal size of land holding and of low lying agricultural land because of which there is frequent damages of their paddy crop by floods every year. Due to lack of non-farm employment opportunities in the rural areas the households in the rural areas have no any option rather than to do agricultural activities or to migrate to towns in search of non-farm jobs and higher income. The damage of their crop by floods and wilds animals led to food scarcity and the income from tea cultivation along with the remittances money send by the migrants helps the migrants' households in fulfilling the food demand and other expenditure of the households at the time of emergency. Most of the migrants' households have 0.5-1 bigha of tea garden and earn ₹ 17500-35000 yearly. The migrants' households do not hire labour for plucking green leaf, spraying and other activities in the tea garden. All the works are done by the family labour only. Beside this the tea growers of the migrants' household do not have any proper training of tea cultivation. From the Table 5.3 it is observed that the mean value of the tea crops rises from ₹ 466.667 before migration to ₹ 3383.3333 after migration of family member from

the households. The t-value (5.459) also shows a positive difference between the two period of migration.

5.2.7 *Farm Income*

The farm income of the migrants' household mainly increases after migration of family member from the households to the urban areas. From the Table 5.3 it is observed that the mean value of farm income of the migrants' households before migration of family member was ₹ 33707.13333 increased to ₹ 44764.7333. The t-value (8.722) also shows a positive difference between after and before migration period of family member from the households. The farm income of the migrants' households mainly increased due to increased in agricultural cultivable land, increased in livestock numbers, increased in vegetable production and tea land garden. The new holding of tea land by the migrants households started recently in the last 3-5 years. The remittances send by the migrants along with households earning from agricultural activities helps the households in purchasing new land, increasing the number of livestock and helps the households in increasing their farm incomes.

5.3 Rural Out-Migration Affects Agricultural Performance

Rural out-migration affects the agricultural performance in the area of origin both positively and negatively. The Table 5.4 shows that rural out-migration affects the agricultural performance in the rural areas of the origin. The chi-square value (χ^2=1.26, df=1, p=0.262) does not show any significant difference between the two communities. Rural out-migration in the origin areas negatively affects agricultural performance by creating shortage of labour for agricultural activities and positively affects agricultural

performance through remittances send by the migrants which helps the migrants' household in hiring labour, tractors, seeds, fertilizer, hiring leased-in land and purchasing new land for agricultural purpose.

Table: 5.4 Rural Out-Migration Affects Agricultural Performance

Rural Out-Migration Affects Agricultural Performance	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Yes	70	93.3	66	88	136	90.7
No	5	6.7	9	12	14	9.3
Total	75	100	75	100	150	100

χ^2=1.26, df=1, p=0.262 Source: Authors Calculation

5.4 Rural Out-Migration Creates Labour Shortage

The migration of family members from the household mainly reduces the labour availability in the household after migration. The Table 5.5 shows the rural out-migration creates labour shortage in the areas of origin. The chi-square value (χ^2=.545, df=1, p=0.460) does not show any significant difference between the two communities. The rural out-migration affects the rural economy by creating shortage of labour for farming purposes. Due to migration of labour from rural to urban areas in most of the migrants' household only the aged parents and spouse are left in the origin to do agricultural and other household activities creating shortage of labour.

Table: 5.5 Rural Out-Migration Creates Labour Shortage

Labour Shortage	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Yes	57	76	53	70.7	110	73.3
No	18	24	22	29.3	40	26.7
Total	75	100	75	100	150	100

χ^2=.545, df=1, p=0.460 Source: Authors Calculation

The shortage of labour is filled up by the migrants' households by hiring labour. In case of ST communities hiring of labour is less seen. In ST communities labour for labour are exchange in which neighbours helps each other households in doing agricultural activities. The remittances sent by the migrants helps the migrants household in hiring tractor and labour. The chi-square value (χ^2=.545, df=1, p=0.460) does not show any significant difference in ST and Non-ST communities of shortage of labour.

5.5 Changes in Methods of Production

Rural out-migration creates shortage of labour for doing agricultural activities for which more time is required for doing agricultural activities. And it affects more to the households who have small size of family. The Table 5.6 shows the change in the method of production after migration of labour from the households which reduce human capital in the households for agricultural activities. The households adopt strategy like using tractor, hired labour and the helps of neighbors and relative to do agricultural activities.

Table: 5.6 Changes in Method of Production

Changes in Method of Production	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Yes	52	69.3	49	65.3	101	67.3
No	23	30.7	26	34.7	49	32.7
Total	75	100	75	100	150	100

χ^2=.273, df=1, p=0.601 Source: Authors Calculation

The remittances send by the migrants helps the migrants' household to adopt such strategy. The chi-square value (χ^2=.273, df=1, p=0.601) also does not show any significant difference between the ST and Non-ST communities. In both the communities due to shortage of labour as a result of rural out-migration, the migrants' household mainly used hired labour for the agricultural activities. In case of ST communities the exchange of labour for labour are mainly seen. The neighbor household members works in each other agricultural field for planting and harvesting each other crops in which no monetary wage are paid and only labour for labour are exchanged. The exchange of labour for labour is less observed in the Non-ST communities.

5.6 Changes in Cultivated Area

Greater is the cultivated areas of the household greater are the capability of producing more crops. Majority of the migrants' household in the origin areas have marginal size of cultivable agricultural land. Majority of the migrants' household in the origin there is no any change in the cultivated area. The increase or decrease of cultivated

area in the study area is very little. But there is significant difference between the ST and Non-ST communities in the changes in cultivate area. From the Table 5.7 it is observed that the chi-square value (χ^2=6.780, df=2, p=0.034) shows significant difference between the two communities in the changes in cultivated area. The increase in cultivated area is mainly due to increase in purchase of new cultivable land and hiring of leased-in land for cultivation purpose. The decrease in cultivable area which is observed in the Non-ST communities is mainly due to decline in the number of family member from the household to do agricultural activities and as the family member decreases the food demand also reduces because of which less crop is cultivated. The decrease in cultivable area is mainly seen in those households who have less number of family members in the household and more number of cultivable land.

Table: 5.7 Changes in Cultivated area of the Migrants' Households in Origin

Changes in Cultivated Area	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
No Change	54	72	42	56	96	64
Increase	21	28	29	38.7	50	33.3
Decrease	0	0	4	5.3	4	2.7
Total	75	100	75	100	150	100

χ^2=6.780, df=2, p=0.034 Source: Authors Calculation

There is seen to be greater percentage of increase in cultivable land of Non-ST communities as compared to the ST communities. The increase in land for cultivation

purpose of Non-ST communities is mainly seen of increase in land that are used for tea garden plantation. As majority of the ST migrants' household area are in low lying areas and the tea plantation requires land of high altitude as compared to paddy cultivation. Beside this the tea garden are mainly planted by the migrants' household proximity to the households area because of there is seen to less number of increment of cultivable land of the ST communities as compared to Non-ST communities in the study area.

5.7 Changes in Farm Income

The migrants' household in the area of origin mainly depends on farming for their livelihood.

Table: 5.8 Changes in Farm Income

Changes in Farm Income	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Increase	71	94.7	68	90.7	139	92.7
constant	1	1.3	0	0	1	0.7
Decrease	3	4	7	9.3	10	6.6
Total	75	100	75	100	150	100

χ^2=2.665, df=2, p=.264 Source: Authors Calculation

From the Table 5.8 it is observed that majority of the household in both the ST and Non-ST communities the farm income increase. The Chi-square value (χ^2=2.665, df=2, p=.264) however does not show any significant difference between the two

communities. After migration of family members who are doing earlier agricultural and other household activities from the household the availability of labour in the household decreases. But the remittances send by migrants back to households in the origin areas helps the household in purchasing livestock, hiring tractors, hiring labour, buying new land and hiring leased-in land to do agricultural activities which helps the household in increasing their farm income and household income as a whole

5.8 Changes in Paddy Productivity

The migrants in the study areas mainly cultivated paddy (ahu and sali) for their own self consumption and for earning purposes. They migrants' household mainly sell the paddy crops whenever they are in need of cash money.

Table: 5.9 Changes in Paddy Productivity

Changes in Paddy Productivity	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Increase	15	20	15	20	30	20
Constant	59	78.7	56	74.7	115	76.7
Decrease	1	1.3	4	5.3	5	3.3
Total	75	100	75	100	150	100

χ^2=1.878, df=2, p=0.391 Source: Authors Calculation

From the Table 5.9 it is observed that (χ^2=1.878, df=2, p=0.391) there is no any significant difference between the two communities in the change in paddy productivity.

Majority of the migrants of both the communities there is no any change in productivity of paddy crop. The increase in paddy productivity in both the communities is very low and the increase in productivity of paddy crop is mainly due to increased in the cultivated area of the paddy crop by hiring leased-in land and purchasing of new land by the migrants' household in the origin.

5.9 Adaptation of Tea Plantation

The adaptation of tea plantation by the migrants' household is mainly adopted as a side source of security money besides income earnings from paddy cultivation and livestock rearing. The crop loss due to damaged by flood and wild animals like elephants mainly affects the household income and also food availability. Because of which the households mainly started to do tea plantation as side source of income which helps the households at the time of emergency.

Table: 5.10 Adaptation of Tea Plantation by Migrants' Households in Origin

Tea Garden Plantation as a side Income	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
Yes	8	10.7	17	22.7	25	16.7
No	67	89.3	58	77.3	125	83.3
Total	75	100	75	100	150	100

χ^2=3.88, df=1, p=0.049 Source: Authors Calculation

From the Table 5.10 it is observed that there is significant difference between the ST and Non-ST communities in the change in the productivity of tea land. The Non-ST Communities are planting more tea garden because the Non-ST villages have more suitable land available in the village for tea cultivation. Mainly the tea gardens are planted in the area close from the migrants' households. The proximity to tea plantation garden mainly prefer by the migrants' household because it is easier for the household in the maintenance of tea garden. Because of small area of tea plantation (0.5-1 bigha) garden majority of the migrants' household do not use any hired labour for any activities in the tea garden. Family labour is enough to maintain the tea garden. On the other hand, majority of the ST migrants' household area are in low lying area because of which flood affected their household area every year. As majority of the migrants households are in low lying areas and the area available to do any activities close to the households area are also in the low lying areas because of which tea plantation is not suitable for the ST migrants' household. As a result of which there is seen to be significant (χ^2=4.160, df=1, p=0.41) difference between the two communities in adapting tea garden plantation.

5.10 Changes in Vegetable Production Value

The migrants' household in the origin mainly produces vegetables for their own self consumption and for commercial purpose. The vegetables mainly grown in the study areas are potato, cauliflower, broccoli, cabbage, tomato, pea, brinjal, carrot, bitter gourd, bottle gourd, pumpkin and sweet potato. Majority of the migrants' households in the study area the value of vegetable production increases mainly due to the capability of buying high yielding vegetables seeds, fertilizers and pesticides with the help remittances send by the migrants' to the household in the origin. Some of the migrants' households

also hired leased-in land for vegetable cultivation that are mainly produced for commercial purposes.

Table: 5.11 Changes in Vegetable Production Value

Changes in Vegetables Production Value	Types of Community				Total (150)	
	ST (75)		Non-ST (75)			
	Frequency	%	Frequency	%	Frequency	%
No Change	10	13.3	7	9.3	17	11.3
Increase	39	52	46	61.3	85	56.7
Decrease	26	34.7	22	29.4	48	32
Total	75	100	75	100	150	100

χ^2=1.434, df=2, p=0.487 Source: Authors Calculation

The high yielding seeds for paddy crop are not purchased by the migrants' household, only vegetable crops seeds are purchased. The reason is that vegetables crops can be yielded within a short span of time and small amount of land as compared to paddy cultivation. Besides this it is easier for the household to maintain the vegetables garden because of its small areas of cultivation. From the Table 5.11 it is observed that the chi-square value (χ^2=1.434, df=2, p=0.487) does not show any significant difference between the ST and Non-ST communities in the change in the production value of vegetables crops.

Chapter: 6

Impact of Remittances on the Migrants' Household Activities in the Study Area

6.1 Remittances-Expenditure of the Migrants' Households

In order to evaluate the impact of the remittances of the migrants' household in the origin on the share of expenditure on food items, health expenditure, housing expenditure, education and consumer goods the following technique have been adopted. Working-Leser approach (Working, 1943; Leser, 1963) is applied in the present study to evaluate the impact of remittances on the expenditure pattern of the migrants' household. The Working-Leser approach describes the household share of budget linear to the logarithm of total expenditure of the household which is form as:

$$w_{ij} = \alpha_j + \beta_j \ln(X_i) + \varepsilon_{ij} \quad \text{.....(6.1)}$$

Where w_{ij} is the budget share of household expenditure on good j in household i (i.e ratio of expenditure on good j to the household total expenditure in household i), $\ln(X_i)$ is logarithm of household total expenditure, α_j and $\beta_j$are the parameters and ε_{ij} is the error term. Deaton (1997) have further extended the above equation 6.1 to incorporate some other factors which affects the expenditure of the household budget allocation on various items.

The remittance-expenditure model in the present study is expressed as:

$$w_{ij} = \alpha_j + \beta_{1j} \ln(X_i) + \beta_{2j} Z_i + \beta_{3j} R_i + u_{ij} \quad \text{.....(6.2)}$$

Where Z_i is a vector of the characteristics of the migrants household i, R_i is the amount of remittances received per annum by the household and u_{ij} is the error term.

Since, some of the households have zero education expenditure which is mainly due to non-availability of children in the household, having child below 5 years and due to school dropout. Probit regression is applied for education expenditure as a dependent variable. Then the Inverse-Mills ratio cdf/pdf was calculated for education expenditure and is added in equation (6.2) to avoid biased estimation.

$$w_{ij} = \alpha_j + \beta_{1j} \ln(X_i) + \beta_{2j} Z_i + \beta_{3j} R_i + \beta_{4i} IMR_j + u_{ij} \quad \text{....(6.3)}$$

Where IMR_j is the Inverse-Mills ratio of educational expenditure = - $\frac{\emptyset(K_j)}{\Phi(K_j)}$ in which $\emptyset(K_j)$ is the normal density function, $^{\Phi}(K_j)$ is the normal distribution function and K_j is vector containing X_i,, Z_i and R_i.

The equation (6.3) has been further elaborate in the following manner:

$$w_{ij} = \alpha_j + \beta_{1j}\text{ltotalexp}_i + \beta_{2j}\text{noofmigrants}_i + \beta_{3j}\text{remittances}_i + \beta_{4j}\text{litperson}_i + \beta_{5j}\text{Incomecatenum}_i + \beta_{6j}\text{famsizenum}_i + \beta_{7j}\text{childrennum}_i + +\beta_{9j}\text{oldperson}\sim\text{m}_i + \beta_{8j} IMR_j + u_{ij} \quad \text{..... (6.4)}$$

$$\text{fdshare}_i = \alpha_j + \beta_{1j}\text{ltotalexp}_i + \beta_{2j}\text{noofmigrants}_i + \beta_{3j}\text{remittances}_i + \beta_{4j}\text{litperson}_i + \beta_{5j}\text{Incomecatenum}_i + \beta_{6j}\text{famsizenum}_i + \beta_{7j}\text{childrennum}_i + u_{ij} \quad \text{..... (6.5)}$$

$$\text{edushare}_i = \alpha_j + \beta_{1j}\text{ltotalexp}_i + \beta_{2j}\text{noofmigrants}_i + \beta_{3j}\text{remittances}_i + \beta_{4j}\text{litperson}_i + \beta_{5j}\text{Incomecatenum}_i + \beta_{6j}\text{famsizenum}_i + \beta_{7j}\text{childrennum}_i + \beta_{8j}IMR_j + u_{ij} \quad \ldots\ldots (6.6)$$

$$\text{hshare}_i = \alpha_j + \beta_{1j}\text{ltotalexp}_i + \beta_{2j}\text{noofmigrants}_i + \beta_{3j}\text{remittances}_i + \beta_{4j}\text{litperson}_i + \beta_{5j}\text{Incomecatenum}_i + \beta_{6j}\text{famsizenum}_i + \beta_{7j}\text{childrennum}_i + \beta_{8j}\text{oldperson}\sim\text{m}_i + u_{ij} \quad \ldots\ldots\ldots (6.7)$$

$$\text{houseshare}_i = \alpha_j + \beta_{1j}\text{ltotalexp}_i + \beta_{2j}\text{noofmigrants}_i + \beta_{3j}\text{remittances}_i + \beta_{4j}\text{litperson}_i + \beta_{5j}\text{Incomecatenum}_i + \beta_{6j}\text{famsizenum}_i + \beta_{7j}\text{childrennum}_i + \beta_{8j}\text{oldperson}\sim\text{m}_i + u_{ij} \quad \ldots\ldots\ldots\ldots (6.8)$$

$$\text{conshare}_i = \alpha_j + \beta_{1j}\text{ltotalexp}_i + \beta_{2j}\text{noofmigrants}_i + \beta_{3j}\text{remittances}_i + \beta_{4j}\text{litperson}_i + \beta_{5j}\text{Incomecatenum}_i + \beta_{6j}\text{famsizenum}_i + \beta_{7j}\text{childrennum}_i + \beta_{8j}\text{oldperson}\sim\text{m}_i + u_{ij} \quad \ldots\ldots\ldots\ldots (6.9)$$

6.2 Descriptions of Variables used in the Equations

Various demographic and socio-economic characteristics have been used to estimates the impacts of remittances send by the migrants on the migrants' household expenditure pattern on various items. The variables used in equations (6.4), (6.5), (6.6), (6.7), (6.8), (6.9) are described in Table 6.1 as follows:

Table: 6.1 Descriptions of Variables in the Equations

Dependent Variables	
fdshare	Share of expenditure on food
edushare	Share of expenditure on education
hshare	Share of expenditure on health care
houseshare	Share of expenditure on housing
conshare	Share of expenditure on consumers goods
Explanatory/ Independent Variables	
ltotalexp	Log of total expenditure of the migrants' household
noofmigrants	Number of migrants from the household
remittances	Amount of remittances per annum
litperson	Number of literate person in the household
Incomecatenum	1-(Household total annual income in the ranges between ₹ 1,38,000-1,90,000)
	2-(Household total annual income in the ranges between ₹ 1,91,000-3,30,000)
	3-(Household total annual income above ₹ 3,30,000)
famsizenum	1- (Having 1-3 family members in the household)
	2- (Having more than 3 family members in the household)
childrennum	0- (Not having children in the household)
	1- (Having children in the household)
oldperson~m	0- (Not having old age person above 60 years age in the household)
	1- (Having old age person above 60 years age in the household)

The expenditure on food share include items of expenditure like on vegetables, fruits, eggs, meats, milk, yogurt, ghee, sugar, coffee, tea, horlicks, fish, vegetable oils,

salts, spices, pulses, cereals grains. The expenditure on education share include expenses on school fees, school uniforms, books, stationeries, tuition fees and travel cost to go to school. The expenditure on health share includes expenses like on doctor fees, medicine, hospitalization, tests, x-ray and insurance on health premiums. The expenditure share on housing includes expenses on construction of new house or purchase of a house, mortgage payment, energy cost, maintenance and repairing cost. The expenditure on consumer goods share includes expenses on both consumer durable and non-durable goods like expenditure on textiles, foot wears, personal care, electronic items, furniture, motorcycle, bicycle, cars and appliances.

Regression technique is applied to each single item as a function of many independent variables. The Breuch-Pagan (BP) test of independence was used see whether inter-functional relations are there or not. BP test H_0: The share of expenditure on each item is independent of other item. H_1: The share of shares of expenditure on each item is dependent of other item. The results found that $P<0.05$ (0.000), hence the null hypothesis is rejected. As the share of expenditure on each item is dependent on other item, OLS is estimate is efficient but not unbiased. Therefore, seemingly unrelated regression (SURE) technique (Zellner, 1962) is used to estimate the share function of all items simultaneously.

6.3 Results of Remittances-Expenditure on Various Items of Migrants' Households in the Origin

The results of the remittances-expenditure on various items of the migrants' households is given below in Table 6.2

Table: 6.2 Descriptive Statistics of Share of Average Expenditure on Various Items

Variable	observation	Mean	S.D	Min	Max
fdshare	150	.1205413	.0351447	.0588235	.25
edushare	150	.0606256	.0786767	0	.2564103
hshare	150	.0949981	.246449	.0506329	.2083333
houseshare	150	.1584517	.946231	.043783	.4938272
conshare	150	.2331462	.660886	.869565	.54
ltotalexp	150	10.79628	.3595686	9.740969	11.52288
noofmigrants	150	1.1	.3225319	1	3
remittances	150	58073.33	20722.23	17000	122000
litperson	150	4.38	1.349472	2	8
Incomecatenum 2	150	.8933333	.3097231	0	1
3	150	.1	.301005	0	1
2.famsizenum	150	.5133333	.5014966	0	1
1.childrennum	150	.42	.495212	0	1
1.oldperson~m	150	.2733333	.4471636	0	1
IMR3	150	-7.878261	.7210598	-3.454443	.9999385

The Table 6.2 shows the average budget shares of the migrants' household in the origin on five different expenditure categories namely on food, education, health care, housing and consumer goods. For the total migrants' household sample of the study area as a whole spend more of the remittances amount on consumer goods (both durable and

non-durable goods) 23.31% followed by the expenditure on housing (15.8%), food (12.05%), health (09.4%) and education (06.06%).The expenditure on consumer goods and housing is more because as the household as the household received remittances they try to increase the household assets. Next highest budget allocation of the remittances amount by the migrants' household is on housing. Because better housing (pucca house) also reflects about the higher economic and social status in the village. Hence they give more importance to a better housing rather than on health. The household earnings from farming as well as non-farming activities, savings in financial institutions and the remittances send by the migrants helps the migrants households to either built new pucca houses or semi-pucca houses or renovate the existing house. The share of expenditure on education is low as a whole because in many migrants household there are no any children in the household or there is school drop of children for which the share of expenditure on education is low. The share of expenditure on food is 12.05%. Among the food items majority of expenditure of remittances amount on food is on consumption of meat, fish, eggs, vegetable, mustard oil and rice.

The result of OLS and SURE output of impact of remittance and other factors on share of expenditure on food, education, health care, housing and consumer goods are shown in Table 6.3 and 6.4:

Table: 6.3 OLS Output of Remittances-Expenditure Category of Migrants' Households

Variables	Food	Education	Health	Housing	Consumer Goods
_cons	0.9759** 0.000	-0.5219 0.111	0.3075*** 0.018	-1.7384** 0.012	0.2700 0.573
ltotalexp	-0.0826** 0.000	0.0553* 0.094	-0.0218* 0.098	0.1777** 0.012	-0.0134 0.783
noofmigrants	-0.0086 -1.05	-0.1873 0.159	0.0101** 0.059	0.0161 0.569	-0.0138 0.486
remittances	0.0003** 0.0453	-0.0000596** 0.0331	-0.0000621** 0.011	-0.000036 0.289	0.0000131 0.145
litperson	0.0073** 0.002	-0.0001 0.929	00010 0.463	0.0035 0.653	-0.0058 0.291
Incomecatenum 2	-0.0038 0.889	-0.0038 0.992	0.0324* 0.065	0.0419 0.651	0.0923 0.156
3	-0.0095 0.733	0.0026 0.954	0.0329* 0.069	0.0431 0.653	0.0874 0.193
2.famsizenum	0.0115 0.048**	-0.0219** 0.027	0.1019** 0.004	0.0096 0.631	-0.0018 0.896
1.childrennum	-0.0094 0.048**	0.1340** 0.000	-0.0017 0.647	-0.0615** 0.002	-0.0449** 0.001
1.oldperson~m			0.0237** 0.000	0.0080 0.661	0.0062 0.626
IMR		0.0016 0.908			
RMSE	0.02641	0.04217	0.01693	0.09017	0.06299

Notes: * and ** are significant levels at 10% and 5% levels of significant. The p value are in bracket.

Table: 6.4 SURE Output of Remittances-Expenditure Category of Migrants' Households

Variables	Food	Education	Health	Housing	Consumer Goods
_cons	0.9759** 0.000	-0.5345* 0.088	0.3074** 0.013	-1.7284** 0.009	0.2739 0.553
ltotalexp	-0.0826** 0.000	0.0560* 0.077	-0.0218* 0.084	0.1766** 0.009	-0.0139 0.768
noofmigrants	-0.0086 0.281	-0.0187 0.142	0.0101** 0.007	0.0162 0.552	-0.0137 0.471
remittances	0.00028** 0.0437	-0.00057** 0.0332	-0.0000622** 0.007	-0.0000134 0.279	0.0000132 0.126
litperson	0.0073** 0.001	0.0011 0.853	0.0010 0.447	0.0038 0.616	-0.0057 0.281
Incomecatenum 2	-0.0038 0.885	-0.0030 0.943	0.3240** 0.054	0.0428 0.632	0.0927 0.138
3	-0.0095 0.725	0.00098 0.982	0.3290** 0.058	0.0430 0.641	0.0874 0.176
2.famsizenum	0.0115** 0.039	-0.0226** 0.016	0.0109** 0.003	0.0108 0.574	-0.0013 0.920
1.childrennum	-0.0094 0.082	0.1343** 0.000	-0.0017 0.631	-0.0594** 0.002	-0.0441** 0.001
1.oldperson~m			0.0237** 0.000	-0.0003 0.984	0.0029 0.804
IMR3		0.0044 0.708			
RMSE	0.02561	0.040742	0.0163563	0.0871743	0.0608649

Notes: * and ** are significant levels at 10% and 5% levels of significant. The p values are in bracket.

6.3.1 Impact on Food Share

From the Table 6.4 it is observed that log of total expenditure, the amount of remittances per annum, number of literate person and family size category is significant for food share expenditure. The log of total expenditure coefficient says that if expenditure is increasing by 1% the percentage of expenditure on food items is decreasing on food item is decreasing by 8.26%. This shows that the engel's law of higher income leading to less expenditure on food is satisfied. The amounts of remittances per annum coefficient have positive significant impact on the food consumption expenditure but by a very little amount i.e. 1% increase in the amount of remittances increases the expenditure on food consumption by only 0.02%. The migrants' household mainly cultivated paddy and vegetables for their own consumption because of which the increase in food consumption expenditure does not increase much as the amount of remittances received by the migrants' household increases. The coefficient of number of literate person in the migrants' household has positively significant impact on the expenditure on food consumption. This is because more literate person know better about the condition that better food leads to better health conditions and also leads to keep the better mental and physical condition of the human being. Beside this more literate person in the household are employed in better income earning jobs than earning from farming only because of which the income of the household is more and household have the ability to purchase better nutritious food. As a result food expenditure increases as the number of literate person increases in the household. The coefficient of family size category has positively significant impact on the share of expenditure on food. The larger

the number of family members in the household the greater the demand for food increases because of which the expenditure on food consumption increases.

6.3.2 Impact on Education Share

From the Table 6.4 it is observed that in education share expenditure family size category, remittances per annum, children category and log of total expenditure are significant. The log of total expenditure coefficient says that 1% increase in total expenditure raises the share of expenditure on education by 5.6% whereas the share of expenditure on health decreases by 2.18% and the share of expenditure on housing increases by 17%. Since people are less educated they give more importance to a better house than good health condition because good house (pucca house) in village gives more social and economic status. Hence they give more weight to expenditure on housing rather than on health and consumer goods. The amount of remittances per annum coefficient and the family size category coefficient have negatively significant impact on expenditure on education but has positively significant impact on expenditure on food and healthcare. Because as the family size increases, the demand for food and health care because of which expenditure on food and health care increases. Beside this family size category has negatively significant impact on education share because in many migrants household there are no any children in the household and because of no any interest of further education of the after completing high school and higher secondary of the child in the migrants household there is no any expenditure on education. While the family size category has negatively significant impact on the education share expenditure but the children category has positively significant impact on the share of expenditure on

education. The children category coefficient says that 1 unit increase in the number of children in the household increases the amount of expenditure on education by 13.43%.

6.3.3 Impact on Health care share

From the Table 6.4 it is observed that the share of expenditure on health care amount of remittances per annum, log of total expenditure, old age category, income category and family size category are significantly. The log of total expenditure says that if expenditure is increasing by 1% the percentage of expenditure on health care is decreasing by 2.18%. The amount of remittance per annum coefficient has also negatively significant impact on the health care share expenditure. This is because the village people give more importance to a better housing and better education of their children. The number of migrants from the household has positively significant impact on the expenditure on health care. The number of migrants' coefficient says that 1 unit increase in the number of migrants from the household increase the expenditure on health care by 1.01%. The more the number of migrants from the household the greater the probability of the household to receive more amount of remittances from the migrants and greater will be the household income because of which the households are able to spend on health care. Income category of the household has positively significant impact on the expenditure on health care. Higher income category households have more ability to spend on health care than lower income category household. The coefficient of income category 2 (Household total annual income in the ranges between ₹ 1,91,000 - 3,30,000) says that 1 unit increase in the amount of household income raise the expenditure on health care by 3.24% and the coefficient of income category 3 (Household total annual income above ₹ 3,30,000) says that 1 unit increase in the amount of household income

raise the expenditure on health care by 3.29%. Higher income household have more ability to the health care services from any private doctor or private medical hospital. The old age persons in the household have positively significant impact on the share of expenditure on health care services. As the person grower older and older the bones and muscles becomes weak. The person capability of doing work decreases as the person becomes older and older. Beside this the probability of attacking by diseases also increases because of the expenditure on health care increases. The old age person category coefficient says that 1 unit increases in the number of old age person in the household increases the expenditure on health care by 2.37%.

6.3.4 Impact on Housing Share

Better house is desire of every family in both the rural as well as in the urban areas. From the Table 6.4 it is observed that the share of expenditure on housing children category has negative impact but the log of total expenditure has positive impact on the expenditure on housing. The log of total expenditure coefficient says that if expenditure is increasing by 1% the percentage of expenditure on housing increases by 17.66%. Since people are less educated they give more importance to better house they give more importance to a better house than good health condition because good house (pucca house) in village give more social and economic status. Hence they give more weight to expenditure on housing rather than on health, consumer goods and on food. The children category on the other hand has negatively significant impact on the expenditure on housing share. The children category coefficient says that 1 unit increase in the number of children in the household decreases the expenditure on housing by 5.94%. Because the

households concentrate more on the better future of their children and by providing them private tuition classes and studying them in private school.

6.3.5 Impact on Consumer Goods

From the Table 6.4 it is observed that the share of expenditure on consumer goods children category has negatively significant impact on the expenditure on consumer goods. The children category coefficient says that 1 unit increase in the number of children decreases the amount of expenditure on consumer goods by 4.41%. This is mainly because the household concentrate more on the expenditure of their children education rather than spending the remittances amount on consumer goods.

6.4 Testing Cross Equation Constraints

When we impose constraints that the impact of remittances is same for the share of expenditure on food share = health share = housing share = education share = consumer goods share we found that prob > F = 0.000. Since the F statistics is highly significant and hence we reject the null hypothesis that remittances have equal effect on share of expenditure on food share, health share, housing share, education share and consumer goods share.

The Table 6.5 shows the results when we impose constraints that log of total expenditure (food share = health share) there are some changes in the coefficient and probability value compared to the OLS output results. In case of share of expenditure on food the number of literate person coefficient in OLS 0.0073 changes to 0.0037 and the probability value changes from 0.002 in OLS to 0.001. The family size category having

more than 3 family members in the household coefficient 0.0115 in OLS changes to 0.0120 and the probability value changes from 0.048 in OLS to 0.033.

Table: 6.5 ltotalexp(Foodshare=HealthShare) Restricted SURE Estimation of the Parameters

	Food	Education	Health	Housing	Consumer Goods
_cons	0.5598** 0.000	-0.4964 0.113	0.4810** 0.000	-1.7063 0.010	0.3708 0.420
ltotalexp	-0.0397** 0.000	0.0521* 0.099	-0.0397** 0.000	0.1743** 0.010	-0.0239 0.611
noofmigrants	-0.0050 0.525	-0.0190 0.135	0.0086* 0.098	0.0160 0.556	-0.0145 0.445
remittances	-.0000438* 0.060	-.0000503 0.391	-.0000321 0.117	-.0000130 0.293	.0000149* 0.084
litperson	0.0037** 0.001	0.0011 0.851	0.0011 0.442	0.0038 0.616	-0.0057 0.282
Incomecatenum 2	-0.0124 0.635	-0.0022 0.958	0.3602** 0.035	0.0433 0.629	0.0947 0.130
3	-0.0179 0.510	0.0017 0.968	0.3638** 0.039	0.0435 0.638	0.0894 0.166
2.famsizenum	0.0120** 0.033	-0.0227** 0.015	0.0107** 0.004	0.0107 0.575	-0.0014 0.913
1.childrennum	-0.0107** 0.050	0.1344** 0.000	-0.0011 0.746	-0.0593** 0.002	-0.0438** 0.001
1.oldperson~m			0.0236** 0.000	-0.0002 0.987	0.0300 0.803
IMR3		0.0044 0.707			
RMSE	0.0260072	0.0407442	0.0164648	0.0871736	0.0608739

Notes: * and ** are significant levels at 10% and 5% levels of significant. The p values are in bracket.

The children category of having children in the household coefficient (-0.0094) in OLS changes to (-0.0107) and the probability value changes from 0.048 in OLS to 0.050.

In share of expenditure on education the log of total expenditure coefficient 0.0553 in OLS changes to 0.0521 and the probability value 0.094 in OLS changes to 0.099. The family size category having more than 3 family members in the household coefficient (-0.0219) in OLS changes to (-0.0227) and the probability value changes from 0.027 in OLS to 0.015. The children category of having children in the household coefficient (0.1340) in OLS changes to (0.1344) and the probability value 0.000 remains same.

In case of share of expenditure on health care the number of migrants from the household coefficient 0.0101 in OLS changes to 0.0086 and the probability value changes from 0.059 in OLS to 0.098. The income category of Household total annual income in the ranges between ₹ 1,38,000-1,90,000 coefficient 0.0324 in OLS changes to 0.3602 and the probability value 0.069 in OLS changes to 0.035. The income category of Household total annual income above ₹ 1,90,000 coefficient 0.0329 in OLS to 0.3638 and the probability value changes from 0.069 in OLS to 0.039. The old age person category of having old age person in the household coefficient 0.0237 in OLS changes to 0.0236 and the probability value 0.000 remains the same.

In case of share of expenditure on housing the log of total expenditure coefficient 0.1777 in OLS changes to 0.1743 and the probability value 0.012 in OLS changes to 0.010. The children category of having children in the household coefficient (-0.0615) in OLS changes to (-0.0593) and the probability value 0.002 remains the same.

In case of share of expenditure on consumer goods the amount of remittances per annum coefficient 0.0000131 in OLS changes to 0.0000149 and the probability value 0.145 in OLS becomes significant to 0.084 at 10% level of significance.

The Table 6.6 shows the results when we impose constraints that log of total expenditure (food share = housing share) there are some changes in the coefficient and probability value compared to the OLS output results. In case of share of expenditure on food the number of literate person in the household coefficient 0.0073 in OLS remains the same when we impose constraints and the probability value 0.002 in OLS changes to 0.004. The family size category having more than 3 family members in the household coefficient 0.0115 in OLS changes to 0.1198 and the probability value changes from 0.048 in OLS to 0.060. The children category of having children in the household coefficient (-0.0094) in OLS changes to (-0.0104) and the probability value 0.048 in OLS changes to 0.091.

In case of share of expenditure on education the log of total expenditure coefficient 0.0553 in OLS changes to 0.0787 and the probability value 0.094 which was significant at 10% level of significance in OLS changes to 0.011 and becomes significant at 5% level of significance. The remittances per annum coefficient (-0.0000596) in OLS changes to (-0.0000950) and the probability value 0.0331 in OLS which was at 5% level of significance changes to 0.099 and becomes significant to 10% level of significance. The family size category having more than 3 family members in the household coefficient -0.0219 in OLS changes to (-0.0223) and the probability value 0.027 in OLS changes to 0.017.

Table: 6.6 ltotalexp(Foodshare=HousingShare) Restricted SURE estimation of the parameters

	Food	Education	Health	Housing	Consumer Goods
_cons	0.6453** 0.001	-0.7544** 0.014	0.2592** 0.036	0.4556** 0.037	-0.3818 0.364
ltotalexp	-0.0485** 0.016	0.0787** 0.011	-0.0168 0.180	-0.0485** 0.016	0.0569 0.210
noofmigrants	-0.0058 0.522	-0.0168 0.187	0.0105** 0.040	-0.0025 0.924	-0.0081 0.670
remittances	-0.0000290 0.441	-0.0000950* 0.099	-0.0000705** 0.002	0.0000244** 0.000	0.0000184 0.818
litperson	0.0073** 0.004	0.0011 0.859	0.0010 0.452	0.0042 0.581	-0.0058 0.270
Incomecatenum 2	-0.0106 0.720	-0.0075 0.856	0.0313* 0.062	0.0884 0.324	0.0790 0.205
3	-0.0162 0.599	-0.0034 0.938	0.0319* 0.066	0.8690 0.349	0.7429 0.249
2.famsizenum	0.1198* 0.060	-0.0223** 0.017	0.0109** 0.002	0.0083 0.670	-0.0059 0.965
1.childrennum	-0.0104* 0.091	0.1336** 0.000	-0.0018 0.600	-0.0526** 0.006	-0.0461** 0.001
1.oldperson~m			-0.0238** 0.000	-0.0014 0.931	0.0033 0.789
IMR3		0.0044 0.709			
RMSE	0.0258614	0.0408122	0.0163647	0.0903699	0.0612785

In case of share of expenditure on health care the log of total expenditure coefficient (-0.0218) in OLS changes to (-0.0168) and the probability value 0.098 which

was significant in OLS at 10% level of significance changes to 0.180 and becomes insignificant. The number of migrants from the household coefficient 0.0101 in OLS changes to 0.0105 and the probability value 0.059 in OLS changes to 0.040. The remittances per annum coefficient 0.0000621 in OLS changes to 0.0000705 and the probability value 0.011 in OLS changes to 0.002. The income category of Household total annual income above ₹ 1, 90,000 coefficient 0.0324 in OLS to 0.313 and the probability value changes from 0.069 in OLS to 0.062. The income category of Household total annual income above ₹ 1, 90,000 coefficient 0.0329 in OLS to 0.319 and the probability value changes from 0.069 in OLS to 0.066. The old age person category of having old age person in the household coefficient 0.0237 in OLS changes to 0.0238 and the probability value 0.000 remains the same.

In case of share of expenditure on housing, the children category of having children in the household coefficient -0.0594 in OLS changes to (-0.0526) and the probability value 0.002 in OLS changes to 0.006.. The log of total expenditure coefficient 0.1777 in OLS changes to 0.0485 and the probability value 0.12 in OLS changes to 0.016. The remittances per annum coefficient (-0.000036) in OLS change to 0.0000244 and the probability value 0.289 in OLS which was insignificant changes to 0.000 and becomes significant.

In case of share of expenditure on consumer goods the children category of having children in the household coefficient (-0.0441) in OLS changes to (-0.0461) and the probability value 0.001 remains the same.

CHAPTER: 7

SUMMARY AND POLICY SUGGESTION

The objectives of this study was to find out the socio-demographic features of the rural out-migrants' household in the origin, to identify the perceptions of the dominant factors of rural out-migration, to analyze the impact of rural out-migration on agricultural performance and to examine the impact of remittances on the expenditure on various items of the migrants' household in the origin. The data of the study have been analyzed using software of Statistical Package for Social Science (SPSS) and Stata. Analysis of the data have applied the used of descriptive statistics, chi-square, t-test, and regression analysis. The findings from the study about the socio-demographic characteristics of the migrants' household shows that majority of the migrants have marginal size of agricultural land holding, having 1-2 earning members in the households and mainly of nuclear family types consisting of 3-4 members in the household. Majority of the migrants' households who have children in their household have children not more than two children. Only in few household there are more than two children which are mainly seen in the cases of joint family migrants' household. Less number of children is preferred by the migrants' household because more number of children will have more economic burden to the migrants' household. The rural out-migration from the study areas were mainly dominated by male and mostly by married male migrants of the age group of 25-34 years old earning. Majority of the migrants earned monthly income in the range of ₹ 10,000-15,000 in the destination which reflects that majority of the migrants

from the study areas are prone to migrate from the rural to urban areas for earning a monthly income of ₹ 10,000-15,000.

The results about the perception of the push and pull factors of migration, in both the ST and Non-ST category migrant households there is no any significant difference between the two communities perception regarding about the push factors of rural out-migration for crop failure, scarcity of land, unemployment, lack of alternative employment opportunities, increasing household burden and low household income except for poor housing condition and soil erosion where there is significant difference between the two communities as a push factors of rural out-migration. Further in both ST and Non-ST migrants households have same perception on the pull factors of rural out-migration for higher wage, regular income, own settlement, better employment opportunities, except for better income earning of the migrants from the same village, number of industries, short distance and same language and culture where there is significant difference between the two communities. As a whole the rural people of the study areas mainly migrate to the urban areas mainly due to combination of push -pull factors and to reduce household risk burden due to increasing household members and marginal size of land holding which leads to low production of crops and non-availability of food substances for the entire year, education of their children and crop loss due to floods and attacked by wild animals like elephants. The findings of the study comply with the theory of New Economics of Labour Migration (NELM) that migration is a strategy taken together by the migrants and the household in ordered to reduce the risk burden of the household by distributing or sharing the risk burden.

As far as the impact of rural out-migration on agriculture is concerned there is both positive as well as negative impact on agriculture due to rural out-migration. There is a shortage of labour for doing agricultural activities of the migrants' household. The shortage of labour is more acute to the migrants' households who have only wife, children and old age person left in the origin areas of migration to do agricultural activities. They need more time than in earlier for doing the agricultural activities mainly at the time of paddy plantation and cultivating the crops. Not every migrant's household in the origin is able to used hired labour for planting the paddy crops and reaping of the crops. Those migrants household who received more than ₹ 25000 quarterly are able to used hired labour for planting and reaping the crops. At the time of tilling the paddy field there is no any shortage of labour because majority of the migrants' households used hired tractor or power tiller for tilling the soil for cultivation. But there is also some positive impact on agriculture due to rural out-migration. The remittances send by the migrants back home in the origin helps the migrants' household to increase their land holding, increase production area (through new agricultural cultivable land or through hiring leased-in land), hiring tractors, hiring labours, increase livestock holding, increase farm income and ultimately increase household level of income as a whole. However when the impact of migration on agriculture is tested between ST and Non-ST communities, the difference was found significant for change in cultivated area and increase in tea area adoption. Mainly the Non-ST community migrant households purchased new land for plantation of tea garden as a side source of household income which helps the household at the time of crops failure due to floods and crop loss due to damage by wild elephants. The tea plantation were mainly grown near to the migrants

households so that it is easy to look after and maintain the tea garden by the migrants' household. For tea plantation the land should not be low lying areas but majority of the ST communities migrants' households areas were in low lying areas and as tea plantation is mainly grown by the rural household near to their household areas because of which there is less seen of purchased of land for tea plantation by the ST communities migrants' household.

To see what factors are influencing the positive impact on agriculture, the result shown that both remittances and net sown area are statistically significant for the positive impact on agricultural performance. The remittances send by the migrants back home in the origin helps the migrants' households to increase their livestock holding, hiring leased-in land, hiring labour and ultimately helps to increased farm income, household level of income and the saving amount. The increased saving amount and the regular monthly remittances send by the migrants helps the migrants household to purchased new additional land for cultivation purpose.

The result of SURE of the impact of remittance and other factors on share of expenditure on food, education, health, housing and consumer goods shows that incase of food share: log of total expenditure is negatively significant and amount of remittances per annum, number of literate person in the migrants' household and family size category of having more than three members in the households have positively significant impact on the share of expenditure on food items. As the number of literate person in the household increases expenditure on food share increases because literate person are employed in better income earning jobs than earning from farming only because of which the income of the household is more compared to the households who have less number

of educated persons in the household. Beside this the more educated person are more prone to migrate to the urban areas in search of better earning jobs than earning from framing only. When the literate person got jobs in urban areas they send remittances and the amount of remittances increases as more number of literate persons from the household got jobs in the urban areas. The more remittances send the migrants' makes the household capable to spend on more nutritious food items. The increase in the number of family members in the household mainly increases the food demand because of which the expenditure on food items increases. In case of Education share: amount of remittances per annum and family size category of having more than three members in the households have negatively significant impact and log of total expenditure and children category of having children in the household have positively significant impact on the share of expenditure on education. As the number of children in the household increases, the household focus more on better education of their children rather than spending on food items, health care and consumer goods. In case of Housing Share: Children category of having children in the household has negatively significant impact but log of total expenditure has positively significant impact on the share of expenditure on housing. As the level of household income increases the household focus on improvement of their housing condition because better house (pucca house) in rural areas not only reflect better economic status but also better socio; status among the rural people. But as the numbers of children in the household increases, the household concentrate more on better education of their children rather than better housing. And in case of Consumer Goods Share: children category of having children in the household is negatively significant impact on the share of expenditure on consumer goods. In case of

Health care share: amount of remittances per annum and log of total expenditure have negatively significantly impact but old age category of having old age person in the household, family size category of having more than 3 members in the household income category of household total annual income in the ranges between ₹ 1,91,000-3,30,000 and above ₹ 3,30,000 have positively significant impact on the share of expenditure on health care. As the amount of remittances increases in the household the household focus more on better education of their children and improvement of their housing condition rather than expenditure on health care and consumer goods but when the number of old age person in the household increases they expenditure on health care increases because old age person not physically fit for doing labour activities and they are more prone of attacking by diseases as they become older and older. Because of this the expenditure on health care increases as the number of old age person increases in the household.

As income increases due to more migration, expenditure share on food declines but increases expenditure on housing and education which reflects the engel's law of higher income leading to less expenditure on food items is satisfied and more expenditure by the migrants' household on productive investment on housing and on education as income increases. Family size category has negative impact on education share but children category gives positive impact on education share which reflects that as the number of children increases the household expenditure on education increases.

The rural out-migration helps the migrants' household on education expenditure of their children, increase livestock holding, increase their production area either through leased-in land or buying new cultivable land, increase the level of farm income and household level of income. But the continuous flow of rural out-migration mainly in the

age group of 15-34 years old will be bad in future for the rural economy and the for the whole area of Assam as a whole. Because in continuous migration of rural youths to the urban areas will lead to more labour scarcity problem. Beside this the continuous flow of rural youth migrants to the urban areas from the same village and earning well in the destination better than income earning from farming activities will have demonstration effect on the rural youths of the non-migrants in the area of origin and they will have low interest to do farming activities. Ultimately, the agricultural production will go down.

SUGGESTIONS

The study suggests the following suggestions in order to reduce the rate of rural out-migration from the study area of Assam in particular and in India as a whole.

- To check migration alternative assured employment opportunities should created so that the rural people do not migrate to the urban areas in search of jobs. The government should try to increase the non-farm employment opportunities in the rural areas.

- The government should make more effort for creating more small scale industries in village so that the local population will be absorbed. The small scale industries mainly used the raw materials available itself from the rural areas and are most labour intensive which can accommodate of providing employment to the local rural population and helps in reducing unemployment.

- The government should increase the skills of the rural people through various training programmes. The government should mainly focus on providing of vocational

training depending on the availability of resources in the rural so that resources could be utilized in a better way and better income could be earned by the rural people.

- To improve the agricultural production government should provide farm incentives either free of cost or at subsidize price. Mainly small size of agricultural land holding in the rural areas hardly gets any incentives from the government due to their marginal size of land holding. The government should provide training of how higher crops can be yield from small amount of land through multiple cropping from the same land and through diversification of such kind of crops which are most suitable to cultivate in the types of quality of land available in the rural areas.

Bibliography

Abramitzky, R., & Boustan, L. (2017). Immigration in American Economic History. *Journal of Economic Literature*, *55*(4), 1311–1345.

Agesa, R. U., & Kim, S. (2001). Rural to Urban Migration as a Household Decision: Evidence from Kenya. *Review of Development Economics*, *5*(1), 60–75.

Ajaero, C. K., & Onokala, P. C. (2013). The Effects of Rural-Urban Migration on Rural Communities of Southeastern Nigeria. *International Journal of Population Research*, *2013*, 1–10.

Amphune, B. E., Weldegebriel, Z. B., & Enaro, Y. D. (2018). Migration and Urban Livelihoods : A Quest for Sustainability in Southern Ethiopia. *Global Journal of Human-Social Sciences (B)*, *18*(3), 24–39.

Assam Human Development Report. (2014). *Managing Diversities, Achieving Human Development*. Planning and Development Department, Government of Assam.

Bhanumurthy, N. R., & Mitra, A. (2010). Globalization, Growth and Poverty in India. In M. Nissanke & E. Thorbecke (Eds.), *In the Poor Under Globalisation, in Asia, Latin America and Africa* (pp. 116–145). Oxford: Oxford University Press.

Bhatt, W. (2009). The Gender Dimension of Migration in India: The politics of Contemporary Space in Orissa and Rajasthan. *Development in Practice*, *19*(1), 87–93.

Bhattacharya, P. C. (1993). Rural-Urban Migration in Economic Development. *Journal of Economics Surveys*, *7*(3), 243–281.

Brauw, A. De. (2010). Seasonal Migration and Seasonal Migration and Agricultural Production in Vietnam. *The Journal of Development Studies*, *46*(1), 114–139.

Castelli, F. (2018). Drivers of migration: why do people move? *Journal of Travel Medicine*, *25*(1), 1–7.

Census of India. (2001). *Census Report of India*. Office of the Registrar General & Census Commissioner, India: Ministry of Home Affairs, Government of India.

Census of India. (2011). *Census Report of India*. fice of the Registrar General & Census Commissioner, India: Ministry of Home Affairs, Government of India.

Chandra, R., & Gupta, P. (2018). *Indian Migration to the Gulf: Overview of Trends and Policy Initiatives by India* (First Edit; P. Fargues & N. M. Shah, Eds.). Geneva: Gulf Research Center Cambridge.

Chattopadhyay, A. (1997). Family Migration and the Economic Status of Women in Malaysia. *International Migration Review*, *31*(2), 338–352.

Cooke, T. J. (2003). Family Migration and the Relative Earnings of Husbands and Wives. *Annals of Association of American Geographers*, *93*(2), 338–349.

Das, D. (2015). Changing climate and its impacts on Assam, Northeast India. *Bandung: Journal of the Global South*, *2*(1), 1–13.

Deaton, A. (1997). *The Analysis of Household Surveys: A Microeconometrics Approach to Development Policy*. Baltimore: Johns Hopkins University Press for the World Bank.

Desai, Sonalde & Benerji, M. (2008). Negotiated Identities: Male Migration and Left-Behind Wives in India. *Journal of Population Research*, *25*(3), 337–355.

Deshingkar, P. (2004). *Understanding the Implications of Migration for Pro-Poor*

Agricultural Growth. A Paper Prepared for the DAC POVNET Agriculture Task Group Meeting, Helsinki, 17-18 June. (June), 1–20.
Fasoranti, O. O. (2009). Perception of Rural-Urban Migration in Selected Rural Communities in Ondo State, Nigeria. *Bangladesh E-Journal of Sociology*, *6*(1), 96–105.
Foged, M. (2016). Family Migration and Relative Earnings Potentials. *Labour Economics*, *42*, 87–100.
Haas, H. de. (2001). *Migration and Agricultural Transformations in the Oases of Morocco and Tunisia*. Utrecht: KNAG.
Haberfeld, Y., Menaria, R. K., Sahoo, B. B., & Vyas, R. N. (1999). Seasonal Migration of Rural Labor in India. *Population Research and Policy Review*, *18*(5), 473–489.
Hadit, J. (2012). *The Righteous Mind: Why Good People are Divided by Politics and Religion*. Vintage.
Harris, J. R., & Todaro, M. P. (1970). Migration, Unemployment and Development : A Two-Sector Analysis. *The American Economic Review*, *60*(1), 126–142.
Hass, H. de. (2003). *Migration and Development in Southern Morocco. The Disparate Socio-Economic Impacts*. Radboud University, Nijmegen.
Hassan, T., & Khan, D. J. H. (2012). Determinants of Rural Out-Migration in India. *International Journal of Advanced Research in Management and Social Sciences*, *1*(6), 61–80.
Hossain, S. (2005). Poverty , Household Strategies and Coping with Urban Life : Examining ' Livelihood Framework ' in Dhaka City , Bangladesh. *Bangladesh 3-Journal of Sociology*, *2*(1), 1–8.
International Organization for Migration. (2011). *International Migration Law: Glossary on Migration* (2nd Edit; R. Perruchoud & J. Redpath-Cross, Eds.). IOM: Geneva.
International Organization for Migration (IOM). (2018). *World Migration Report*. IOM: Geneva.
Jeyaranjan, J. (2017). The Life and Times of Migrant Workers in Chennai. In D. N. Reddy & K. Sarap (Eds.), *Rural Labour Mobility in Times of Structural Transformation: Dynamics and Perspectives from Asian Economies* (pp. 299–326). Palgrave Macmillan.
Jokisch, B. D. (2002). Migration and Agricultural Change : The Case of Smallholder Agriculture in Highland Ecuador. *Human Ecology*, *30*(4), 523–550.
Joseph, T. (2018). *Early Indians: The Story of Our Ancestors and Where We Came From* (First). New Delhi: Juggernaut Books.
KC, B., Wang, T., & Gentle, P. (2017). Internal Migration and Land Use and Land Cover Changes in the Middle Mountains of Nepal. *Mountain Research and Development*, *37*(4), 446–455.
Keshri, Kunal & Bhagat, R. B. (2010). Temporary and Seasonal Migration in India. *Genus*, *66*(3), 25–45.
Kikon, D. (2018). Dreams and Desserts: Indigenous Migration, Service, and Mobility in India. *International Journal of Communication*, *12*, 4143–4157.
Kochkin, E. V, & Sircar, S. (2014). Temporary Migration in India: Findings from Statistical Data and Learnings from Case Studies. *Journal of Siberian Federal University. Humanities & Social Sciences*, *10*(7), 1794–1802.
Latha, R., Vinayak, B., & Murthy, B. S. (2017). Response of Heterogeneous Vegetation

to Aerosol Radiative Forcing Over a Northeast Indian Station. *Journal of Environmental Management*, *30*, 1–9.
Leser, C. E. V. (1963). Forms of Engel Functions. *Econometrica*, *31*(4), 694–703.
Lewis, W. A. (1954). Economic Development with Unlimited Supplies of Labour. *The Manchester School*, *22*(2), 139–191.
Lipton, M. (1980). Migration from Rural Areas of Poor Countries : The Impact on Rural Productivity and Income Distribution. *World Development*, *8*(1), 1–24.
Lucas, R. E. B. (2007). Migration and Rural Development. *Journal of Agricultural and Development Economics*, *4*(1), 99–122.
Lucas, R. E. B., & Stark, O. (1985). Motivations to Remit : Evidence from Botswana. *Journal of Political Economy*, *93*(5), 901–918.
Maddela, S. (2017). Rural-Urban Migration : Problem of Socio-Demographic Regulations. *Journal for Studies in Management and Planning*, *03*(13), 300–303.
Madhu, G., & Uma, H. (2014). Rural To Urban Migration-Opportunities and Challenges. *International Journal of Advanced Research*, *2*(6), 389–394.
Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J. E. (1993). Theories of International Migration : A Review and Appraisal. *Population and Development Review*, *19*(3), 431–466.
Meagher, K. (2001). The Invasion of the Opportunity Snatchers: The Rural-Urban Interface in Northern Nigeria. *Journal of Contemporary African Studies*, *19*(1), 39–54.
Mitra, A. (1990). Duality, Employment Structure and Poverty Incidence : The Slum Perspective. *Indian Economic Review*, *25*(1), 57–73.
Narayana, M. R. (1990). Policy and Non-Policy Economic Determinants of Inter-Regional Migration of Workers in a Developing Country: Some New Evidence Based on a Polytomous Logit Model for India. *Population Research and Policy Review*, *9*(3), 285–302.
Nguyen, C. M., & Winters, P. (2011). The Impact of Migration on Food Consumption Patterns : The Case of Vietnam. *Food Policy*, *36*(1), 71–87.
Ofuoku, A. U., & Chukwuji, C. O. (2012). The Impact of Rural-Urban Migration on Plantation Agriculture in the Niger Delta Region, Nigeria. *Journal of Rural Social Sciences*, *27*(1), 137–151.
Pakistan Bureau of Emigration and Overseas Employment. (2015). *Migration statistics of Pakistan*. Ministry of Overseas Pakistanis and Human Development, Islamabad.
Pandey, A. (2013). Changing Dynamics of Rural-Urban Male Migration and Economic Development in India after Economic Reforms. *Man & Development*, *35*, 121–132.
Parida, J. k, Mohanty, S. k, & Raman, K. R. (2015). Remittances, Household Expenditure and Investment in Rural India : Evidence from NSS data. *Indian Economic Review*, *50*(1), 79–104.
Peter, B., & Gupta, K. (2012). Implications of Forest Conservation Interventions of the Judiciary on Human Migration: An In-Depth Exploration into the Causes of Labour Migration to Plywood Industry in Kerala. *Indian Journal of Social Development*, *12*(1), 1–14.
Phillips, D. G. (1959). Rural-to-Urban Migration in Iraq. *Economic Development and Cultural Change*, *7*(4), 405–421.
Rahman, M. M. (2012). Bangladeshi Labour Migration to the Gulf States : Patterns of

Recruitment and Processes. *Canadian Journal of Development Studies*, *33*(2), 214–230.
Rakotonirina, J. D., & Cheng, J. (2015). Research on the Impacts of Rural-to-Urban Migration on Demographic Characteristics Regarding Economic Development in Madagascar. *American Journal of Industrial and Business Management*, *5*, 335–350.
Ranathunga, S. P. B. (2011). *Impact of Rural to Urban Labour Migration and the Remittances on Sending Household Welfare: A Sri Lankan Case Studies* (No. Paper No: 35943). Retrieved from https://mpra.ub.uni-muenchen.de/35943/dated on 20.09.2018
Ravenstein, E. G. (1885). The Laws of Migration. *Journal of the Statistical Society of London*, *48*(2), 167–235.
Reed, H. E., Andrzejewski, C. S., & White, M. J. (2010). Men' s and Women' s Migration in Coastal Ghana An Event History Analysis. *Demographic Research*, *22*(25), 771–812.
Rehbun, U., & Brown, D. L. (2015). Patterns and Selectivities of Urban/Rural Migration in Israel. *Demographic Research*, *33*(5), 113–144.
Rele, J. R. (1969). Trends and Significance of Internal Migration in India. *Sankhya: The Indian Journal Of Statistics, Series B*, *31*(3/4), 501–508.
Rosenzweig, M. R. (1988). Risk, Implicit Contracts and the Family in Rural Areas of Low-Income Countries. *The Economic Journal*, *98*(393), 1148–1170.
Sagynbekova, L. (2017). Environment, Rural Livelihoods, and Labor Migration: A Case Study in Central Kyrgyzstan. *Mountain Research and Development*, *37*(4), 456–463.
Sengupta, A. (2013). Migration, Poverty and Vulnerability in the Informal Labour Market in India. *Bangladesh Development Studies*, *36*(4), 99–116.
Shauman, Kimberlee A. & Noonan, M. c. (2007). Family Migration and Labor Force Outcomes : Sex Differences in Occupational Context. *Social Forces*, *85*(4), 1735–1764.
Singh, J. P. (1986). Marital Status Differentials in Rural to City Migration in India. *Genus*, *42*(3/4), 89–106.
Sri Lanka Bureau of Foreign Employment. (2009). *Annual Statistical Report of Foreign Employment*.
Tacoli, C. (2002). *Changing Rural-Urban Interactions in Sub-Saharan Africa and their Impact on Livelihoods : A Summary* (No. Working Paper 7). IIED, London.
Taukeer, M. (2018). An Overview and Analysis of Nexus of Migration and Remittances : Evidence from Migration from India to GCC Countries. *Saudi Journal of Humanities and Social Sciences*, *3*(5), 601–608.
Taylor, J. E. (1999). The New Economics of Labour Migration and the Role of Remittances in the Migration Process. *International Migration*, *37*(1), 63–88.
Taylor, J. E., Arango, J., Hugo, G., Kouaouci, A., Massey, D. S., & Pellegrino, A. (1996). International Migration and Community Development. *Population Index*, *62*(3), 397–418.
Taylor, J. E., Rozelle, S., & Brauw, A. De. (2003). Migration and Incomes in Source Communities : A New Economics of Migration Perspective from China. *Economic Development and Cultural Change*, *52*(1), 75–101.
Todaro, M. (1969). A Model of Labor Migration and Urban Unemployment in Less

Developed Countries. *The American Economic Review*, *59*(1), 138–148.
Ullah, a K. M. A. (2004). Bright City Lights and Slums of Dhaka city : Determinants of rural-urban migration in Bangladesh. *Migration Letter*, *1*(1), 26–41.
Vidal, S., Perales, F., Lersch, P. M., & Branden, M. (2017). Family Migration in a Cross-National Perspective The Importance of Within-Couple Employment Arrangements in Australia, Britain, Germany and Sweden. *Demographic Research*, *36*(10), 307–338.
Working, H. (1943). Statistical Laws of Family Expenditure. *Journal of the American Statistical Association*, *38*(221), 43–56.
Zellner, A. (1962). An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias. *Journal of the American Statistical Association*, *57*(298), 338–368.
Zwager, N. de, & Sintov, R. (2017). *Maximizing the Development Impact of Migration in Nepal: Comprehensive Market Study*. Kathmandu.