



Roles of Immigrants on Communities' Livelihood in Sunamganj Area: An Empirical Analysis

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Abstract

Tahirpur Upazila of the Sunamganj District is a highly significant location supporting natural and economic resources that entice various communities for interregional migration. The study has applied an integrated approach to gathering both qualitative and quantitative data and information from both the primary and secondary sources for determining how the immigrant groups contribute to ensure the quality of life of local communities. It involved quantitative household surveys, participatory Focus Group Discussions (FGDs), Key Informant Interviews (KIIs), personal interviews, and case studies. We found that farmers require hiring some migrant workers to help them harvest the standing Boro-Rice sooner for preventing unexpected crop losses due to flash floods. This region also draws other communities to move here as practitioners and entrepreneurs. A whole community has also been attracted to immigrate here for living permanently. The study suggested that the changing flow of labor and capital plays a role in changing the socio-economic landscape of the source region through changing its economic activity, the restructuring of local infrastructure, and economic policies. Mechanization in harvesting Boro-Rice demands more financial resources than some laborers do. It is, thus, concluded that the present financial capital is not compatible with the living standards and physical capital of the local agriculture farmers, because they need to spend maximum portions of that capital for climate change adaptation and mechanization process, although the declining immigrant worker flow results in producing more financial capital through increasing capital flow among the workers within Tahirpur Upazila. However, it has been informed that social disputes differ depending on the size and employment of immigrant populations. Compared to migrant employees, migrant entrepreneurs can participate in local community activities more readily. This study also found that the migration of an entire population can lead to violence.

Key Words: Interregional Migration, Agriculture Farmer, Entrepreneur, Regional Economics, Sustainable Livelihood Framework, Climate-Induced Hazards.

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1. INTRODUCTION

Immigrants are people who move permanently or temporarily or seasonally from their native place to another and can be executed within the border or across countries for a variety of reasons (J. Burtler and B. Whiting, 2022). Interregional migration, often donated as an essential component of livelihood strategies to shape social changes (I. Rayhan and U. Grote, 2007; Jackson, J. A. 1970), and associated economic policies have been growing in importance since 1990 as a consequence of political liberalization and economic reform in Bangladesh. A livelihood can be defined as a set of capabilities, assets and activities required for a means of living (DFID, 2000).

There are several theories and policies for interregional migration under two contemporary ideas. Some theories believe that migration between two different regions is usually seen as the result of individual decisions (economic approach), but according to other theories it is a response to structural forces (approaches based on micro sociology (Rossi 1955; Holm and Oberg 1984), time-geography (Oberg 1979a; Hagerstrand 1970) or empirical generalizations (S. Oberg, 1995)). Theories of the first idea emphasize factor (labor and capital) mobility as an important policy to achieve a higher economy and living standard (S. Ghatak, et al., 1996; S. Oberg, 1995). On the other hand, there are some structural dimensions and policies of economic growth and development that play as the instruments to push the labor migrating from one less productive sector (like agriculture) to another more productive sector (like the manufacturing industry) for economic welfare (S. Ghatak, et al., 1996).

Bangladesh is a low-lying river delta with more than 230 rivers and tributaries that are located between the Bay of Bengal and the foothills of the Himalayas (I. Rayhan and U. Grote, 2007). Bangladeshi people are particularly susceptible to different climatic hazards and calamities because of the country's geography, population density, and extreme poverty. For instance, previous research indicated that regular floods and riverbank erosion are substantial causes for thousands of people's yearly homelessness, landlessness, and ensuing migration. In 1988, there were floods in over 60 percent of the country, impacting around 45 million people and resulting in more than 2,300 fatalities (FAP, 1993). Over 68 percent of the country was under water in 1998, which led to 2,380 fatalities. Floods impacted almost 20 million people between 2000 and 2002. A disastrous monsoon flood in 2004 swamped two-thirds of the nation; it affected close to 36 million people, caused 726 fatalities, and left millions homeless. Floods struck various regions of Bangladesh once more in 2005, having a considerable impact on people's means of subsistence, possessions, and activities. Similar losses in human and material capital are being caused by various climate disasters, such as drought, heat waves, unpredictable rainfall, etc.

However, these disasters vary by hydrological region in Bangladesh. According to the Ministry of Water Resources, Government of the People's Republic of Bangladesh, there are eight (08) hydrological regions under four different climatic hazards. These are drought-prone, flood-prone, salinity-prone, and flash flood-prone areas. These geographically diversified vulnerable landscapes create a geographical and occupational imbalance in Bangladesh. According to S. Oberg (1995), inter-regional migration may be necessary for a perfect long-term equilibrium in the wage level for each occupation. Figure 1 shows how an equilibrium condition between two regions resulting from the mobility of capital and labor tends to create a labor flow within the destined region in the long run according to S. Oberg (1995).



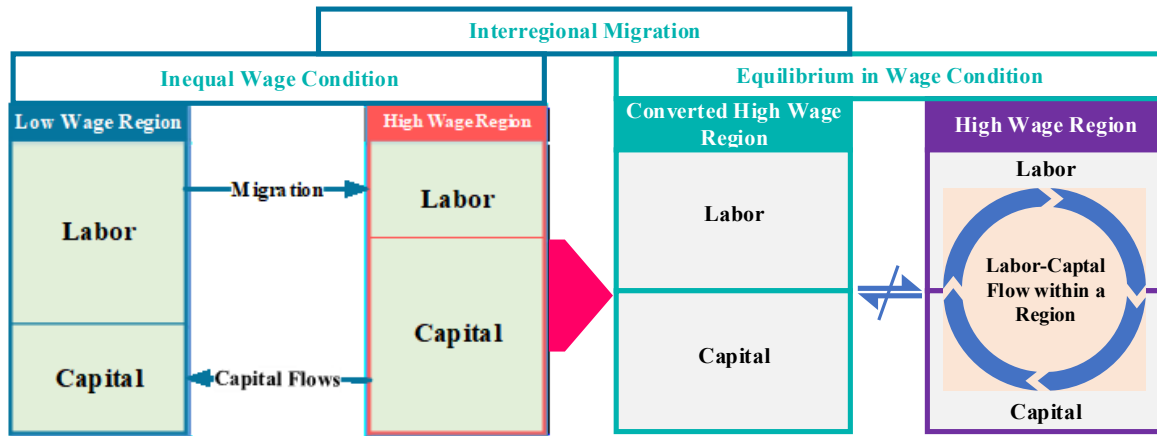


Figure: 1

Until recently, however, interregional migration research has focused unilaterally on urban unemployment and rural-urban labor migration. A growing literature suggests that changes in rural-rural labor and capital mobility over time are related to social and economic processes in geographically diverse regions (BRRI, 2020; S. Oberg, 1995). Therefore, it is important to examine the consequences of interregional immigrant mobility on the local community and emerging policy implications.

The objectives of the study are as follows:

- to identify different types of local community in the study area
- to assess the socio-economic condition of the local community in the study area
- to identify the major community and assess its socio-economic condition in the study area
- to identify different types of immigrant community in the study area
- to identify the roles of immigrant play in the study area.

2. LITERATURE REVIEW

Oberg, S. (1995) believed that migration between local labor markets is usually seen as either the result of individual decisions or a response to structural forces. The approach in the first part is mainly economic. It usually means that people are defined as rational in the sense that they are loyal to their preferences and maximize place utility functions in well-known market economies, in order to speculate in the outcome of decision processes. Several alternative approaches are possible based on e.g., micro sociology (Rossi 1955; Holm and Oberg 1984), time-geography (Hagerstrand 1970; Oberg 1979a) or empirical generalizations. According to S. Oberg (1995), Economic Approaches and the Approaches in Social Geography are briefly discussed in the following sections.

Jussibaliyeva, A. K., (2021) argued that migration through crossing borders and within nations affect not only the lives of the migrants, but also the chances for growth and prosperity in the places that are moved to and attained. They thought that lack of sufficient incentives at the source and the availability of superior opportunities at the destination, the strength of necessity in some

cases, or other causes are the same driving forces behind both domestic and international migration. Bakth, N., & Hasanuzzaman, S. (2022) stated that parental temporary migration may be an effective cope-up strategy to reduce domestic enemies brought on by environmental shocks, while its impact on children's education may be dubious. Pavel, T., et al., (2022) found that households are moved by both transitory and permanent shocks, although the latter has a greater impact in increasing migrants' income and expenditure rise in comparison to their counterparts, suggesting that enabling migration may boost wellbeing in nations with a high risk of disaster. Mukhopadhyay, U. (2022) demonstrated that although cross-border movement of people is not a recent phenomenon in the area, its causes and characteristics have experienced a significant transformation in recent years. Afsar, R. (2003, June) stated that the most frequent type of migration in Bangladesh is from rural to urban regions. He found that the bulk of economic migrants to metropolitan areas are young men, however, this has lately changed as more women are required in the ready-to-wear sector. For migrants, concerns including physical insecurity, inadequate housing, negative treatment by authorities, and development attempts are frequent. Afsar, R. (1994) indicated that a significant portion of population mobility results from the family's survival and adaptive strategies to maximize family income by allocating their labor to a number of locations involved in diversified income-earning activities. According to Harris, J. R., & Todaro, M. P. (1970) migration is prompted by variations in expected incomes between urban and rural areas, with the urban employment rate serving as an equilibrium force on such movement.

Chowdhury, Q., et al., (2004) found that communities in the haor region have higher incomes than other areas in Bangladesh. Chowdhury, R. B., & Moore, G. A. (2017) found one unique indigenous floating agriculture has sufficient potential to help farming communities in the flood-prone regions of Bangladesh to sustain their lives and livelihoods during floods and long-term inundation. This technique has the unique characteristic of providing a wide range of agricultural, environmental, economic, social, and cultural benefits that ultimately make it an environmentally sustainable, economically feasible, and socially viable practice. Rayhan, I., & Grote, U. (2007) indicated that during floods, landless or poor people incur informal debts to moneylenders, which in turn are accumulated through successive years of flooding, leaving a shadow of insolvency and liquidation over many vulnerable households. Rural-urban migration allows potentially vulnerable households to avoid a cycle of debt. Abedin, J., & Khatun, H. (2019) a vicious cycle of debt, resource loss, and poverty acts as a dynamic force leading to long-lasting impoverishment and vulnerability that limits haor-based communities' ability to prepare for, act against, and recover from subsequent floods and other disasters. They suggested that the government should formulate and implement a combined and effective policy for haor management and flood management accordingly to protect the lives and livelihoods of haor residents. Islam, M. S., et al., (2014) reported that the main employment is fishing (30.1%), followed by farming (12.9%), livestock husbandry (8.6%), and business (8.6%). They also found that more than half of the inhabitants in the haor region utilized hanging latrines (22.6% of them) and drank shallow tube well water (74.2%), with the remaining 17.2% of individuals choosing to drink water from rivers or streams. In this region, flash floods are a frequent occurrence brought on by extreme rainfall and climate change. As a result, people frequently suffer from diseases

such diarrhea, cholera, typhoid, fever, and cold during the flood (54.8%), after the flood (22.6%), and before the flood (17.2%) due to agricultural loss, housing damage, animal infections, and health issues.

Brouwer, R., et al., (2007) demonstrated that households with lower incomes and fewer access to useful natural resources are more susceptible to floods. Additionally, at greater risk exposure levels, disparity in income and asset distribution at the community level tends to be larger, suggesting that vulnerable families individually are also collectively more vulnerable. They discovered, somewhat ironically, that those who are most at danger from floods are also the least prepared, both in terms of ex ante home preparation and ex post communal flood aid. Rahman, S. U. (2014) identified several factors for vulnerability due to flooding, which include building infrastructure like roads and culverts as well as inadequate drainage brought on by crowded communities. In addition to fertile agricultural land and cattle, floods have also damaged physical infrastructures including homes, schools, sub-health posts, hand pumps, and culverts. Seeley, J. (2003) believed that in order to maintain their familial subsistence with what their adult members earn irregularly, the uthuli (sheltered after displacement by others without payment) and chukani (sheltered after displacement by others with payment) households had to endure intolerable economic hardship.

3. RESEARCH METHODOLOGY

The present study considered an integrated approach to identify role of immigrants on the socio-economic condition of the local community covering Jamalgar and Niamatpur Mouzas of the Tahirpur Upazila of Sunamganj District. Two participatory action research tools were applied to collect information the agricultural farmers (local community) and immigrant groups in the study area. These include literature review and secondary data analysis, Focus Group Discussion (FGD), Key Informant Interview (KII) and case study.

A comprehensive literature review was made to understand the basic theories, concepts and present liquidity of information on livelihood, socio-economic activities, migration landscape, and different physio-graphic, climatic and economic causes behind the immigrant community and their impact on the local community. Literatures were collected from different nationally and internationally published reports, scientific journals, and online sources. Secondary quantitative data were collected from different published and renowned database, scientific journals and online sources.

In order to address the objectives of the study, both primary and secondary data are used. The author collected the primary data through conducting a number of household surveys on agriculture farmers, FGD, KII and case studies on agriculture farmers, immigrant labors, immigrant practitioner and immigration community focusing on factors affecting interregional migration pattern. Secondary data were collected from different sources, such as: online portals of government institutions, reports and bulletins. Published and unpublished documents were extensively reviewed to justify relevant secondary information.

The study area included two mouzas (Niamatpur and Jamalgar) of Tahirpurupa zila in Sunamganj district, which are among the flash flood-prone areas in Bangladesh. Since all the mouzas in Tahirpur Upazila in a particular region have homogeneity in terms of disaster risk,

agricultural production system and local agricultural practices, two mouzas were randomly selected on the basis of dependence on the same haor, the Matian Haor.

In this step, primary data collected from farmers, and immigration labor, entrepreneurs, practitioners, and other immigrant communities in the study area through household surveys were analyzed using MS. Excel and STATISTICA statistical software packages to plot variability and correlation analysis. Based on these analyses, the study identified the roles that an immigrant community can play in the local agricultural community.

4. HYPOTHESIS TESTING

This study assumes some alternative hypotheses as follows:

- **Ha1:** Single type of community dominate the study area of highly vulnerable to climate-induced hazards
- **Ha2:** Socio-economic Condition of the local community is highly driven by Single Sector Income in the study area
- **Ha3:** Agriculture-driven communities dominate the study area because of being supportive geology, topography, land and soil type
- **Ha4:** Shifting in immigrant types with time and extent in the study area
- **Ha5:** Immigrants play key roles in the study area.

5. ESTIMATED RESULTS

5.1 Socio-Economic Condition of the Tahirpur Upazila

The ability to hire workers for domestic and agricultural tasks depends on possessing a home of one's own. Thus, the ratios of owned, rented, and rent-free dwellings in Jamalgar and Niamatpur were compared in the current study. In the Jamalgar and Niamatpur mouzas, which are located in the unions of Tahirpur and Dakshin Baradal, respectively, about 96% of the residents live in their homes. This is the largest proportion of persons in any household ownership arrangement. Similar to this, there is no discernible difference between these mouzas' percentages of rented and rent-free households. This finding suggests that the ability of the residents in both mouzas to hire labor is more or less comparable. The present study compared the sex ratio, total households, and male and female population between Jamalgar and Niamatpur mouzas. Although there is almost the same number of families overall, Niamatpur has a higher male-to-female ratio than Jamalgarh mouza. This finding suggests that Niamatpur is more equipped than Jamalgar mouza to address the labor shortfall in terms of human resources. It was discovered that the largest number of households in the Niamatpur mouza (about 21%) contain 8 people, compared to the maximum number of households in the Jamalgar mouza (about 19%). Additionally, it has been shown that Niamatpur has larger average households than Jamalgar mouza. All populations are classified into three distinct groups: those under the age of 15 are considered children, those between the ages of 16 and 55 are called youth, and those over the age of 56 are regarded the elderly. Analyses show that the youth population, particularly those aged 30-49, makes up the majority of the population in both of the investigated mouzas. Both mouzas have a balanced percentage of married men and women, according to the data. Females in both mouzas, however, are more likely to be widowed than males. However, only a small percentage of the male and female

populations are divorced or separated. It implies that people of the investigated mouzas have a lower demand for marriages with those who have migrated from outside of these mouzas. More residents in Jamalgar mouza (about 4,590) can be classified as illiterate because they are unable to write a letter. On the other hand, the Niamatpur mouza has been shown to have more male and female literates than the Jamalgar mouza. It has been observed that the Jamalgar mouza employs more men and women than the Niamatpur mouza. It has also been revealed that the primary means of subsistence in the research region is agriculture. In both mouzas, the majority of men are directly employed in agricultural work and activities. In the Jamalgar mouza, around 5% and 35% of the male and female population, respectively, are engaged in various occupations, but in the Niamatpur mouza, approximately 3% and 80% of the male and female population, respectively, are engaged in service. As a result of seasonal differences in the study regions, the residents of Niamatpur mouza (approximately 83% of the population, primarily females) choose a variety of occupations for their living.

Housing structures in the study area are not satisfactory. For example, total 90% of housing structures are kutchra and 4% are jhuprin the study area. Only 4% of total housing structures are found as pukka which have concrete structures. In the research region, it was discovered that in the Jamalgar mouza, over 90% of families used tube well water for drinking purposes, whereas only over 90% did so in the Niamatpur mouza. Due to the expensive cost of installing deep tube wells in these mouzas, residents often share tube wells with their neighbors or use other methods to gather drinking water, such as taps, ponds, etc. The sanitation facility is not satisfactory in the study area. Very few percentages of households get facilities of water-sealed sanitary latrines in both mouzas. Moreover, the maximum household in these mouzas has no sanitary facilities. The availability of electricity is a key indicator of a community's living standards. Approximately 23% of all houses in Jamalgar mouza and 29% of all households in Niamatpur mouza lack access to electricity, which is a poor proportion of the standard of life. Although the proportion of houses with access to electricity varies per mouza, each one still falls beneath the national coverage (53%). (Source: *Household and Population Census, 2011*).

5.2 Socio-Economic Condition of the Agriculture Farmer

The present study assessed the socio-economic condition of the agricultural farmers, which have been directly dependent on immigrant labor for harvesting rice for more than 10 years. A maximum of five (05) categories have been identified in the research locations. The first three (03) groups can be categorized as small farmers, marginal farmers (those with 0.51 to 1.0 acres of agricultural land), and the extremely poor (labor) (having 1.01 acres to 2.5 acres of agricultural land). The latter two (02) categories can be categorized as medium (farmers with agricultural land between 2.51 and 5 acres) and big (farmers with agricultural land larger than 2.5 acres). More farmers (approximately 55%) have been found to fall into the marginal category. Most of the sample farmers have a minimum of 20 years of experience. The present research reveals that the least home size is 2, 3, and 10-12 people, while the greatest household size (more than 20%) consists of 4-5 people. It has been found that maximum sample farmers are married while some are widowed. About 70% of the farmers was found to have primary education, followed by secondary and higher secondary education. About 18% of sample farmers are illiterate. Housing

structures in the study area are non-satisfactory. The floor of about 90% of houses is made of mud (Kacha), and the walls and roof of tin. In the study area, 98% of homes have access to electricity on average, which is a significant indication of the standard of life. Only 3% of homes do not have access to power. The majority of the sample farmers were found to have electric fans, and among them, around 16% had refrigerators and approximately 23% had televisions. Few sample farmers lack any electronics. It suggests that the majority of agricultural farmers are members of the middle class. It has also been found that more than 50% of the sample farmers are husbanded by natural resources, including ponds (about 13%), and river and tree gardens (about 46%). Moreover, the present research revealed that due to the presence of community health clinics in their communities, the majority of the sample farms only had minimal medical help. A small percentage of them (about 13%) can receive medical assistance at the Tahirpur Upazila hospital. However, this medical help usually becomes unavailable due to poor communication during the rainy season. The sample farmers in the study area lack appropriate social support. Approximately 35% of the sample's farmers are in contact with the local government, and 13% are with the local government, civil society, and medical professionals. The other farmers have no network with the government or civil society.

As a result of its susceptibility to flash floods, the study region is predominately low land type. Three cropping seasons occur in the area each year. These are the Kharif-I (16 March-15 July), Kharif-II (16 July-15 October), and Rabi seasons (16 October-15 March). The erratic nature of the alternate dry and rainy spells defines the Kharif-I. The main crops grown in areas are summer vegetables that are vulnerable to flash floods. Due to inequities in rainfall distribution, flooding depth, low solar radiation, and high temperatures and humidity, the Kharif-II season is not conducive to good yields. Farmers in flash flood-prone areas mostly grow transplanted Aman as a crop. However, due to the research area's relatively low land, this crop cannot be grown there. The Rabi season, on the other hand, benefits from high solar radiation, little humidity, and a warm climate. In the study area, boro, mustard, nut, and other robi-vegetables are the major plants throughout this season (Table 1). As a result of the low land, the sample farmers are only able to grow one type of crop on it. The household surveys and RRA with various farmer categories revealed several crop varieties in the study area. The most productive cultivable area is covered by BRRI-28, followed by BRRI-29 and different local varieties, including Guchi, Lakhai, Jhalak, and hybrid varieties.

Table 1: Major Cropping Pattern in the Study Area

Kharif-I	Kharif-II	Rabi	Cropping patterns (%)
Fallow	Fallow	Boro	90
Fallow	Fallow	Vegetables	3
Fallow	Fallow	Mustered	5
Fallow	Fallow	G. Nut	2

Source: Field survey, 2022

Furthermore, Aman and Boro (HYV) suffer the highest production losses in flash flood zones. The current study revealed that the harvesting time of local variety (130-145) is too long to prevent



flash flood risk (Table 2). Because of this, the Bangladesh Rice Research Institute (BRRI) created BRRI-28, a short-duration rice variety during the boro season. However, this rice type is highly susceptible to damage because of inadequate irrigation, temperature swings, and other climatic events. To prepare for flash floods and other extreme occurrences, the agricultural farmer cultivates a variety of rice types on each plot of land. For instance, they grow BRRI-28 for flash flood adaptation and BRRI-29 and other hybrid types for high output since they are highly productive. Because local varieties are more resilient than high-yielding and hybrid varieties, farmers also planted different local varieties on sections of their land to ensure production while adjusting to other harsh occurrences. Additionally, producers can save the seed rice from the local varieties for the following year's planting.

Table 2: Variety, Duration and Yield of Crops in the Study Area

Crop	Variety	Duration (days)
Aus (HYV)	BR2, BR26	135, 110
Aus (local)	Hashikolmi, Khashiabinni	135, 145
Aman (local)	Biroi, Gainja, Pajam	145, 135
Aman (HYV)	BR11, BRRI dhan30, BRRI dhan32, BRRI dhan34, BRRI dhan39, BRRI dhan41 and Pajam	140-145
Boro (local)	Jagli, Lafa, Tapi, Gochi, Borohabji	145
Boro (HYV)	BR14, BRRI dhan28, BRRI dhan29	140
Boro (hybrid)	Hira, Sonarbangla, Aloron, Jagoron, Raicher, Moyna	110
Jute	Kenaf, Mesta	150
Potato	Hira, Diamond, Kardinal, Lalpakri	85-90
Wheat	Protiva, Shatabdi, Sharouv, Gaurov	120-145
Sesame	Til-6	100-110
Mustard	Tori-7, BARI Mustard-9, BARI Mustard-14	60-70
Pulse	BAR Grasspea-1, Local improved	130-140
Ginger	Local (improved)	240-2500
Turmeric	Dimla, Shinduri	One year

Source: Field survey, 2022

Seed, labor, fertilizer, and insecticides are some of the inputs that come into play. According to the results of the current study, farmers greatly depend on agricultural labor to safeguard their goods against production and financial loss. According to the present study, BRRI-28 will experience the most production loss and financial loss for farmers without laborers, followed by BRRI-29, Guchi, Hira, Jhalak, and BR-74. The maximum farmers would lose around one metric ton (MT) of rice output per hectare and the related revenue in the absence of labor. The maximum quantity (2,500 kg) per hectare per acre of labor and seed is needed for boro rice crops. For Boro HYV and Boro, the highest amount (1,000 ml/ha) of liquid insecticides is required (Hybrid).

According to the farmers who responded, the boro rice crop requires the maximum number of laborers (180Nos) per hectare. However, during the last 15-20 years, the phenomenon of recruiting workers has altered. Additionally, agricultural growers had been hiring workers for more than 15 years from several areas, including northwest Bangladesh. Nevertheless, for 15 years, they have been engaging workers from the adjacent upazilas, even from the nearby mouzas. All farmers relied on such immigrant labor to varying degrees 15 years ago, whereas only roughly 70% of the sample farmers do so now.

6. ANALYSIS OF THE FINDINGS

6.1 Agriculture Dependent Local Community

Supportive landscape, hydro-climatic conditions, and different natural hazards and anthropogenic interventions (like interregional migration) can promote a society of diverse populations. These aspects result in developing one production system and the dependent lifestyle and demographic composition to establish in parallel to physical infrastructures, knowledge, financial mechanisms, and social networking through coping with different natural hazards (S. Oberg, 1995).

The present study has found that the study area belongs to the Sylhet Trough, which is a sub-basin of the Bengal Basin and consists of alluvial and deltaic sediments (MoWR, 2012). The deformation from the Indo-Burman ranges results in characterizing a series of north-trending folds. The study area has experienced the highest subsidence at a rate of 21 mm/y. These physiographic natures of the study area result in creating almost round-shaped tectonically depressed and marshy lands, locally called Haors, that are vulnerable to river floods during the monsoon, and flash floods during the pre-monsoon season each year. The study area is in the deep haor areas among the three haor categories (Foothill and Near Hill Haors, Floodplain Area Haors, and Deeply Flooded Haors) because the maximum proportion is under the lowland and very lowland among the five land type classes: F0 (High land), F1 (Medium highland), F2 (Medium lowland), F3 (Lowland) and F4 (Very lowland). The conditions in the study area play a supporting role in improving agricultural production (Laekemariam F. et al., 2016; Abate A., 2014; Haor Master Plan, 2012). It is, thus, suggested that the particular physiographic nature and hydro-climatic conditions are highly supportive for an agro-based production system, which is bifurcated by a Robi-crop production system for six seasons (November-April) and fisheries production system for another six seasons (May-October) every year.

Therefore, the present study inferred that an agriculture-dependent community dominates the study area in which all of the socio-economic activities transformed into their capital based on the agro-based production system.

6.2 Socio-Economic Condition

The British Department for International Development (DFID) has developed a 'Sustainable Livelihood Framework' (SLF), one of the most widely used livelihoods frameworks in development practice, by adapting a version of Chambers Conway's definition of livelihoods. The approach is based on the belief that people need a lot of capital to achieve positive livelihood outcomes. Therefore, the SLF has identified five types of capital to build livelihoods, including

human capital, social capital, natural capital, physical capital, and financial capital (DFID, 2000). However, the present study could not identify natural capital due to a lack of data in the Population and Household Census (2011). In addition, this study added living standards as an indicator of sustainable livelihoods. This study shows that socio-economic conditions in the two mouzas are moderate across all livelihood indicators. According to the laws of migration in regional economics (S. Oberg, 1995; Alonso, 1976; Quigley, 1972; Wilkinson, 1967; Thomas, 1941), the current survey considers the study area to be a moderate wage condition that can play as the pull factor (Jussibaliyeva, A. K. et al., 2021) for interregional labor migration from others regions in Bangladesh (Figure 2).

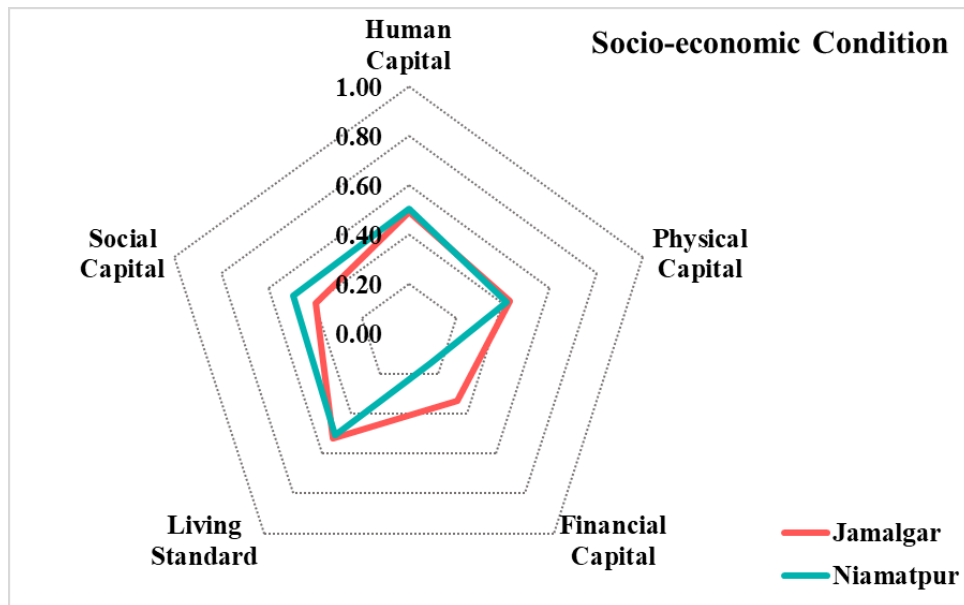


Figure: 2
Source: Field Visit, 2022

6.3 Agricultural Impact on Socio-Economic Condition

Agriculture, including agricultural wage labor and self-employed farming, provided most of the jobs in rural areas occupying more than 54.5 percent of the rural workforce and employing a significantly higher share of women (Kabir, Md. Jahangir et al., 2020; DAE, 2020; World Bank, 2016). Human is one of the valuable capitals, although it is not self-evident. In our society, according to the human capital theory, the length of their education and experience in their working life until the age of 45-65 can promote an individual to increase the magnitude of human capital (S. Oberg, 1995). Some argue that changes in proportions of older and experienced persons over time would partly change and indirectly influence the speed of economic restructuring and thus interregional migration (Klein 1992; Malmberg 1992). They argue that older people are less attractive in the labor market because their knowledge is not up to date with modern technology, and they produce much less on average in the physical hard work. However, other studies

suggested that both attitudes of paying more for the experienced and knowledgeable older laborers and unwillingness to employ new laborers and train them for high productivity will lower the migration rates for the aged-experienced laborers. The present study found that an age group of 30-49 years belonging to the youth group dominates the agricultural workforce in the study area. This group has experience and enthusiasm for up-to-date knowledge of modern technologies to produce more than average in the physical hard work.

Some literature argues that accumulated experience is the effective investment in a traditional environment that is static in technology and relative prices in low-income countries (like Bangladesh) when the decision-making environment is static (W. Huffman and P. Orazem, 2004; Huffman, W. E., 1988; Becker, G., 1993; Schultz, T.W., 1972). The present study found that maximum farmers mainly depend on collective knowledge, among which about 18% of sample farmers are illiterate, for their production system (agriculture) in the study area. However, different government and non-government organizations (including World Vision, BRAC, ASA, etc.) have taken some training initiatives to raise resilience against climate-induced hazards.

Furthermore, the magnitude of human capital depends on how men and women allocate their time in their occupations (W. Huffman and P. Orazem, 2004). This study has found that occupational diversity in women is higher than in the case of men. Men are mainly involved in the agriculture production system, whereas women are equivalently engaged in agriculture and other sectoral services in the study area. The regression analysis showed that human capital is highly dependent on the involvement of men and women in the agriculture production system (**Figure: 3- A1 & A2**). And this capital has been increased by about 0.007% and 0.006% with an increasing one person of men and women involvement. A. Bashir et al. (2018) have found a similar relationship in an agro-based economy in Indonesia, suggesting that increasing agriculture involvement will push the human capital significantly. These findings are also in line with the result of the study by Bleakley (2013); and Djomo & Sikod (2012) (referred by Bashir et al., 2018).

HIES derived key welfare measures between 2000 and 2010 showed that the share of households with rural farm-sourced income (income from all crops and horticulture, livestock, fisheries, and agricultural wages) increased marginally through the decade. World Bank (2016) reported that agriculture production made a noticeable contribution to income growth for poor and vulnerable households, contributing the largest share of income gains for the poor. However, agricultural income is small for the non-poor households, and non-agricultural income actually declined (World Bank, 2016). It is, therefore, assumed that financial capital is highly responsive to agricultural involvement in the marginalized rural economy. Similarly, the present study found that the higher the male and female involvement in agriculture, the higher the magnitude of financial capital (**Figure: 3- B1 & B2**). This positive relationship depicts that male and female involvement in agriculture is highly correlated with financial capital.

Increasing male involvement in agriculture have slightly negative relations with the magnitude of physical capital in the study area. However, female participation cannot affect the physical capital in the study area (**Figure: 3- C1 & C2**). It is the reverse relationship of the male and female involvement in agriculture with the financial capital. It can be expected that financial capital of involving in agriculture flows in different ways besides the physical capital. It will be happened if

the farmer faces multiple challenges with his/her financial resources. Several past studies reported that the study area is highly vulnerable to multiple-climate-induced hazards, input management (like agricultural labor) for the agriculture production system, and also post-harvesting loss management actions (Pavel, T. et al., 2022; Rahman, S. T., & Monjur-Ul-Haider, M., 2020; Abedin, J., & Khatun, H., 2019; MoWR, 2012). For this reason, the financial capital earned by agriculture cannot transform into the physical capital of these agricultural farmers. These farmers need more financial options to increase their resilience in their physical capital from various sources, like micro-credit loans from different NGOs and other services (like involvement in industries).

On the other hand, rapid population change with new demands on physical infrastructure, in the short and medium run, is characteristic of interregional migration to a certain extent (Öberg, S.,1995.). Some agriculture farmers argued that the decreasing differences in the physical infrastructure between the agricultural farmers and immigration laborers has decreased the interregional migration rate of these laborers for about fifteen (15) years.

The current study also discovered that, even though female participation in agriculture does not affect the living standards of those in the study region who depend on it for a living, growing agricultural engagement may result in a decrease in the size of living standards (**Figure: 3- D1 & D2**). It is also claimed that this association follows the link with physical capital rather than the relationship between male and female engagement in agriculture with financial capital. As a result, the money made from agriculture cannot significantly raise the standard of life because of using in other ways than providing drinking water, sanitary facilities, and other electrical devices. These farmers require more financial choices, such as microcredit loans from multiple providers and other services, to raise their financial flexibility and living standards.

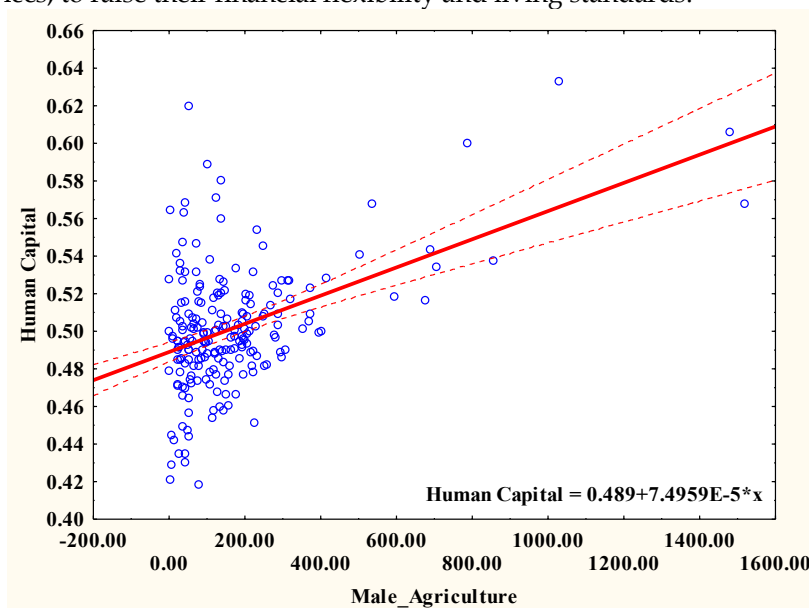


Figure: 3-A1, Relationship between Human Capital and Agriculture Involvement (Male)

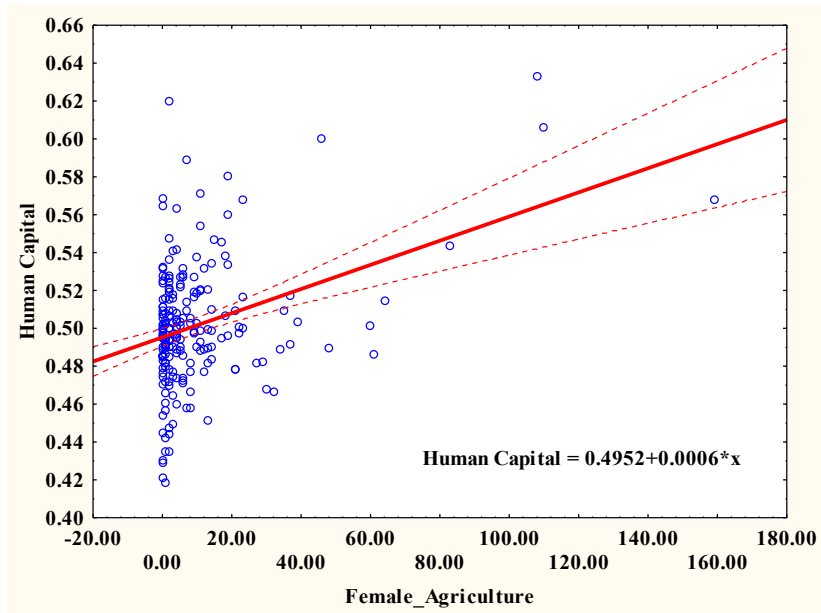


Figure: 3-A2, Relationship between Human Capital and Agriculture Involvement (Female)

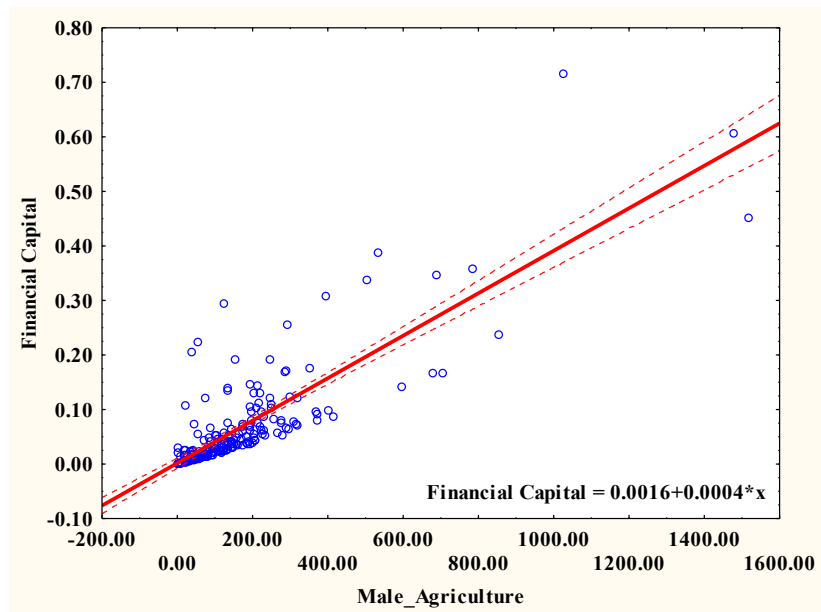


Figure: 3-B1, Relationship between Financial Capital and Agriculture Involvement (Male)

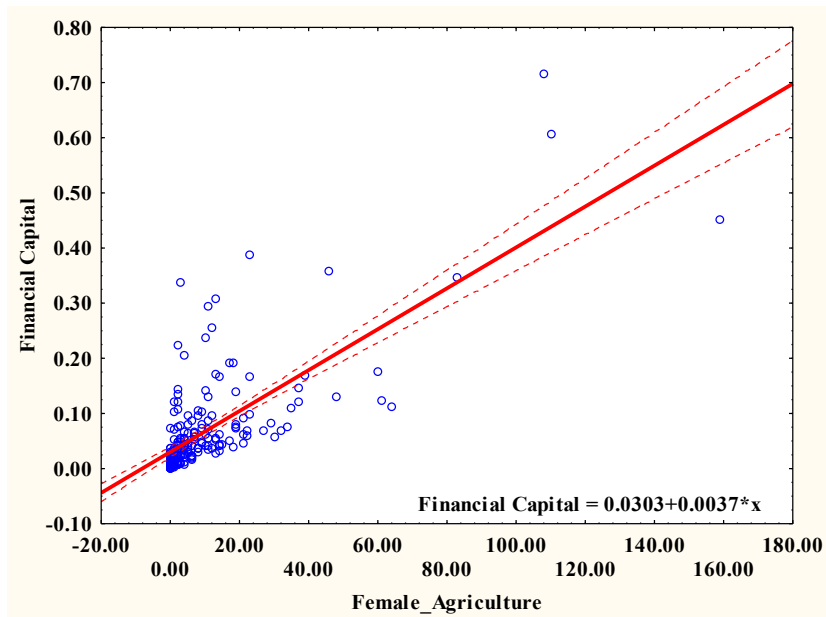


Figure: 3-B2, Relationship between Financial Capital and Agriculture Involvement (Female)

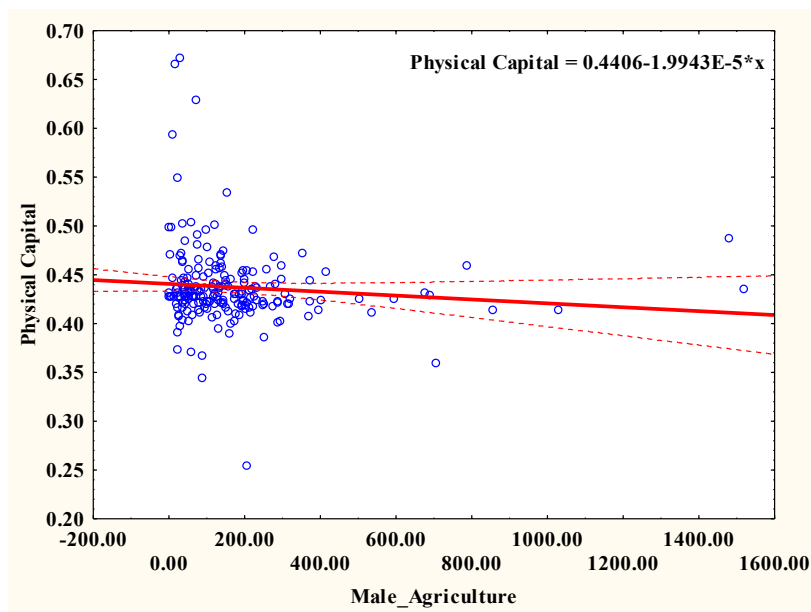


Figure: 3-C1, Relationship between Physical Capital and Agricultural Development (Male)

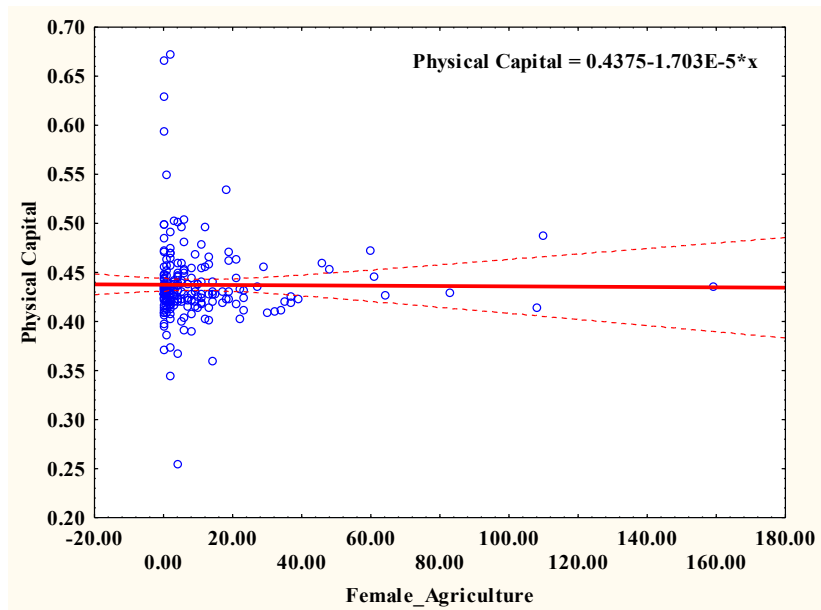


Figure: 3-C2, Relationship between Physical Capital and Agricultural Development (Female)

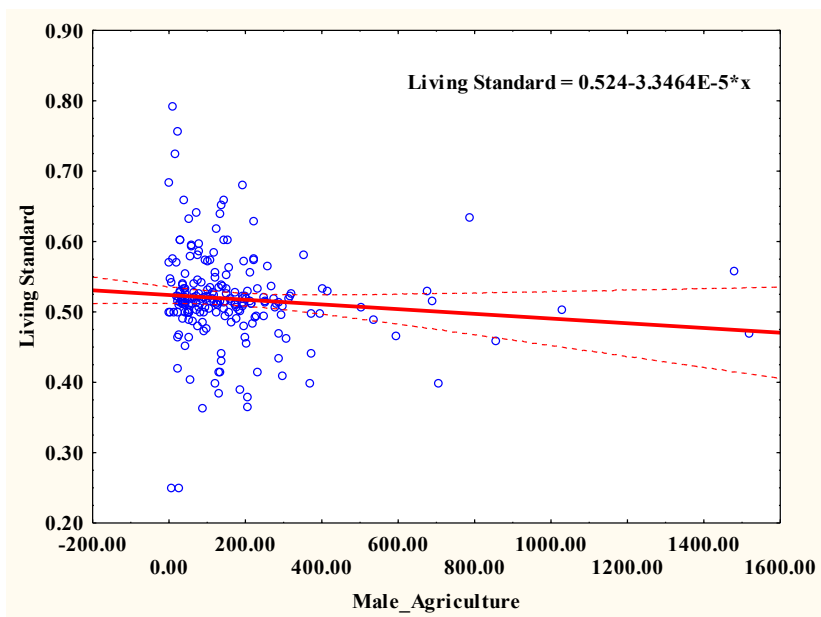


Figure: 3-D1, Relationship between living standard and agricultural development (Male)

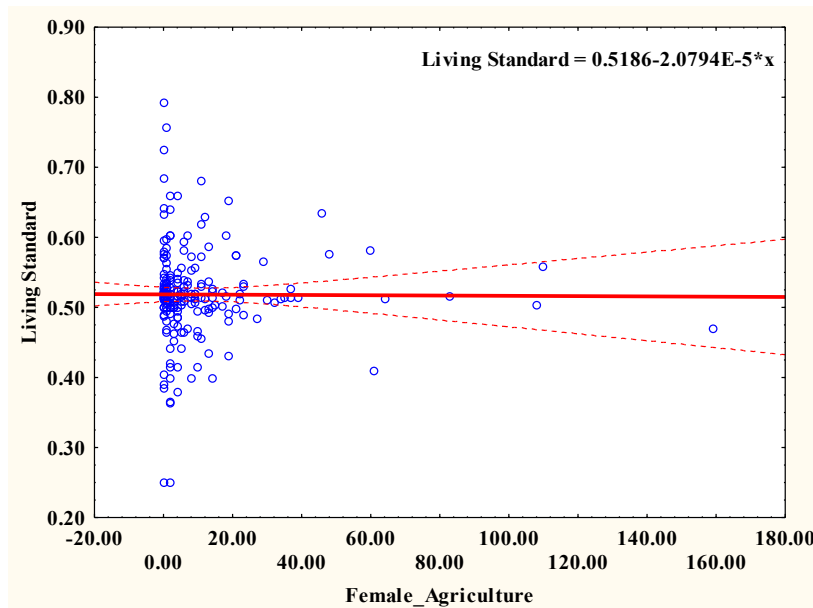


Figure: 3-D2, Relationship between living standard and agricultural development (Female)

7. DISCUSSION

7.1 Immigrant Labor and Agriculture Farmer Community

Haor area is mainly suitable for Boro rice cultivation because of its physiographic nature. Although the Boro area under haor was higher (36% of the total Boro area) in Sunamganj, rice cultivation is frequently affected by flash floods due to heavy rainfalls and onrush of water from the upstream Meghalaya hills in India (Kabir, Md. Jahangir et al., 2020). Since Boro rice is the primary food for the haor areas, the flash flood causes a threat to the food security of the haor people. Kabir, Md. Jahangir et al. (2020) supposed that this condition promotes the agricultural farmers in the areas to employ a number of migrant laborers to expedite rice harvesting to escape unexpected crop loss due to flash floods. They observed that wage workers migrated to Sunmganj from both haor and non-haor areas Faridpur, Tangail, Netrakona, Sirajganj, Pabna, Mymensingh, Sylhet, and Habiganj (Kabir, Md. Jahangir, et al., 2020; DAE, 2020). But the present study found two scenarios in interregional labor migration patterns in view of the annual dimension. For example, about 15 years ago, the local agricultural farmers in the study area could hire labor from Dhaka, Faridpur, Krishorganj, Madaripur, Mymensingh, Munsiganj, Netrokona, and Tangail, but the source districts of immigrant labor have been decreasing for fifteen (15) years. They are now hiring these labors from nearby mouzas, unions, Upazilas, and even districts (like Netrokona). To cope with this situation, some immigrant laborers come by suspending stone collection from the Jadukata River. The local Government usually helps them to stop this collection for harvesting boro-rice during April-May. In recent years, mechanization is promoting the agricultural farmers to harvest without losing a significant amount of boro-rice against flash flood. The present study estimated that maximum farmers would lose about one metric ton (MT) of rice production per

hectare and associated income (about 44,912 BDT) in case of without labor. This condition could result in decreasing capital flows to human capital, physical capital, and even the living standard attributes of an agricultural farmer. The local farmer community expressed that an equilibrium condition of the wage difference between them and the immigrant labor decreasing the interregional migration of these wage labor. This condition supports the basic law of migration in regional economics that equilibrium in wage difference can decrease the interregional migration in the long run. In this theory, capital flows toward the low-wage region, and labor flows toward the high-wage region. But capital in the study area flows from the high-wage-households to the low-wage-households during the present condition. In addition, mechanization in boro-rice harvesting needs more financial capital than some laborers demand (Islam and AKMS, 2018). The present study, thus, suggested that this results in more liquid financial capital that cannot be transformed considerably into physical capital and living standard attributes of the agricultural farmers in the study area. Because the financial capital significantly flows toward boro-rice cultivation and harvesting management, climate change adaptation, and disaster risk reduction options. It is also mentioned that women of the local agriculture farmer community never get married to immigrant labor. Moreover, the overall approach of that local community is satisfactory for the immigrant labor community.

7.2 Other Immigrant Communities and Local Community

The above discussion indicated that financial capital highly flows within the study area. Moreover, this area has high natural significance because of the natural beauty of haors (mainly the TanguarHaor, declared as the Ramsar Site, which attracts many national and international tourists. Many tourism activities have been implemented in the study area. Therefore, this area can be considered one of the high-wage regions that can attract other communities for interregional migration. Shubuj Chandra Borman is one of the immigrant entrepreneurs who immigrated to this region from the Gazipur District, and became an entrepreneur here. In addition, Muhammad Ali migrated to this region to practice as a homeopathy doctor. The immigrant entrepreneurs, like Shubuj Chandra Borman and Muhammad Ali, were reported to get married to the local community. It has also been reported that the immigrant entrepreneur can readily be involved with the local community in societal activities than an immigrant laborer can. There is no critical societal conflict between the local community and the immigrant labor, immigrant entrepreneur, and even immigrant practitioners.

Nevertheless, interregional migration turns into conflict when entire communities are completely migrated. For example, an entire community immigrated into the study area from the Bhoirab Upazila of the Kishorganj District. They were first involved as the labor for the local farms. But they then decided that this place was more fertile than where they had previously lived, so they relocated here to farm by themselves. That was not well received by the local community in the area. This immigrant population has given rise to some critical societal conflicts. But now, they have managed to comprehend one another.

8. CONCLUSION AND IMPLICATIONS

Interregional migration of different level of immigrants plays an important role in the socio-economic aspects of local communities, particularly the agriculture community, in rural areas and

is expected to grow in size, complexity, and diversity. As immigrant labor and capital flows can be shifted as economic activity, the restructuring of local infrastructure and economic policies will affect the source region (immigration from the region) and destination region (immigration to the region, Tahirpur Upazila) continue to improve. These changing flows play a role in changing the socio-economic landscape of the Tahirpur Upazila. From illiterate to highly educated and from youth to adults can migrate to maximize the income opportunities that high-income communities create, supported by the destination social network.

The study area can be considered one of the high-income areas that can attract other communities for inter-regional migration. Financial capital flows in large quantities within the study area. In addition, this area is of high natural importance due to the natural beauty of the Haor, which attracts a number of domestic and international tourists. However, the major production system, Boro-cultivation, under Haor areas in Sunamganj is highly affected by flash floods. This situation has led farmers to hire numbers of migrant workers to harvest rice earlier and avoid unexpected crop losses from flash floods. However, the present study saw a paradigm shift in the way the farmer employs these wage workers for the 15 years. The tendency for these workers to migrate across regions from the source districts has been declining for 15 years. It can reduce capital flows in the characteristics of human capital, physical capital, and even the living standard of farmers. Limited wage gap between them and migrant workers is, therefore, expected to lead to a reduction in interregional migration of these wage workers. However, as it stands, capital in the study area flows from high-income households to low-income households. In addition, mechanization in boro-rice harvesting requires more financial capital than some labors need. The study, therefore, suggests that the increased capital flows within the region as a result of the downward trend in immigrant workers and the mechanization have led to more liquid financial capital that cannot be largely translated into physical capital, and agricultural living standard attributes in the study area.

This area also attracts some communities to migrate here as entrepreneurs, and some as practitioners (homeopathy, etc.). In addition to them, the area has also attracted entire communities who migrated to live here. However, social conflicts can vary according to the size and occupation of immigrant communities. Migrant entrepreneurs can more easily engage with local communities in community activities than migrant workers. On the other hand, studies have also reported that migration between regions become conflict when entire communities are completely migrated.

9. RECOMMENDATION AND FUTURE DIRECTION

Like immigrant labor, other immigrant communities are directly related to and dependent on various socio-cultural and normative factors that determine their role and status in local agricultural communities. Migration can therefore be seen as a self-help strategy for poverty reduction and alleviation and should be properly recognized and used appropriately for the sustainable development of both source and destination regions.

This paper marks a paradigm shift of the process of hiring the migrant workers for over 15 years. Especially these farmers who have to spend more money and energy to harvest the boro rice within the stipulated period. Therefore, local government authorities should ensure easy and

affordable transport of migrant workers, improve their housing and stay, health protection networks, and a good relationship between harvest, price, and labor wages. Planning well in advance of the term is recommended. Authorities should work with NGOs and other organizations working with marginalized groups to extend basic service provision to migrant workers by adopting a “user pays” approach. To be successful, the immigrant community, especially social networks of workers, entrepreneurs, and other practitioners, must be involved in decision-making.

Moreover, the Bangladesh census does not question population migration, despite its significant demographic, social, and economic impact. Without the 'place of last residence' question with duration, the 'place of birth' question asked in the BBS follow-up seems meaningless for records of non-permanent immigrants. Similarly, survey questions about 'household types of institutions' (BBS 1992b: 7) should include boarding houses or 'mess' on a priority basis. Labor force surveys conducted by the BBS must include questions on 'place of birth', 'current place of residence' and 'year of immigration'. Also, the census should include “workplace” questions to identify temporary immigrants. Since people in Bangladesh work multiple jobs, it may be appropriate to ask follow-up questions about how they use their time at their main job where he spends 6 hours to 8 hours in a row.

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