



## Socio-Economic Influences of Wetlands on the Life of the People: A Case Study of Hnahila Beel, Nagaon, Assam, India

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### Abstract

*Wetlands are diverse, productive systems of ecological, economic, social and cultural value. Wetlands are the habitat of numerous flora and fauna which have their own ecological significance. They are mainly the abode of variety of species of aquatic life. Assam, situated in the north-eastern part of India has rich aquatic wealth. Numerous beels, swamps, rivers and ponds clearly reflect her richness in aquatic wealth. The Brahmaputra valley of Assam is endowed with numerous large and small wetlands (beels). In Assam, 10123 sq. km. has been occupied by wetlands i.e. 9.7% of the total geographical area of Assam. Nagaon district of Assam is located in the flood plain of the river Brahmaputra having a large number of wetlands. The district has a total of 379 wetlands accounting 11.15% of the total land area (ARSAC, March 2011). These wetlands play a very significant role in socio-economic lives of the local people. Since time immemorial, people had been utilizing the resources of the wetlands for their personal benefits. Wetlands provide a number of options on which people can find out varieties of ways to generate their sources of income. This paper is an attempt to study the impacts of Hnahila beel on the socio-economic lives of the people. The data collected for this purpose is based on both primary and secondary sources.*

**Keywords:** Beel, socio-economic impacts, wetlands.

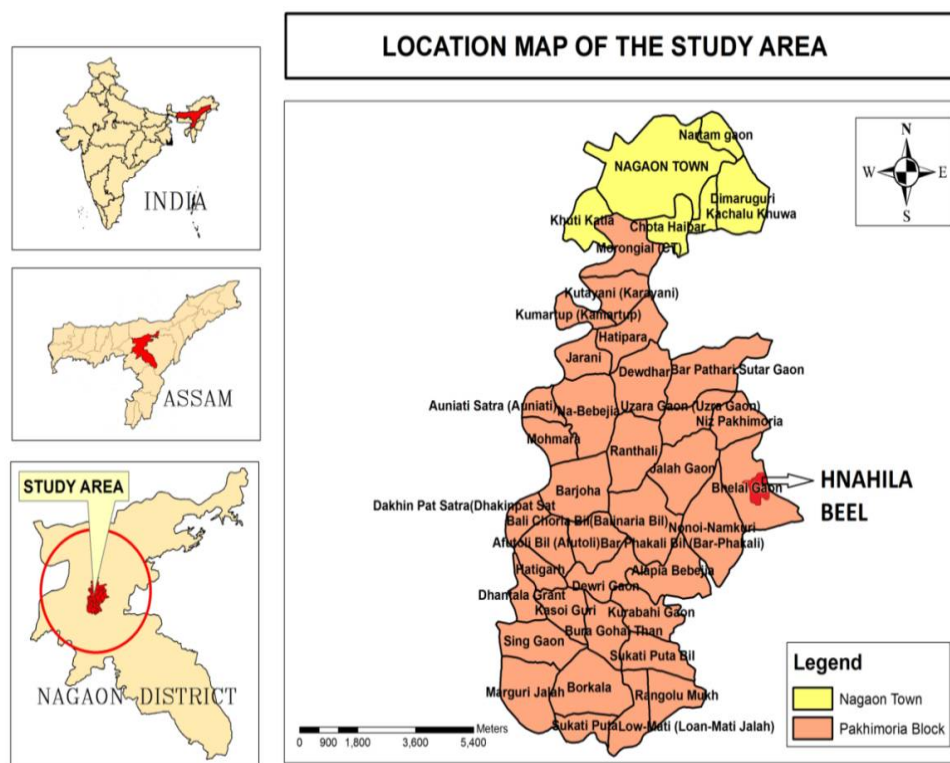
### Introduction

Assam, well-known as the land of rivers, has rich aquatic wealth. Numerous beels, swamps, rivers and ponds clearly reflect her richness in aquatic wealth<sup>1</sup>. Assam has about 430 registered beels, 1192 swamps and low lying areas and approximately 185825 tanks covering about 134134.15 ha involving rivers<sup>2</sup>. According to the report of Assam Remote Sensing Application Center (ARSAC), Assam has about 5213 numbers of wetlands which are distributed in her 32 districts<sup>3</sup>. Out of the total land area which is 78438 sq. km, Assam has about 10123 sq. km area covered by wetlands (according to the report of ARSAC). Thus, Assam has abundant fisheries resources which contribute significantly to her economy.

We know that the Brahmaputra valley has numerous wetlands which play a very significant role in the socio-cultural lives of local people. Wetland ecosystems are integral part of the valley supporting the major portion of life-forms in the state<sup>4</sup>. It is important to note that the rural lives in Assam are intrinsically linked mainly with the subsistence mode of farming, livestock rearing and traditional fishing closely connected with the wetlands<sup>5</sup>. Like other wetlands, Hnahila beel has distinct *economic, social and ecological* impacts on the people living in the adjacent villages. The beel is the most important source of livelihood of the local people either in direct or indirect terms. For instance, fishing is the *permanent* source of livelihood for the people and there are many

*seasonal* sources of livelihood too. The beel has lots of uses in the lives of the people. The crops in the agricultural fields around the Hnahila beel are supplied necessary water from the beel as there are no acute provisions of irrigation canals or so. The villagers use to collect the roots and tubers of the arum plant (kosu and kosu guti), its edible roots (nol kosu) and sell them in the nearby markets and even in the markets of Nagaon town also. Poultry farming is very suitable in the villages surrounding the Hnahila beel as there are abundant grasses growing on the bank of the beel which act as fodder for animals. The people also use to sell the bananas that grow on the banks of the beel and often use them for domestic consumption. The fire woods are derived from the trees and they are also use in making furniture. The people have also earned their income by selling lotus, its seeds and leaves. Traditionally, people had utilized the resources of the beel without causing any harm to its ecology. Earlier, the number of population was comparatively less, so, the utilization of the resources of the beel was limited and sustainable.

**Study Area:** Hnahila beel, well known for the migratory birds, is located in the center of the Nagaon district. It falls precisely at the centre of the entire North East India. Nagaon district is situated in the Central part of Assam, on the southern bank of the river Brahmaputra. Nagaon district has a total number of 172 beels. Thus, out of the total area of the entire district, 11.15% of it is covered by wetlands.



**Figure-1**  
**The beel is situated in the southern part of the Nagaon town.**

The Hnahila beel is one of the largest natural wetlands in Assam having great economical, ecological, biological and socio-cultural importance. It has rich floral and faunal diversity. Besides, huge congregations of residential water birds are also found in the beel. The Hnahila beel harbors large number of migratory birds each year.

The Hnahila beel is located between 26° 16' 13" N and 26° 16' 47" N latitudes and its longitudinal extension is from 92° 42' 40" E to 92° 43' 54" E. The elevation of the beel is 63.70 m or 209 feet from the sea level. The beel covers a total of 800 bighas of land, that is, it has a total area of 1.3 sq. kilometers approximately<sup>1</sup>.

The Hnahila beel is derived from the Assamese words “Hnah” (meaning duck) and beel (meaning wetland or large aquatic body). People believed that due to the availability of abundance of “hnahs” (ducks), the beel has been named as Hnahila beel<sup>1</sup>. Though the exact time of the origin of the beel is not known, it is revealed from some of the elderly people that the beel has developed in the region about 200-300 years ago<sup>1</sup>.

To the east, north-east and south-east of the Hnahila beel are Mudaioni, Badalgaon and Nam Gumutha villages respectively. Bhelaigaon and Deurigaon are located to the south and south-

west of the Hnahila beel respectively. Nonoi-Namkuri is situated to the west and Jolah and Ujoragaon are situated to the north-west of the Hnahila beel.

**Objectives of the study:** The objective of present study is to explore and examine the fact that, what exactly the Hnahila beel means to the people of the adjacent villages.



**Figure-2**  
**A map of Hnahila beel and its adjoining villages**

In other words, the basic objective is to study the impact of the Hnahila beel on the lives of the people. To delineate this basic objective, some households are selected as sample of the study and surveyed to fulfill the following objectives: i. To study the nature of socio-economic impacts of Hnahila beel on the life of the people of the study area. ii. To study about the source of daily food and income of the people from the Hnahila beel. iii. To find out the main problem of the fishermen. iv. To access the recent problems of the beel.

## Methodology

The study is based both on primary and secondary data collected from various sources such as surveys, journals, books, internet and other published and unpublished works. Both qualitative and quantitative parameters have been used in order to carry out the whole study. We have selected some households randomly for sample survey. The Village-Heads (Gaon-Buha) of each village adjacent to the Hnahila beel has been interviewed and they provided many necessary details on the beel. Besides, many fishermen's households were surveyed to know their socio economic condition. Questions about their daily income pattern, household type, diet, sanitation, drinking water, mobile phone use, medical service and agriculture were gathered which eventually helped in getting a pen picture of fishing community's life in the study area.

Data thus collected have been processed and analyzed using Microsoft Word and Microsoft Excel. Some of these data have also been graphically represented in the form of tables, pie diagrams, bar graphs, and so on.

## Results and Discussion

As mentioned earlier, Hnahila beel has distinct economic and social impacts on the life of the people living in the adjacent villages. The beel is the most important source of livelihood of the local people either in direct or indirect terms. For instance, fishing is the permanent source of livelihood for the people and there are many seasonal sources of livelihood too. The seasonal sources of income from the beel mainly include root collecting (especially of *arum*), grass cutting for commercial purposes, income generated from banana trees, firewood collection, income from lotus and its body parts, irrigation, etc. Thus, the beel has manifold uses in the lives of the people.

### Impact of Hnahila Beel on the Life of the People of the Adjacent Villages:

**Niz Pakhimoria:** The Hnahila beel plays a significant role in the lives of the people of Niz Pakhimoria. About 1246 people of the village are entirely dependent on the Hnahila beel. Thus, it is revealed that nearly 31.42% of the total people of the village are fishermen. About 15% of the villagers cut grasses that grow on the bank of the beel and a portion of them are either sold out or use as fodder for animals.

**Katonigaon:** The people of Katonigaon are very much dependent on the Hnahila beel. The village has around 865 people who are fishermen. The people earn their livelihood through fishing. The fishermen of the village constitute nearly 27.33% of the total population of the village.

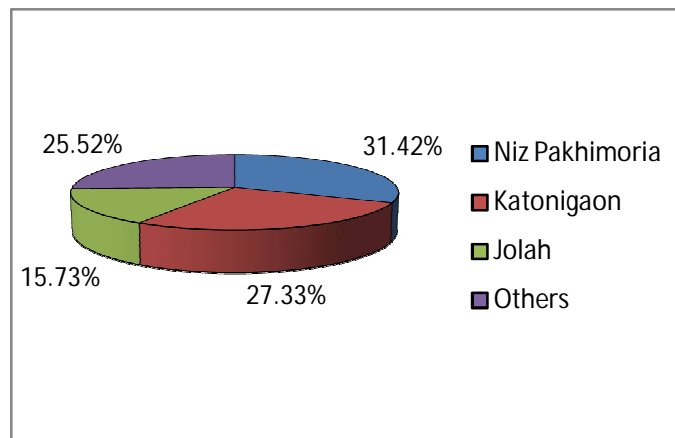


Figure-3  
Share of fishermen (in percentage)

**Jolah:** Jolah has 109 families who are dependent on the Hnahila beel. The village has 236 fishermen whose activity doesn't confine to catching fishes only but also collect firewood and grasses. Out of the total population, the village has 15.73% of fishermen. The numbers of fishermen are however, decreasing constantly.

**Dewrigaon, Badalgaon and Nonoi:** These three villages have in all 165 families who are entirely dependent on Hnahila beel. Besides fishing, the people also collect the edible roots of arum plant (*nol kosu*), firewood, wood for furniture, etc. Thus, the Hnahila beel has a significant role to play in the life of the people of these villages.

Besides, some people of these villages along with the people of Bhelaigaon and Nonoi-Namkuri collect lotus flower; its leaves and seeds, water lilies and their leaves and use them for consumption as well as sell them in the markets. However, it is interesting to note that there are no fishermen in the village of Ujoragaon. The reason behind this may be that the village has developed in all its aspects and the people living there feel no need of fishing as their forefathers do.

### Impact of Hnahila Beel on the People through Various Ways:

The Hnahila beel plays a crucial role in the life of the people living in the villages of Bhelaigaon, Uriagaon, Dewrigaon, Mudoionigaon, Ujoragaon, Jolah, Katonigaon, Pakhimoria and Badalgaon. The Hnahila beel is the *lifeline* of the villagers. The people living in these villages largely depend on the Hnahila beel. About 35-40 % of the people living in these villages are directly or indirectly dependent on the beel. The Hnahila beel

provide the people of these villages, their daily food and source of income. It not only provides fishes for their consumption but also gives them the source of income through which they bought their other requirements. Most of the fishermen earn Rs. 200 to 300 per day in an average. Thus, monthly average income stands at Rs. 6000 to 9000, which is fairly sufficient enough for a small family to run their life in the modern world today. Though they cannot manage to maintain the high profile lifestyle; yet the families can easily meet basic requirements.

The Hnahila beel has distinct *economic* and *social* impact on the people living in these villages. Fishing is the *permanent* source of livelihood for the people and there are many *seasonal* sources of livelihood too.

**Fishing:** Fishing is the most important source of the income of the people living in these villages. From the early morning till the mid hours of the day, the fishermen of the villages catch fishes and in the evening they use to sell them at the nearby small market centers. In this way, a large portion of the people is earning their livelihood from the Hnahila beel through fishing. The Hnahila beel is well-known for the anabas (*kaawoi*), *grasscarp*, *goroi*, *borali*, etc. Besides, there are also various other species of fishes that are found in the Hnahila beel.

**Irrigation:** The Hnahila Beel provides *irrigation* facilities to the nearby agricultural fields. The crops in the agricultural fields around the Hnahila beel are supplied necessary water from the beel as there are no acute provisions of irrigation canals or so. The agriculture of these villages is dependent on the Hnahila beel to some extent. Mustard and sugarcane are the most abundantly grown crops in the agricultural fields near its bank.

**Root Collecting (Especially of *arum*):** The villagers use to collect the roots and tubers of the arum plant (kosu and kosu guti), its edible roots (nol kosu) and sell them in the nearby markets and even in the markets of Nagaon town also. By selling them, the local people earn Rs.400 daily.

The arum plant is the principal food of the pigs. So, people have domesticated many pigs and this business has made them profitable.

**Grass Cutting for Commercial Purposes:** On banks of the Hnahila beel, there use to grow the abundant grasses. The grasses grown there are cut off and sell by the local people. Besides, the grasses are the fodder for a variety of animals. Thus, poultry farming is very suitable in the villages surrounding the Hnahila beel.

**Income generated from Banana trees:** The Hnahila beel is also the home of quite a number of banana trees. Some of the banana trees on the banks of the beel are planted by men and the rest are wild. On every *Diwali*, these banana trees are not only of great local demand but also at the markets of Nagaon town.

On this festival, each tree costs Rs. 50-100. On surveyed, it was informed by the residents of the villages that more than 1500 banana trees are sold at the markets of Nagaon. The people also use to sell the bananas that grow up there and often use them for domestic consumption.



**Figure-3**  
A villager cutting plants to use them as firewood

**Fire woods Collection:** The trees grown on the bank of the beel are of great importance. Wood is a highly versatile material and has a long history of use by the local people. The fire woods are derived from the trees and some people use to wrap the firewood sticks with cow dung. After dried up they are used as firewood and thus they make use of the locally available fuels.



**Figure-5**  
Lotus leaves growing abundantly on the beel

**Income from Lotus and its Body Parts:** Besides the above sources of income, the national flower-lotus abundantly grows on the beel which are widely used in religious functions like Saraswati Puja, Bishwakarma Puja, Durga Puja etc. These flowers along with its seeds and leaves are also of great demand. The people have also, thus, earned their income by trading lotus, its seeds and leaves.

People are thus; abundantly dependent on the Hnahila beel and the beel play a significant role in their lives. Thus, the Hnahila

beel can be said to be the *soul* of the people of the surrounding villages.

**Main problem of the fishermen:** The main problem of the fishermen is that they aren't allowed to catch fishes by some politically powerful persons. This is the most burning conflict between the fishermen (almost all villagers) and those persons. Though the fishermen are silent but, do have long term conflict with such people. This is because they are grabbing most of the beel where fishes grow. The villagers have informed us while surveying that those people backed by political power has dug up ponds for their personal benefits and restricts the local people from catching fishes. The villagers with a teary eyes and anger informed that if they are not allowed to catch fishes, then they will surely die as most of the people are entirely dependent on the beel. The villagers even told that at the beginning they weren't aware of their cheap politics but later they came to know about this. Thus, it is apparent that, more serious conflict or contradiction is going to take place between the villagers and the local leaders.

**Recent problems of the beel:** Like other beels of Assam, Hnahila beel has been going through some serious problems. With the development of the society day-by-day, the environmental as well as biological conditions of the beel have been deteriorated. Even the various species of fishes, birds, plants and trees that grow on the bank as well as the nearby areas of the beel have been facing serious threats. The major problems of the beel are summarized below: i. Diminishing fish resources. ii. Excessive felling of trees that grow on the banks of the beel. iii. Pollution of different kinds has been gradually gaining momentum in the beel. iv. Hunting, trapping and killing of wild birds and mammals within and in the adjoining areas of the beel has been taking place due to which there is decrease in the number of migratory birds. v. Lack of beel management plans and policies.

## Conclusion

**Conclusion:** The study reveals that Hnahila beel needs a better management approach and for its long term effectiveness, participation and the involvement of local community is must. Although it lost many of its diversity in both flora and fauna, the existing species can be conserved by the conservation of the beel. Conserving the remaining species will automatically generate the associated ecological, economical, cultural and social values.

**Recommendations:** The following are some of the possible measures which can help in the conservation of ecosystem of the beel. i. Depriving the local traditional fishermen from fishing and use it for the benefit of the local leaders should not

be allowed to happen. ii. The area adjacent to the beel has suitable environment as well as resources for which the area could surely be developed as a place for tourist attraction. iii. Natural parks should be built around the beel and provision of boating (especially paddle boats) should be made. This will improve the economic condition of the area as well as the beel. iv. The participation of non fishermen/fish businessmen in using the beel resources need to be stopped who degrade the natural part of the beel.

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