

Original Research Article

**Agricultural Transformation Due to Rural-Urban Migration:
An Analysis of the Situation in Assam**

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ABSTRACT

The process of urbanisation, particularly the labour migration from rural to urban areas has become one of the significant reasons for agricultural transformation. The migrants to urban areas have played an essential role in the decline of agriculture. As the youth leave the rural places for other destinations, those left behind are expected to contribute to the development of agriculture in particular. Like in other states of India, the agricultural sector plays an important role in the state economy of Assam. But in modern times, the people of Assam do not see agriculture as their career as the agricultural system in Assam is mainly based on traditional farming techniques even in the 21st century, which involves a lot of physical and mental stress to get the value of their hard work. Hence, people move to urban areas to improve their quality of life. The massive rural to urban migration has impacted the agricultural transformation in this region. This paper attempts to provide a qualitative analysis of how rural-urban migration has affected the agricultural transformation, particularly in Assam.

Keywords: Rural-urban migration, urbanisation, transformation, agriculture, Assam

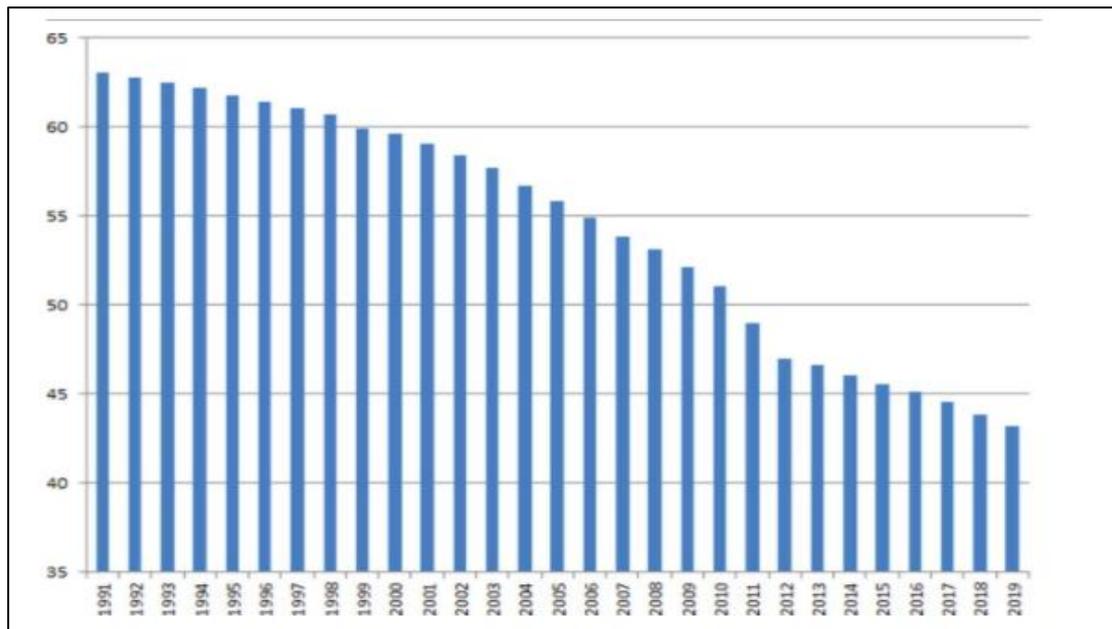
1. INTRODUCTION

Urbanisation, particularly the migration of people to cities has increased at an exceptional rate, particularly in developing countries. A significant aspect of the urbanisation process can be seen in the pattern of changes in rural areas. The industrialisation process has broadened the difference between rural and urban areas.

The urbanisation process, involving a transformation from traditional rural economies to modern industrial ones and dynamic absorption of the population in the urban areas is immensely pervasive in India, the second-most populous country in the world, after China. It has shown more than 8 per cent growth in GDP over the past years (Kalamkar, 2009). The manner of urbanisation has been perceived as a substantial element of economic progress. India has common development patterns with some of the fast-developing countries in Asia. Per capita income is higher in urban areas in comparison to rural areas. In urban areas, the income depends on non-agricultural activities. The urban opportunities attract rural people through migration. The use of land for urban development has increased, although it has little impact on total crop production.

Modernisation and commercialisation of agriculture increased the necessity for non-crop goods and services. Urban sprawl, a growing population of educated youth, social assistance policies and factors such as poverty, unemployment, frequent natural calamities, like drought, flood etc., pushed the rural people to urban places chasing after copious non-farm occupations to enhance their earnings.

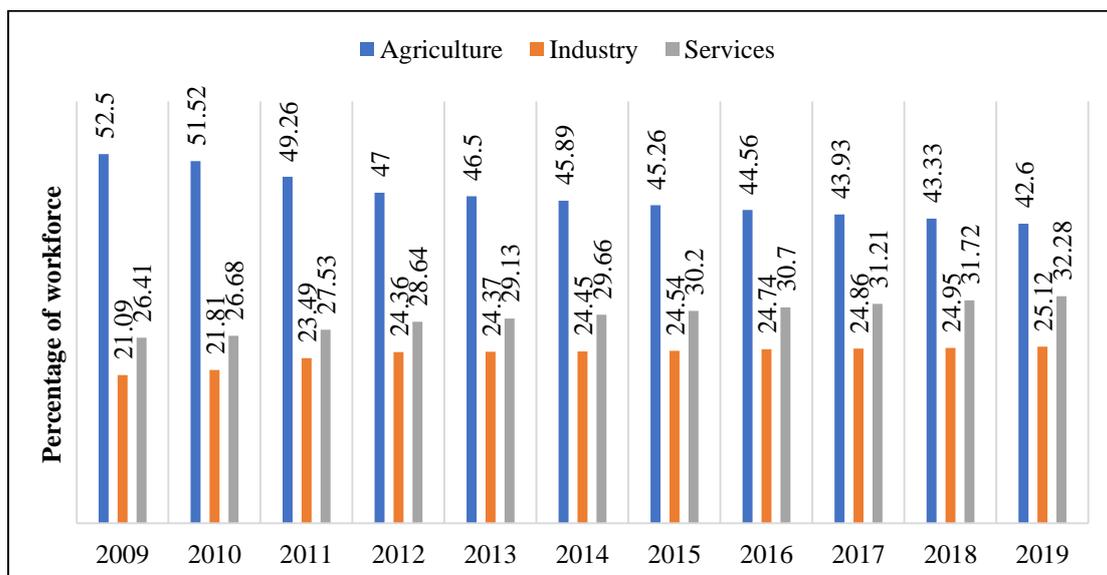
Agriculture is the keystone of the Indian economy and the accelerated urbanisation and rural-urban migration have led farmers, especially the young, to forsake agricultural cultivation. Therefore, examining the correlation between rural-urban migration and agricultural transformation in the framework of urbanisation has become a significant research topic in developing countries to enhance understanding of rural-urban development and advocate rural reconstruction. From 1991 to 2019, the percentage of employability rate in agriculture dropped from 63 per cent to 43 per cent (Figure 1).



Source: International Labour Organisation, 2021

Figure 1: Employability rate in the agriculture sector in India

Industrialisation led to the movement of the workforce from primary sectors of the economy. A similar situation could be noticed all over India. The percentage of people employed in the agriculture sector has decreased from 52.5 percent in 2009 to 42.6 per cent in 2019 (Figure 2).



Source: Statista, 2021

Figure 2: Percentage of Distribution of Workforce from 2009-2019 in India

Effect of out-migration on Agriculture

Rural-urban migration impacts both rural and urban communities. The rural community is affected due to the movement of youth, who are expected to partake in the development of agriculture in particular and the community in general, from the rural areas to the cities (Chand et al., 2017). It has led to a decline in agricultural production (FICCI, 2015). However, Taylor, Rozelle and De Brauw (2003) opine that out-migration also has a positive impact on agriculture. For example, diminution in yield may decrease, but workers may be reimbursed (partially) or labour could be hired for farming. A majority of the agricultural employees in emerging countries are senior citizens and women. However, Deshingkar (2004) noted that loss of labour through migration may or may not curtail agricultural production, remittance may or may not increase access to assets by alleviating credit constraints: this, in turn, may or may not increase agricultural production and household incomes.

The Scenario of Agricultural Transformation in Assam

Assam is one of the North-Eastern states which shares its environs with seven states, i.e., Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal and has two international neighbours, i.e., Bangladesh and Bhutan. Assam accounts for just 2.58 percent of India's total population (Government of India, 2011). It has a heterogeneous population contributing to the socio-cultural and ethnic diversity of the region (Economic Survey Assam, 2017-18). The rural-urban divide in the population is quite significant, with more than 86 percent of the population living in the rural areas, and just around 14 percent of the population living in the urban areas. Clearly, the percentage of the state's rural population is higher compared to other states. It is even higher than the national average, which is around 69 percent.

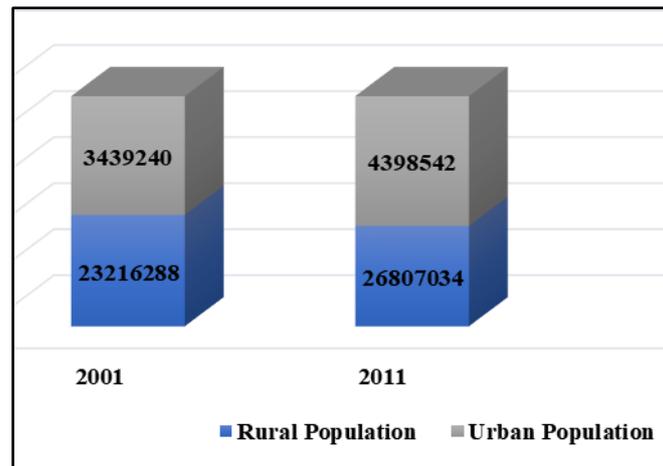
Table 1: Assam at a Glance

Description	2011
Population	31,205,576
Male	15,939,443
Female	15,266,133
Decadal Population Growth (2001-2011) in Percentage	17.07
Sex Ratio	958
Density/Km ²	398
Area/Km ²	78,438
Literacy (In percentage)	72.19
Male	77.85
Female	66.27
Urban Population (In percentage)	14.09
Male	51.39
Female	48.61
Rural Population (In percentage)	85.90
Male	51.03
Female	48.97

Source: Census of India, 2011

Assam has an agro-based economy. Earlier, more than 70 percent of the state's population was dependent on the agriculture sector for its employment. Assam has a rich and distinct soil, which contributes significantly to agriculture and agricultural productivity (Government of Assam, 2018). But, due to unpredictable weather conditions, eccentric rainfall and various factors such as floods, soil erosion etc., agricultural productivity has been suffering. The percentage of the rural population in the state decreased from 87 percent in 2001 to 86 per cent in 2011. During the same period (2001-2011), out of the total rural population, 1,36,78,989 were males and 31,28,045 were females whereas, in urban areas, 22,60,454 were males, and 21,38,088 were females. Figure 3 shows rapid growth of population in urban areas of Assam which saw a decadal growth of 27.89 percent and whereas rural areas saw the decadal growth of 15.47 percent during the period of 2001-2011. It indicates that along with

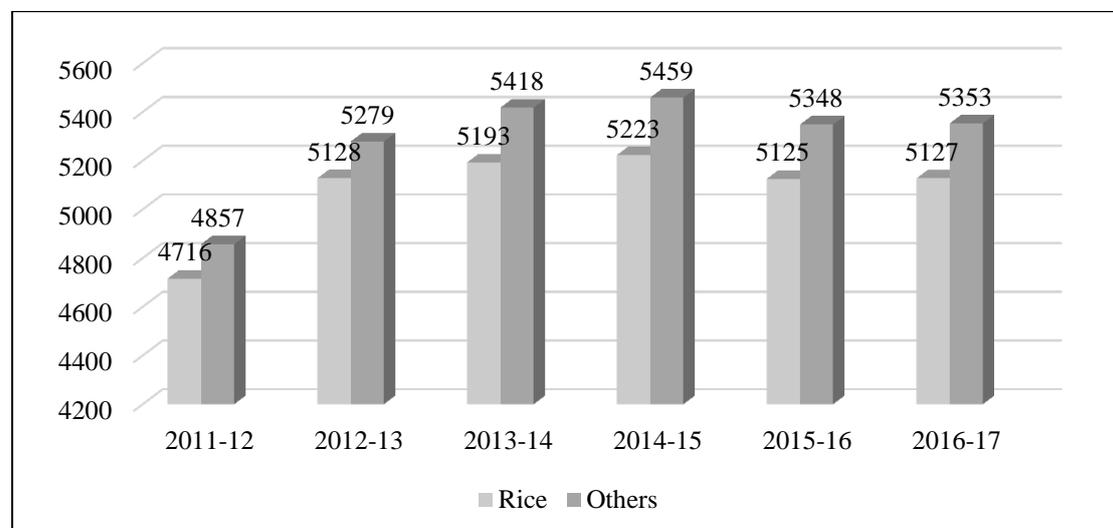
population growth, rural-urban migration has also impacted the population in urban areas.



Source: Government of India, 2011

Figure 3: Rural and Urban Population in Assam

It is essential to understand the variations in the levels of production of food grains and rice in Assam over the years. Figure 4 shows production of food grains in Assam from 2011 to 2017. The total food grains production in the state had increased in 2014-2015 compared to the production in 2011-12. The figure also reveals that the total food grain production in the state was the highest in 2014-15. However, there was a decline in 2015-16 and increased again in 2016-2017.



Source: Government of Assam, 2018

Figure 4: Production of Food Grains in Assam ('000 tonnes)

2. METHODOLOGY

The study is based on secondary data, which was collected from varied sources such as government publications, reports, research papers and websites. The entire data on inhabitants and agricultural production has been obtained from the Government of Assam, published by the Directorate of Economics and Statistics, Government of India and various other sites.

2.1. Understanding Migration-Agriculture Linkages

The Migration-Agriculture nexus has historical significance. Historically people migrated from one place to another in search of better arable land for cultivation. However, things started to change over the years with the advent of urbanisation and industrialisation. Awuondo (1990) argues that urbanisation is harming the agriculture pattern throughout the world. Remittance earned from non-agricultural sources by the people who migrated to the urban centres (Deshingkar, 2004) adversely affects the thought process of youth involved in agricultural practices for sustaining their day-to-day life. In many South-Asian countries, remittance earned in urban employment has surpassed the income from agriculture, mainly due to underlying structural problems that exist in the agricultural sector. Robson and Berkes (2011) argue that migration of people from rural to urban areas leads to decline in the working population of rural areas, which in turn results in abandonment of farmlands. This in turn has triggered deterioration of ecological landscapes and has weakened the agricultural practices.

2.2. Sustainable Agriculture and Rural-Urban Migration in Assam

The concept of sustainable agriculture has become an important topic of discussion among the nations in the present scenario to restrain the influences of climate variability, encourage sound organic matter management and enhance productive capacity (Grau & Aide, 2007). Although, there is an increase in population growth, the engagement of rural people in agricultural production has become lesser in Assam. The increasing need for food production due to population growth has become an enormous challenge creating pressure on all-natural deposits including scanty agricultural lands, forests, water and the ambience (Goyari, 2005). Different studies have indicated that agriculture may not be able to generate the essential food grains needed to support the

swelling world population in the future. The agricultural structure has to be more gratifying, fertile, and less extravagant to fulfil the increasing craving for food and other necessities (The World Bank, 2012). The state of Assam is using traditional methods or technology for cultivation or farming even in the 21st century. However, the rampant use of fertilisers and pesticides is becoming increasingly common in the state of Assam to meet the demands for food. Although these chemicals and modern techniques help in increasing productivity, this is accompanied by hidden environmental penalties such as climate change and environmental degradation.

The groundwater level is decreasing because of the over-pumping of water for agricultural activities. Assam, as a flood-prone area, is facing serious challenges due to soil erosion which not only affects the farmers but also makes the land unsuitable for cultivation (Bhuyan, 1998). The objective of agricultural production is not only to furnish good foodstuff, emolument and chores but also to address an emcee of ambient problems (Gupta et al., 2021). To deal with the present and expected future issues in agriculture, there is a need to focus on more sustainable frames and strategies of agriculture with exhaustive policies. In the state of Assam, the migration issue became one of the most important issues. Not only rural to urban migration, but people of Assam move towards the other states of India in search for higher wages. Within a few years, the southern states of India became one of the major destinations for rural youth of Assam because of the higher wages compared to Assam. If migration has a positive impact with greater urbanisation and employment opportunities for the migrants, it also has negative impacts on both rural and urban areas. It is argued that migration reduces local human capital and also impacts the number of people who engage in agricultural production. This usually results in loss of traditional practices and ethnobiological knowledge systems (Grau & Aide, 2007). In Assam, the rapidly increasing urbanisation process has had a huge impact on environmental degradation. In fact, with time, the agricultural land is also decreasing as the land situated near urban areas is being incorporated in the process of industrial development. This has ultimately led to the mismanagement of natural resources and created barriers to sustainable development along with agriculture.

3. RESULT AND DISCUSSION

In the state of Assam, both push and pull factors are influencing people for rural-urban migration, which has affected the involvement of rural people in agriculture. Various factors have contributed to the decline in people's engagement in agriculture, which has decreased over the years. However, migration remains the central factor that has contributed to a great extent. Having said that, there are other factors that slowly but steadily discourage people residing in the rural areas to get involved in the agricultural activities as a source of employment.

Urbanisation has been identified as an essential component of economic development in Assam (Das & Sharma, 2018). It helps in the progress of the industrialised sectors, and it attracts labourers from different places. However, with massive migration from bucolic to downtown expanse, there has been a change in acreage infliction. Land transmutation to urban practices is also increasing. Rural migration has led to changes in rural society and culture. Assam has faced multiple challenges in food sufficiency with a booming population growth. The increased population has resulted in a decreasing trend in per capita accessibility of forest and agronomical land (Sharma, 2019).

One of the key push factors which has led to the massive migration of people from rural to urban areas remains the flood. The climate of Assam is dank, with a semiarid nature, having cosy clammy summers and cool withered winters. Assam has a line-up of climatic conditions and receives a good amount of rainfall throughout the year because of its distinctive topographical environment. As per the report published by the Government of Assam in 2018, the state typically receives 2 percent of rain in the winter period (January-February), 25 percent during the summer period, 65 per cent in monsoon season (June-September), and 7 per cent in post-monsoon season (October-December). Assam is prone to floods, and at times, it also experiences desertification in the absence of a good monsoon. Therefore, although the state has high natural ability and suitability for agricultural production, over the years, it has faced major crises due to changing climatic conditions.

The climate change in the state of Assam has forced many people from the flood prone places to move towards cities in search of better livelihood options (Das, 2019).

Every year, Assam faces heavy annual floods between May and August in the valley of the Brahmaputra river. People who live in flood-prone areas, not only lose their homes, family members but farmers face huge losses in agriculture. Goyari (2005) argues that the central hindrance to the progress of the agricultural sector in Assam is the occurrence of floods every year due to heavy rainfall and an increase in the water level of the river Brahmaputra which originates from the Tibet Autonomous Region in China. The situation has further aggravated with the ongoing border dispute with China, which has resulted in the denial of crucial hydrological data of the river Brahmaputra. The reports of the construction of dams at the upper streams have further raised fear of being devastated by sudden floods caused by the collapse of such dams (Deka, 2021). In an interview given to BBC, the then state's finance minister stated, "earlier the frequency of floods in Assam was twice in a year, in the recent years we are experiencing floods four times a year". He further added that Assam is witnessing floods even without having rainfall in the upper stream of the said river" (Khadka, 2017). These yearly occurrences of floods have resulted in washing away a number of villages in Assam, leading to a large number of people's displacement every year. Table 2 shows the number of villages erased in Assam as result of devastating flood of 2013.

Table 2: Number of erased villages in Assam

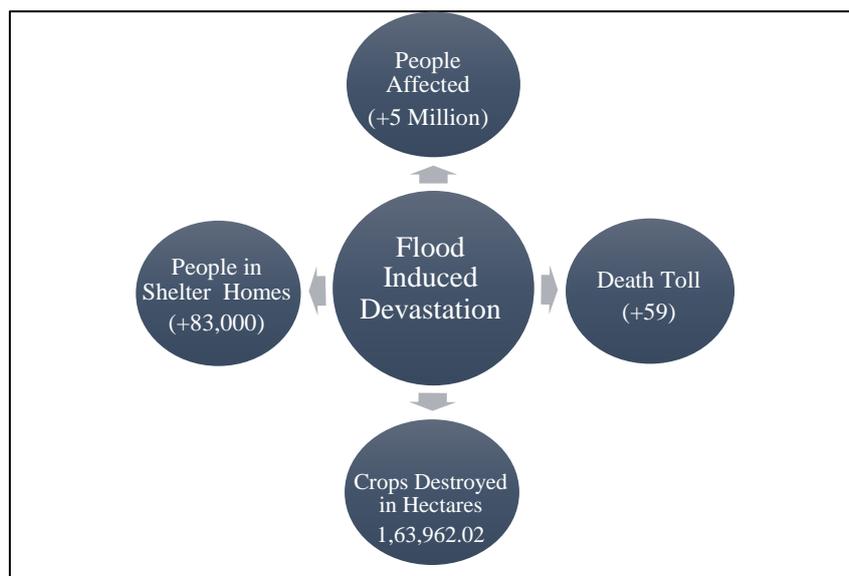
District	Number of "erased villages"
Dhubri	71
Jorhat	2
Kamrup	14
Goalpara	75
Chars (Riverine areas)	181

Source: Coelho, 2013

As per the official data in 2019, floods caused by the river Brahmaputra affected more than 52,59,142 people resulting in the deaths of 59 people, destroying a total of 1,63,962.02 hectares of crop area and affecting 30 districts of Assam

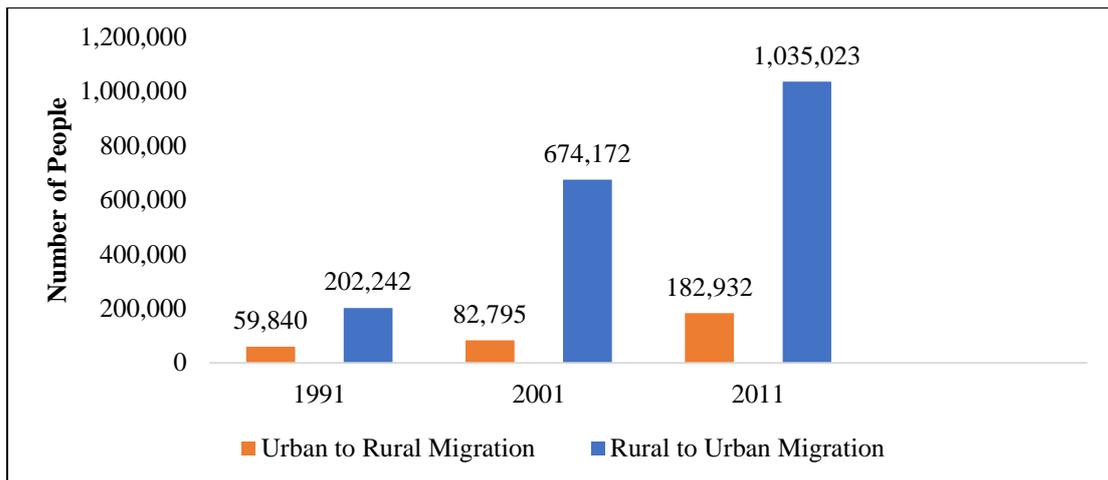
(Government of Assam, 2019). Experts opine that these data are highly underreported, which does not reflect the correct picture of the devastation induced by flood (Coelho, 2013). The increase in the affected area by floods every year has demotivated many farmers with no option but to look for other opportunities to sustain the livelihood of their family members. The loss of livelihood caused by floods is enormous. With the rapid increase of siltation, the once fertile soil is no longer productive, which in the long run has turned Assamese farmers landless, with limited options of other beneficial employment in their own place. Hence, they are forced to migrate to urban areas in search of jobs appropriate to their credentials (The Energy Resource Institute, Teri, 2008).

The chronic floods and loss of crops are among the major reasons which has made agriculture an impractical option for livelihood in Assam and forced people to migrate from rural areas to urban centres (Dutta & Sarmah, 2015). Data presented in Figure 7 shows the number of migrated people from rural to urban and urban to rural centres. The intensity of migration is towards an upward trend in both aspects. However, the migration of people from rural to urban centres is happening at a rapid pace. This also reflects the sharp decline of people engaged in agricultural activities.



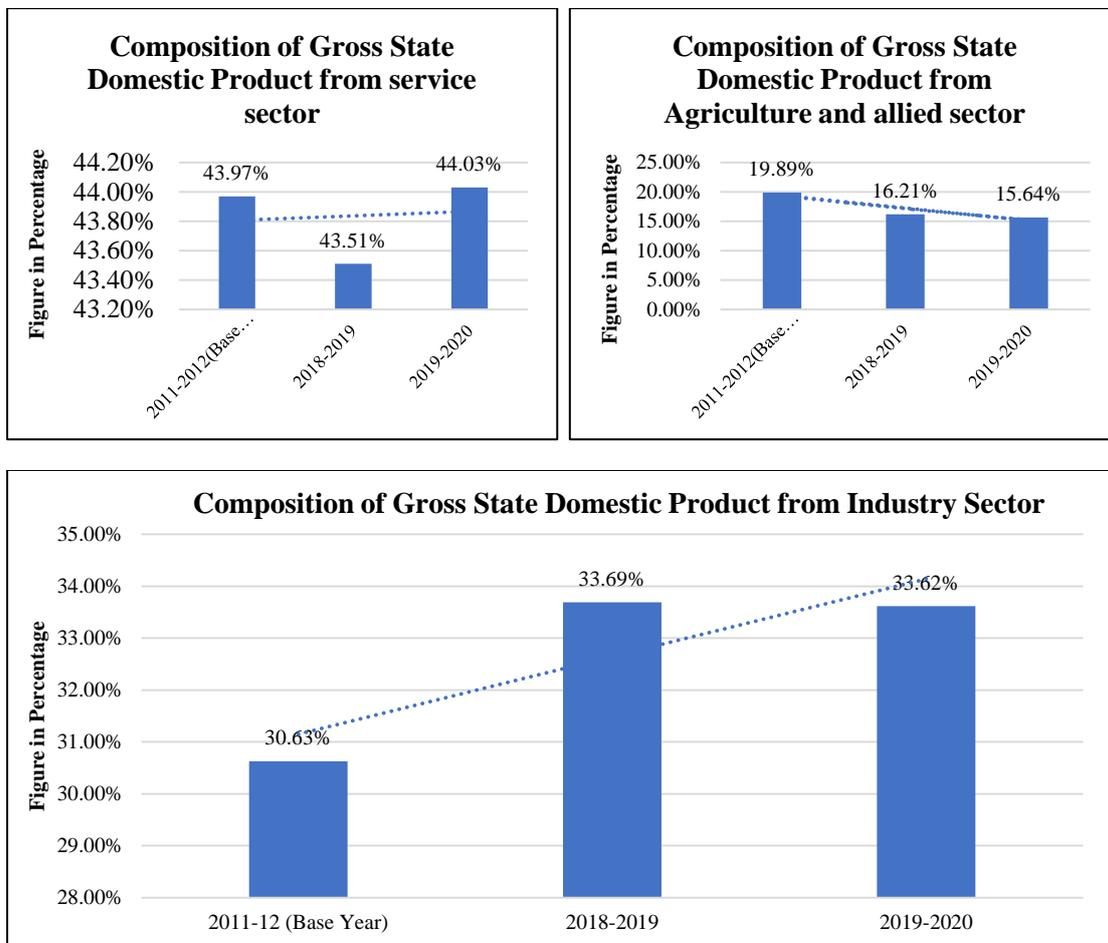
Source: Assam State Disaster Management Authority (2019)

Figure 6: Showing Flood Induced Devastation in Assam, 2019



Source: Office of The Registrar General & Census Commissioner (2006)

Figure 7: Decadal Migration in Assam



Source: Directorate of Economics and Statistics, Assam

Figure 8: Sectoral composition of Gross State Domestic Product of Assam in different years, considering 2011-12 as a base year

Data in the Figure 8 reflects the changing nature of the economy in the state of Assam. There has been a sharp decline in gross state domestic product (GSDP) from agriculture and allied sectors between 2011-12 to 2019-2020, whereas in the same period GSDP has seen a steady increase in its composition from other sectors including the service sector and industry sector. This shows that people who are doing away with the agriculture sector are slowly getting themselves engaged in service and industry sectors. The economy of Assam also fails to provide appropriate financial support to the farmers. Like other states, the impact of middlemen in agriculture could be seen in Assam also, and many a times farmers have faced heavy losses by selling their products at minimal rates which were much lower than the market price. Moreover, the paucity of marketing and depot facilities is also a big constraint for farmers in Assam. In the absence of cold storage, farmers are not in a position to keep surplus produce and are forced to sell at low market prices. It is well understood that economic insecurity is one of the major factors which influence people to opt for non-agricultural activities in urban places where they have a stable source of income. The lack of opportunities in rural areas and unemployment problems put pressure on rural youth. In recent times, youth are more interested in skill related work or other options rather than agriculture. Other than engagement in industrial sectors, those who are educated get opportunities to engage themselves in the malls, small companies or different roadside businesses which have higher demand in the city areas. Therefore, people from rural areas in Assam prefer to move to cities with the hope of improving their quality of life in comparison to rural areas.

4. CONCLUSION

An effort has been made in this paper to analyse how rural-urban migration has affected the agricultural transformation in Assam. Therefore, from the above analysis, the study has found that rural-urban migration and agricultural transformation are interlinked. The study has identified floods as one of the major reasons which has forced people to move to urban places in search of better living standards. A considerable part of Assam faces flooding, notably from Brahmaputra and Barak rivers. Despite extensive attempts at flood management, calamitous flooding continues to affect a large section of the population and decrease investments. The flood-affected areas have been rising along with its cost and social interruption. It has directly impacted agricultural activities. However, it is important to note that, other factors such as opportunities in urban places, high rates of migration where migrants were also engaged in agricultural

activities, interest in skilled and technological works etc. are also the reasons which motivate the people to look for other opportunities from the agriculture sector and move towards urban centres for a job in other sectors. In Assam, the rural to urban migration creates labour shortfalls. Labour migration could be the reason for increased use of contracted labour for farming. In rural areas, because of the movement of people outside communities, there is less population pressure on agricultural land thus making more farmland available to be used by the non-migrants or people who are living in that area. However, we cannot deny the population has increased in Assam like in other parts of India and with the population growth, export of agricultural products has decreased, whereas in some cases imports have increased. It is expected that in the coming years, if population growth is not controlled, the demand for food commodities will be high. There is a need to adopt significant measures to increase the interest of youths in agriculture and control poverty and population growth. Moreover, greater cooperation is needed between the central and state governments for the management of issue of yearly floods in Assam. Additional attention needs to be paid to the future subsistence of small peasants. It is the need of the hour to build up more favourable circumstances for employment based on local conditions and that appeal to rural migrants to return to initiate agro-based businesses in the rural areas.

CONFLICT OF INTEREST

Authors declare no conflict of interest

ACKNOWLEDGEMENT

We would like to thank Prof. Sanghamitra Choudhury for her guidance and suggestions.

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How to cite this article: Das, R., & Sharma, K. (2022). Agricultural transformation due to rural-urban migration: An analysis of the situation in Assam. *Vantage: Journal of Thematic Analysis*, 3(1), 123-138

DOI: <https://doi.org/10.52253/vjta.2022.v03i01.08>

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