Article: Urbanisation and its impact on the Peri-Urban Areas: A Study in Guwahati, Assam

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Abstract

The urban peripheries have experienced substantial socio-economic changes in recent years. The study examines the effects of urbanisation in three villages located around the DeeporBeel adjacent to the city of Guwahati. Peri-urbanisation has led to changes in traditional livelihoods of the communities, commercialisation of land use, declining population engaged in agricultural activities, etc. The study argues that peri-urbanisation presents both challenges and opportunities for development for the local communities. As traditional livelihood diminishes as a result of urban sprawl, new economic opportunities have also evolved. However, the present situation warrants meaningful state interventions for sustainable planning of the peri-urban areas.

Keywords: DeeporBeel, Peri-urban, Urban sprawl, Communities, Livelihood.

Urbanisation and Peri-Urban Dynamics

“Urbanisation is a worldwide phenomenon” (Piorr et. al. 2010) and it “is also transforming the lives of those living in the rural areas around cities” (United Nations 2019). “(T)oday more than half the world’s population (55 percent) resides in urban areas”…and as projected this will increase to 68 percent by 2050 (United Nations 2019). It also envisages that“(M)uch of the new urbanisation will take place in Sub-Saharan African and South Asian countries with low incomes and weak institutional and fiscal capabilities” (Ibid). “Such rapid growth in cities creates new opportunities—but it is also putting new pressures on cities and countries...” (Lall et.al. 2021). For instance, “Ghana in the Sub-Saharan African region is facing a lot of challenges in its peri-urban development and as a result, the demand for rural land has heightened in the recent years. These land transformations are particularly evident in the conversion of agricultural land uses to non-agricultural land uses…” (Anssah and Chigbu 2020, 2-4). “The World Resources Institute (2001) estimated that in 2025, more than 50% of the African and Asian populations would be living in urban areas” (Piorr et.al. 2010). The rapid
urbanisation as observed in developing countries, like India, has also impacted the peripheral areas with more or less rural characteristics. As Marshall and Dolley (2019) argue, “...the most important context of this urban transition is at the peri-urban interface, where there is a juxtaposition of rural and urban activities, and institutions and poverty, inequality and environmental degradation are often most closely associated”. The rapid urbanisation in the developing countries across South and East Asia is seen to be mainly driven by a cycle of neoliberal restructuring of peri-urban space. These impacts further accelerate peri-urban transitions in terms of land-use patterns, resource extraction, pollution, nature of traditional livelihood and other such socio-economic transformations. “There are positive effects, such as proximity to markets and workplaces, quality of life, and innovation” (Piorr et. al. 2010).

The emerging peri-urban spaces are becoming the important “sites of dynamic” (Piorr et. al. 2010) transitions and adaptations. Marshall et. al. (2009) have identified peri-urban as “the urban fringe and the geographic edge of cities as a place, it refers to the movement of goods and services between physical spaces and the transition from rural to urban contexts as a process and finally, as a concept, it refers to an interface between rural and urban activities, institutions and perspectives.” As a result, “the urban and rural areas are no longer separate territories” rather there is a continuum. “(T)he European experiences of urban expansion driven by economic development show that the peri-urban have the same amount of built-up land as urban areas.” Moreover, the future projection points out to the fact that in Europe, the “built development in peri-urban areas could double between 2040–2060” (Piorr et. al. 2010). Peri-urbanisation is a global phenomenon; however, the trend of peri-urbanisation varies across the globe. “Peri-urbanisation in developed countries is characterised by industrial development, whereas, in most developing countries, the process has resulted insprawl endangering the physical environment” (Ansah and Chigbu 2020, 5).

Increasing urban sprawl, especially in the developing countries has resulted in varied forms of degradation including changes in land use from agricultural to residential and industrial/commercial, changes in the use of natural resources, for instance, deforestation, water depletion and pollution, quarrying, land degradation because of brick kilns and increased solid and liquid wastes have “strained the carrying capacity of surrounding areas” (Shaw 2005, 130). Indian economy underwent massive transformation -post-liberalisation (1990s). The new India (if we can say so) saw rapid growth in its private economic sector. The sudden economic boom resulted in the rapid expansion of the cities which began the
process of peri-urbanisation. “A better understanding of the complex dynamics of rural-urban transitions” (Tacoli and Vorley, 2015) is significant in the present times.

Significantly, “spilling over of population from the city into these areas has been occurring quite rapidly in the 1990s in almost all large cities in India with middle-class housing demand driving the move to the outskirts of the city where land is cheaper. In addition to homeowners building homes in small plots and residential complexes with multiple families, the peri-urban has also seen the incursion of services that need cheaper land, such as hotels, hospitals, and schools. In this sense, the peri-urban is more urban than rural” (Ibid).

Further, it is rightly pointed out that the peri-urban areas provide many services to the urban centres as discussed above. However, these areas often lie outside the purview of the legal jurisdiction of the urban areas. Big companies and public institutions can establish business and privatised services in peri-urban areas. This has led to increased local inequalities in terms of providing services to the local communities residing thereof (Shaw, 2005). Similarly, in the study area, as a prospective peri-urban location adjacent to fast-developing Guwahati city, many developmental activities can be seen, such as a brick kiln, quarrying, establishments of companies, and conversion of land for other uses, public amusement park, and so on. Also, it is observed that the city dwellers continue to buy land at cheaper prices as compared to the city. These have negatively impacted the peri-urban areas, especially in terms of the degradation of the natural environment and the dwindling nature of traditional livelihoods.

In the last couple of decades, rapid urban sprawl has resulted in drastic changes in land use and land cover. Narain et. al (2014) rightly contends, “the metropolitan area of the city has expanded…engulfing a vast stretch of the rural hinterland. Travelling in the outskirt along the transit corridors of NH31 and 37 clearly shows fast-developing peri-urban landscapes consisting of an intense mixture of agriculture, industry, commercial and residential uses. Much agricultural land and several wetlands have been filled to give space to high rise apartments.” These factors have not only disrupted the natural ecosystem but also forced many tribal communities to sell off their land and move from the urban fringe areas. Urban development has eroded the traditional land uses and occupations of the local people. The areas in and around the Deepor Beel are in a state of degradation due to massive urban development and the rapidly expanding city’s built-up area (Ibid 2014).
Studies show that the growth of the unplanned city has triggered a lot of urban problems in the city and Guwahati like any other cities in India experiences a massive jolt of bad planning vis-à-vis urbanization (Patowary and Sarma, 2018, Desai, et. al. 2014). Against this background, the study examines the effects of urbanisation in the areas around the DeeporBeel located at the fringe of Guwahati city. It is divided into four main sections. Section One deals with the introduction and sets out an understanding of the peri-urban areas. Section two discusses an overview of the study area, data collection and analysis. Section three presents a brief understanding about the communities residing in the villages near DeeporBeel and their history of migration. Further, it also examines the impacts of urbanisation on changing patterns of livelihoods and various socio-economic transformations. Section four draws conclusions based on policy implications. The study argues that peri-urbanisation presents both challenges and opportunities for development for the local communities. As traditional livelihood diminishes as a result of urban sprawl, new economic opportunities have also evolved.

**Methodology**

**Overview of the Study Area**

The study was conducted in three villages located on the periphery of DeeporBeel, namely, Kalitapara, Mikirpara and Deosotol villages. The selection of the study area was based on the proximity to rapidly urbanizing Guwahati city as a result of which the area has undergone massive transformations. These three villages come under the MikirparaChakardo revenue circle and are located on the western side of DeeporBeel. The villagers are peasants, though the younger generations have moved out of agriculture as a way of livelihood in the present times, because of their dwindling traditional occupations. The intersections of caste and tribes make these villages rich in terms of their traditional knowledge systems and practices. The MikirparaChakrado revenue village is under the Kamrup Metropolitan district of Assam and the Azara revenue circle. Located around the Deeporbeel, the settlements under the revenue village are inhabited by communities across different caste and tribal groups. The Kalitapara village today comprises 26 households and continues their livelihood with agriculture. Mikirpara village is situated on the western side of the Deeporbeel. The village has around 45 households which include people from different communities like the Mikirs (Karbis), Kalitas and Bodos. Similarly, Deosotal, has a mixed demographic profile with 55 Karbi and 35 Nepali households.

*DeeporBeel* is a permanent freshwater lake and the largest Beel in the Brahmaputra
valley of Lower Assam (ASTEC, 2016). Among the two other Ramsar sites in the northeastern region of India, *Deepor Beel* is the only Ramsar site in Assam. It is located about 10 km southwest of Guwahati city in the Kamrup Metropolitan district of Assam. There are traditional fishing and peasant communities inhabiting many villages located around the Beel. The Beel and its adjacent villages fall under Azara revenue circle of the Kamrup-metropolitan district. National highway 37 (NH-37) is on the northern side of the Beel and touches its periphery at different places like Dharapur, Azara. Different institutions such as Gauhati University, Assam Engineering College, Assam Ayurvedic College, and Forest School are located on the Northern side of the wetland (ASTEC, 2016). *Deepor Beel* is ecologically an integral part of Rani and Garbhanga Reserve forests (Mikirpara-Chakardo Micro Plan, 2017, Saikia, 2019). In the present times, the dynamics of economic growth and urbanisation have an ambiguous impact on the wetland and deteriorated it to a substantial extent. While being located as a peri-urban area, the areas around the wetland have been degraded due to various developmental factors such as large-scale encroachment, population pressure, landfilling and conversion to other land uses, settings up of hotels, industries like brick kilns, and construction of the building. In emerging peri-urban areas, the issues of land, traditional patterns of livelihood, development, and rural-urban interface have presented serious nexus of conflict.

**Data Collection and Analysis**

The overall methodology of the study is based on qualitative research methods obtained from both primary and secondary sources. Primary data directly gathered from field and data collection methods included focus group discussion, structured/semi-structured interviews using interview schedule, in-depth interviews/discussions, direct observation, oral narratives of the communities, and an interview guide. It must be mentioned that the methodology of the present study has to be flexible to some extent to deal with the sensitive issues in the field. Thus, mixed methods of data collection have been adopted for gaining deeper insights of the problem under study. The study made use of snowball and purposive sampling methods to select respondents. While secondary data is collected from books, journal articles newspaper articles, web publications etc.

The fieldwork for the study was conducted for a period of 4 months from November 2020 to March 2021. It is to mention that due to the prevailing COVID 19 pandemic in the state, a prolonged fieldwork could not be conducted as there were COVID protocols of the state related to travel and safety measures. The researchers also had
to rely mainly on alternative methods to gather data such as telephonic interviews and discussions with some of the stakeholders.

The significance of the present study lies in the fact that there is dearth of sociological research studies on the growth of peri-urbanisation and its impact on the communities in Assam in general and Guwahati in specific. There are little or no studies on the dynamics of peri-urbanisation of the areas around the Guwahati city. The focus of much of the available scientific research is on the ecological impact of rapid urban sprawl on DeeporBeel. During the last decade, the city of Guwahati has expanded enormously as a result of rapid urbanisation. The city’s boundaries are also continuously expanding to the adjacent areas to accommodate the development needs of urbanisation. Though most of the adjacent areas around the city are rural in the present context, these areas reveal the characteristics of peri-urban interfaces, that is, the existence of both urban and rural linkages (Narain and Nischal 2007). In the proximity to Guwahati city, the rural areas emerged as peri-urban areas with major environmental and socio-economic transformations. In this context, the sociological study aims to understand such transformations and challenges in three villages located near the DeeporBeel.

**Communities and their Settlement: A Brief History**

The history of human settlement around DeeporBeel has not been documented. There are mostly scientific and environmental studies to understand the changes in the wetland. The literature available on the history of human settlement around the beel is rather thin. There has been little or no sociological research to understand the history of migration of the communities, their livelihood, culture, and recent changes. Therefore, the researchers had to rely on the oral narratives from the field. The data reveals that people from the villages under study have largely migrated from the nearby areas.

Although there are traditional fishing communities that have been dependent on the beel for subsistence, there are also communities that are traditionally peasants. For example, Keotpara village located towards the northern side of the beel is traditionally a fishing community. While the oral narratives from the villagers in the study area, viz, Kalitapara, Mikirpara and Deosatol reflect that these villages were traditionally peasant. Flood and erosion pushed them to the areas adjacent to the beel during the 1950s in search of secured land and livelihood. However, being peasants did not cease them from accessing the water body and being affected by its precarity in recent times.
One of the respondents from Deosatal village (situated on the western side of the Deepor beel) narrates his personal anecdote. He recalls the process of relocation from the native village (located on the south bank of the river Brahmaputra where floods were perennial). According to him the natural push added to the brevity of time and forced people to migrate. He recalls the help that they received from an influential elderly from Deepor Beel (whom he fondly refers to as a Mukhia) and his support towards their settlement. On hearing the underpinning natural disasters in the forms of landlessness and flood the Mukhia welcomed them to the village and in return demanded their labour and financial contribution towards the construction of the local school and temple in the village. The migrants were allowed to settle in an uphill locally called a tila. However, today the tila no longer exists in the village as it has flattened and has become plain, but it continues the name. As far as his memory goes there were 10 such families who have migrated into the village and have settled there during the 1960s.

Kalitapara village presently comprises 26 households with agriculture as a primary source of livelihood. The respondents from this village stressed the process of migration and the brevity of time like the previous respondent but did not acknowledge any help received from anyone. They narrate that the process was initiated by their forefathers who found land around the water body fertile and suitable for agricultural activities. The process was prolonged as they recall their fathers crossing the beel regularly during monsoons and engage in various agricultural activities for the season. Albeit the movement was crucial for sustenance yet was treacherous as the water body was double its present size. It is then that the villagers decided to relocate and settlement in the fertile pockets of the waterbody.

While people from Kalitapara and Deosotal recall a history of migration, the villagers from Mikirpara cease from remembering any shared narrative on migration. A strong narrative claim that the Karbis who were formally known as Mikirs have been the original settlers in the area, locally they are also called the bhumi putra (sons of the soil). One of the respondents brings into focus the accounts of Tarun Ram Phukan in his Sikaroro Dinolipi (Hunting Diaries) where he documents the Karbi settlements. While a few respondents asserted that their ancestors may have migrated, they held themselves back from sharing any such narrative as shared by the respondents from the two villages.

Such narratives from the villagers challenge the larger polemic of human settlement and encroachment in the larger area of the beel. There is a constant struggle
between the villagers and the landowners. Landlessness among the villagers is a critical issue analysed in the field. The binaries of land and landlessness are points of constant anxiety for people in the area. The traditional understanding of land did not include the process of its documentation (matipatta) till the last decade. The issue of land documentation has crept up in the area since 2011 when the villagers were asked to produce legal documents for the land that they were working on for years. This was the first major bolt to their existence and identity. The land which they felt belonged to them has now been registered in name of a person who does not belong to the area. The coming of the new landowner was appalling for the villagers. While the new owner has made many promises it is extremely difficult for the villagers to trust. The villagers also highlighted a nexus between the Marwari businessman (a metaphor used mostly for a non-Assamese businessman from the city, does not necessarily include only people from the Marwari community) and the local landowner. For the villagers, it is their ill fate that has pushed them away from their soil. Due to their inability to produce proper land documents they also do not have any legal claim over the land.

The only way of land legitimacy is through the production of legal documents which the villagers fail to produce. Desai et.al. aptly (2014) state,

“Guwahati’s hills have gradually been settled by different socio-economic groups...The displacement of tribals from Guwahati’s plains led many of them to move to the hills. Tribals displaced by development projects as well as natural calamities from elsewhere in Assam as well as those fleeing from ethnic conflicts in rural parts of Assam who migrated to Guwahati also preferred to live in the hills...because of the lack of vacant lands in the plains and the high cost of land and housing in the informal sector in the plains...it is the poorer groups living on the Reserve Forest lands in the hills that have recently borne the brunt of the state’s denial of land rights.”

**Traditional occupations vis-à-vis Changing Livelihoods**

The communities are indigenous peasants who have been solely dependent on agriculture for sustenance. Since depredation of crops by elephants is common in these villages, the villagers had to eventually stop the cultivation of Sali crop. However, with increasing urban sprawl, these villages have witnessed tremendous transformations in the land-use patterns from agriculture to non-farm activities in recent years. Elderlies from Kalitapara village recollect that besides the cultivation of paddy, they were also engaged in Jute cultivation. Jute was a good source of income for many of the villagers for years as there was a market and demand for
jute and its byproducts. Over the years, however, the demand for jute has declined and also the skills that the villagers owned in terms of making the products have waned. While the villagers (from Kalitapara) were not directly involved in any activities with the DeeporBeel like fishing, the beel did provide them supplementary resources for their everyday activities. The meteka (Water Hyacinth) from the beel was also used by the villagers to make baskets for storing vegetables and fruits. The waterbody also acted as a bridge bringing the villagers closer to the nearest townships. However, today there are concrete roads that connect the villages and townships. They rue that the development of concrete roads has in a sense pushed the youths (emotionally) away from the beel. Although, the village youths do not have the same emotional connection with the beel as that the elderly villagers, they wish to use the beel as a source of income. The discussions with the youths in three villages reveal that the availability of the internet has exposed them to various new ideas on the constructive uses of the wetland (beel) and potential eco-tourism. However, they lack the essential expertise to pursue the same. In this regard, the government has taken several initiatives on eco-tourism in the area which has further reified the arguments of the youths.

At the village level, a Micro-Plan has been implemented in the year 2017 by the Mikirpara-Chakardo Eco-Development Committee (EDC) under the aegis of the Forest Department. The village development plan is based on the objectives of enhancing livelihoods for the local communities as well as biodiversity conservation. The micro-plans are an integral part of the Joint Forest Management (JFM) programme which aims for the active participation of the community members in their development. The primary aim of such a plan is to link local forest-based resources to local needs. But residents in these villages regret that besides a few promises and meetings held at the village level there are no concrete steps taken towards developing the area as a centre for eco-tourism. The steps have been rather limited.

The youths have started several small businesses like tea shops and gumtis (small shops, selling local merchandise, vegetables etc.). However, with the pandemic, the tourist footfall went down, and the sources of alternative livelihood have also gone down. The other important source of livelihood was agriculture and like many parts of the country, the area has issues with irrigation. It is mostly rainfed and is completely dependent on rain. Apart from irrigational issues, the apathy towards agriculture is due to land alienation because of various developmental projects like roads, railways etc.
Impact of Urbanisation

The rapid expansion of Guwahati city has led to crucial transformations of the urban peripheries. As mentioned, the peri-urbanisation presents both challenges and opportunities for development for the local communities. This has been witnessed in the context of the field area where rapid urbanisation has led to huge transformations in land use patterns and the nature of traditional livelihood. However, with these transformations, new opportunities have also evolved for the communities. Over a period Deeporbeel has developed into a tranquil space, which lures many living in the nearby areas. Either to break the monotony of urban life or to spend time in the wilderness they come around the beel and spend some time in solitude, they either take a walk or a run. Discussions with some of the respondents from the villages highlight the positive impact of Deeporbeel being developed as a tourist spot. The respondents added that the area has opened many new business avenues for the unemployed youths. The small tea/snack stalls opened by these youths is a silver lining to their dwindling income sources. Besides tea and snacks, they are also making a living by selling local vegetables and coconuts to the visitors. However, due to the outbreak of the Covid-19 pandemic in the state, its protocols have pushed these youths toward shutting down their business.

A young boy and his mother owns a tea stall near the beel. The mother describes their drudgery. They started the shop in December 2018 as the footfall is highest in the months of December and January. Gradually along with tea and snacks, they also started selling local vegetables (which they explain was a great hit). They could easily make an income of 200-500 rupees on a day, that is, approximately 15,000 rupees a month. But everything came to a halt with the onset of the Covid-19 pandemic. The mother asks: What will happen to people like us?

The fieldwork reveals there is an inclination towards other sources of income generation. For many youths, engaging as daily wage laborer is more fruitful than toiling in the agrarian field. A young respondent from the area narrates more than agriculture or dependence on the beel youths have started to work in the warehouses. Over the last one decade the villages have seen mushrooming of warehouses. While the owners do not reside in the villages, they constantly need help and support from the youths in the village to carry on their everyday business. For days work the youth gets an average of 500-600 rupees, while this is not a permanent source of income the young boys are happy with it as they do not have to travel across villages and cities in search of employment. Further, he contends that the area has undergone a massive transformation, as more and more people
started moving away from agriculture. Apart from the normal apathy towards agriculture, the youths have started to withdraw from agriculture because of the elephant raids into the paddy fields. The entire area was an elephant corridor, and the elephants would come down in search of food and water. But the construction of the concrete road (connecting Lokhora- Basistha), and railway track uptoJogighopa led to the shrinking of the large elephant corridor around DeeporBeel. The Rani-Garbhanga reserve forest and the stretch passing through DeeporBeel is one of the most critical wildlife corridors. The railway track which passes through this corridor has become a deathtrap for the wild elephant, hence posing a threat to their survival”.Narain et.al. (2014) contend, “(I)nvasion of city spaces into the rural hinterland has disrupted the micro-ecosystem of forest, wetlands and hilly landscapes. Encroachments into the forest areas either for residential or commercial purposes have increased soil erosion. There are emerging problems of hill cutting, soil erosion, siltation and associated urban flooding.”

In general, the respondents felt that the Government of Assam is indifferent towards area. They remember how time and again several governments have failed to address the issues of DeeporBeel. In an online interview with the Fridays for Future (Guwahati Chapter, July 2021) a respondent from the Kalitapara village referred to the chief secretary’s report of 1989 were in the Government showed disinterest in converting DeeporBeel area into a Bird Sanctuary. The proximity of the area with Guwahati Airport was the main reason behind the decision. As navigation of flights was a major problem due to possible collision of birds. However, the state authorities did not refrain from construction the railways tract which connected Kamakhya-Jogighopa. The railway track not only had an adverse effect on the elephants but also impacted the agrarian economy of the area. The villagers (who were in their 40s and 50s) fondly recollect their memories of seeing elephants cross the area, of them coming down to the water body for food and walking back to the nearby Rani Reserve Forest. At present, the railway track passing through the elephant corridor has stifled the free passage of wild elephants into the area. Stories of man and animal conflicts were almost nil in the area, however, today there are instances of such conflicts. With a shrunk habitat, dearth of food, the elephants started entering the villages in search of food and the process started destroying many paddy fields.

Besides, unabated construction activities and fragmentation of habitats have also forced the wild animals to intrude the human habitation. The villages located around the urban peripheries of Guwahati city towards Chandrapur, DeeporBeel and Rani-Garbhanga areas have been continuously facing human-animal conflicts.
Some of these areas are crucial elephant corridors and the fast-expanding developmental activities have resulted in dwindling forest covers. Moreover, the rapidly expanding city’s built-up areas have not only resulted in depletion of natural forests but also degradation of natural water bodies, especially the wetlands. *Deeporbeel* is one of such natural water bodies located in the urban periphery of Guwahati city. In the last couple of years, the areas around the *beel* have been degraded mainly due to anthropogenic threats such as heavy landfills for construction, big residential complexes, development of road network, industries, waste dumping, etc (Narain et. al. 2014).

The area has many stone quarries as well as warehouses owned by the rich Marwari businessmen from Guwahati city. The local youths are of the view that these businessmen have started fortifying the village along with giving employment to the villagers. Many youths have started taking up employment at the local warehouses as daily wage workers.

A local youth laments, apart from the already mentioned reasons for the decline in agriculture activities, the lack of proper irrigation facilities is also a significant cause. Unlike the traditional system in which the youths would clean the water bodies in small groups, the villagers today have stopped clearing the waterbodies and the wetlands which in turn have impeded the natural drainage system. They are of the view that there is no fund to initiate the practice of cleaning and the state is also not responsive in managing the water bodies. At the local level, few villagers used to get engaged in cleaning tasks occasionally. However, due to bleak benefits, they also gave up to the process of cleaning. Hence, these factors are held responsible for the withdrawal of traditional fishing practices as an alternate source of livelihood generation.

It has been observed that landlessness among the villagers has also accentuated the process of out-migration, especially among the youths. Many youths from the nearby villages have started moving out to the nearby townships. With the boom in the real estate, schemes and factories under the Advantage Assam Scheme of the Government of Assam, the young boys find non-farm activities more alluring. They also find moving to bigger cities like Delhi, and Bangalore more lucrative.

Thus, it is worth noting that the peri-urban transformation is an interrelated process. Transformations in the urban areas trigger changes in its peripheries. (Ansah and Chigbo, 2020). During the last couple of years, the rapid urban sprawl of Guwahati city has induced various socio-economic and ecological changes in the study area. The emergence of the *DeeporBeel* area into peri-urban exhibits changes in the
traditional patterns of livelihood, traditional occupations, and ecological and various environmental challenges. The discussions with the local villagers revealed that the rapid urbanisation of the Guwahati city in the last couple of years and its continuous interactions with the peripheries have transformed the areas around the DeeporBeel. Similarly, around Guwahati city, there are areas which till a few years back were typically rural. However, during the last couple of years, these rural areas have significantly transformed into peri-urban areas with considerable infrastructural development. For instance, Amingaon, Azara, Chandrapur, Pankhaiti, Sonapur, Changasari, etc are some of the emerging peri-urban areas around the Guwahati city. There are several reserve forests located in the peripheries of Guwahati. As a result of rapid urban growth, these reserve forests are also facing potential from economic development, population growth, commercialisation, and so on. The peri-urban areas can be transformed into potentials spaces with multifunctional (Wandl and Magoni, 2017) dynamics with planned, innovative, and sustainable urban planning. Urban planning and development must consider the dynamics of the peri-urban areas, the communities, and their traditional living. The fieldwork reveals that the peri-urban areas are being inevitably affected by the expansion of Guwahati city leading to a host of negative impacts on the traditional communities, their livelihood, as well as the ecology of the areas. It has been observed that the development such as construction works, industries, commercial complexes, etc. are sometimes unwanted by the communities in the urban peripheries because these tend to invade their traditional spaces. This has also created tensions between the urban areas and their peripheries. Hence, it calls for strategic planning and management of the peri-urban areas. Wandl and Magoni (2017) lament, “(A)n integrated approach is required to which can address environmental protection, the provision of ecosystem services and the creation of green infrastructure alongside local economic development, and the maintenance of the quality of life”.

In the last decade, state decided to undertake the project of saving the city of Guwahati from flash floods. Under this campaign, the water from the rivers of Bharalu, Bahini and Basistha were to be released at DeeporBeel. The water from these rivers also brings along silt and pollutants which causes massive water pollution and eventually affects the aquatic ecosystem of the beel. A similar story was also crafted around the dumping ground. To beautify the city of Guwahati the peri-urban area of DeeporBeel has been selected as a dumping site, the Boragaon dumping site right next to a Ramsar site is an example of unplanned development.
Conclusion

The proximity of the field locations to Guwahati city has led to various socio-economic transformations in recent years. While the extension of the city spaces has created new avenues for the people in the peri-urban areas, it also has constraints. Rapid urban sprawl poses severe threats to the peri-urban communities, such as the high cost of living as a result of the development of the urban economy (Afriyie et. al. 2014), declining agriculture-based livelihoods, the emergence of various non-farm activities, commercialisation of land, other developmental activities, etc. As discussed, establishments of various non-farm developmental activities in these areas, such as a brick kiln, quarrying, construction works, companies, etc. have opened up multiple income-based opportunities for the communities. The meaningful state interventions are important for sustainable development of the peri-urban areas so as to ensure a balanced development of both urban and its peripheries. As the Guwahati city is fast expanding, land in peri-urban areas are also rising high in demand. The present situation warrants the implementation of an appropriate state land-use policy to address the sustainable use of land in peri-urban areas. Unplanned expansion of the city may trigger a lot of problems for the peri-urban communities.

The fieldwork reveals that the villagers do consider that the area has a lot of potential for alternative livelihood generation. Training programmes for skill development for the local villagers must be created and the state must support the “diversification of the peri-urban economy and the development of the non-farm income-generating activities” (Afriyie et. al 2014). Also, “(P)eriurban agriculture should also be encouraged…to ensure sustained urban and peri-urban food supply” (Afriyie et. al 2014). There is scope for the overall development of the area vis-à-vis the generation of alternative sources of livelihood for the peri-urban poor. For instance, the local youths from the area are well versed with the local/ migratory species of birds that flock around the beel during the winter season. Proper training from the government can help these youths to generate an income through birding. Also, as decided by the government if the DeeporBeel beautification project takes shape, this can be of immense help to the communities and will open up employment opportunities. With the outbreak of the COVID-19 pandemic and the loss of livelihoods, it becomes crucial to address these issues with a rigour. The state can also work in tandem with the local level bodies like village development bodies, Eco Tasks Forces, and Self Help Groups and incorporate people across caste, tribe and gender towards developing a sustainable model.
Notes:

i Beel means wetland or large aquatic body in Assamese. It is one of the two Ramsar sites in the state.

ii *Sali Dhan* is a traditional later maturing variety of paddy in Assam.

iii Assam Forest Department’s Micro Plan prepared by the Mikirpara-Chakardo ECO-Development Committee (EDC). According to the JFM Guidelines of 2000, the Forest Officers and EDC should prepare a micro plan after having detailed PRA exercise in the village. The micro-plans of the EDC are to be incorporated into the working plans of the Forest Department.

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