

# CLIMATE CHANGE AND LIVELIHOOD PROBLEM OF FISHING COMMUNITIES WHO ARE LIVING IN LARGEST WETLAND OF ASSAM NAMED AS SONE BEEL

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## **Abstract**

Sone beel is the largest wetland in Assam. Ecological degradation of North-East India in general and of Sone beel of Barak Valley region of Assam in particular causes survival problem of the people who are directly dependent on it for their livelihood. A vast majority of people of Sone beel belonging to Kaibarta and Patni community who are in threat for earning livelihood due to gradual ecological change. This paper highlights how they are accepting the challenges for survival due to ecological change.

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**Keywords:** Ecology, Environment, wetland, livelihood and challenges for survival

## **Introduction**

Poorly attended by the academicians and alike, *Sone beel* represents the case of theological degradation and the challenges of livelihood faced by the communities of people who are dependent on it. Situated in the southern Assam of India's North-East it depicts the harsh reality of degradation of wetland due to anthropogenic and other factors causing siltation, drying up of wetlands and loss of bio-diversity. The two major communities i.e *Kaibartta* and *Patni* whose livelihood is dependent on this water body are now struggling to adapt to this changing ecological circumstances. The present paper thus tries to focus on the degradation of the wetland and the mode of adaptation of the people surrounding it.

## **Materials and Method**

The study is qualitative in nature. Both primary and secondary data are collected for the study. Primary data is collected from field through indepth interview. Oral history of different communities living in *Sone beel*

is also collected for the study. Secondary data on *Sone beel* is collected from books, journals, news papers.

### **Understanding Ecology of North-East India**

The North-Eastern India is the land of rising sun in the Indian sub-continent. Assam and other seven sisters including Sikkim consist the whole landmass of the North-East India. The entire region is endowed with green forest where bulk of tribal people is residing. The entire North-East region is rich in natural resources like oil, natural gas, minerals and most importantly valuable forests. The world's largest river island '*Majuli*' is located in the heart of river *Brahmaputra*<sup>viii</sup>.

The region is highly prone to the consequences of climate change. The annual mean temperature of the region is rising at the rate of 0.04c per decade. Assam is a part of this highly warming trend. A significant change in seasonal rainfall is observed in different parts of North-East India including Assam. The summer monsoon rainfall is found to be decreasing at an approximate rate of 11mm per decade. Several districts of Assam were badly affected due to drought like situation in 2005 and 2006. Wetlands of Assam are drying up due to global warming and shortage of rainfall<sup>ix</sup>.

Most of the wetlands of North-East are located in Assam and Manipur. There are total 11178 wetlands, including all variety of wetlands like rivers, lakes, ponds and others, in Assam as estimated by Indian Space Research Organisation. Dibrugarh district of Assam is having highest number of wetlands where wetlands occupy around 21.43% of geographic area of the district. Barak valley region of Assam is having vast wetlands. Around 19459 ha of land is occupied by wetlands in Barak valley<sup>x</sup>.

Ecology and environment of North-East India is gradually changing. Global warming is one of major reasons of ecological change. Forests and hills of North-East are continuously misused by people. Soil erosion, silt deposition and rising of the river beds level have been accelerated due to the changes taking place in the hills. Increase in population growth and its ever rising demand for basic necessities for survival as well as for other comforts of life necessitated expansion of jhum lands in the hills. Besides settled agriculture in the valleys, industrial growth, road construction, mining, urbanization etc, added to the problem. The decreasing jhum cycles, land slides, the hill features have started to take a new and unaesthetic and ecologically unfriendly look. The significance of soil erosion and resultant siltation in the river beds is manifold. There is a vertical and a horizontal increase in river beds and increasing frequency and intensity of floods is the perennial problems of plains of north east. There is a marked deterioration in the water quality, increase in turbidity or opacity, reduction in plant life at the bottom, qualitative changes in the physio-chemical environment of the

water, disturbance in the benthic environment of the river, disturbance in spawning / breeding areas of aquatic fauna and so on. Hence there is an overall depletion in the quantity and quality of aquatic life. It has been seen that before 1950, the rate of siltation was very rapid and it has been observed that within a few years, the river bed rose by three meters in several areas. The situation has been aggravated due to further cutting of trees in the catchment areas resulting into washing away of the soil to the Brahmaputra river. Again water pollution in the region also shows a marked<sup>xi</sup>.

Along with other parts of North-East India ecology and environment of Barak Valley region is also gradually changing. Shortage of rainfall and continuous deforestation are assumed by ecologists as major determinants of ecological change in this region. Water bodies of Barak valley are losing depth day by day. The low lying lands of the region are gradually filled with humus. People's dependence on water body is gradually turning into dependence on land for cultivation and other occupations. A vast majority of fish farming community is gradually adapting with changing ecological and environmental situations<sup>xii</sup>.

### **Livelihood issue in North-East**

People of North-East India are depended on the environment for their livelihood. They are depended on land, forest and water resources. Employment generation in the secondary sector is very low in the region. In 1996 its seven States together had 214 major and medium industries, 166 of them in Assam against 374 in the industrially "backward" Orissa. Some of them have been closed down since then and no new unit has been opened. Its result is the predominance of the primary and tertiary sectors. In 1996, 75.26% of the Nagaland workforce, 74.81% of Meghalaya, 73.99% of Assam and 70% of Manipur was in this sector against an All India average of 67.53%. The secondary sector employed around 4% of the workforce in five States and 8% in the remaining two, against an All India average of 11.97%. The tertiary sector employed around 24% of the workforce in Arunachal Pradesh followed by 20.45% of Assam, 21.46% of Meghalaya, 21.26% in Nagaland and 29% in Mizoram against an All India average of 20.5%. These sectors are saturated and cannot employ many more.

High dependence on land, forest and water causes backwardness of North-East vis-a-vis immigration induced tension and conflict from colonial age which subsequently laid the foundation of the Bodo-Adibasi and Bodo-Assamese conflict and tension with the Muslims. Land loss was the result of the coming of the East Pakistani refugees in 1947. Nepali and Bangladeshi immigrants later captured plain and forest land. Most of them displaced the local people by encroaching on their land, forests and water resources. Though focus today is on the Bangladeshis but in reality around two thirds of

the immigrants are from the Gangetic plains. They flee from the feudal system and lack of land reforms in their region to encroach on the sustenance of the people in this region. Some tribes like Chakma and Hajong who migrated to Arunachal Pradesh after being displaced by the Kaptai dam in the erstwhile East Pakistan. All immigrants captured land of the original inhabitants who subsequently started movement for their land. The shortage of the natural resources resulted in the hardening of ethnic identities and exclusive claims to livelihood to the exclusion of all others<sup>xiii</sup>.

### **Ecology of Sone Beel**

*Sone beel* is the largest wetland in Assam having an area of 3458.12 ha. During winter season water level of this wetland shrinks to an area of 409.37 ha. Length of the *beel* is around 13.2 km and breadth is 4.2 km<sup>xiv</sup>. The *beel* is mainly fed by river *Singla*. The *beel* is bounded by Chargola of Karimganj district towards north, Kalibari bazar towards east Basantapur and other villages towards south and hillocks of Dhohalia hill range and villages towards west. There are around twenty four villages situated in all sides of the *beel*.

The ecology of this region has direct influence on life and livelihood of the people of *sone beel* and its surrounding localities. Ecological situation of this region couple of years back was not similar with the contemporary situation. *Sone beel* is connected with two major rivers of the valley namely *singhla* and *kochua*. Other small rivers and canals are also connected. But the river *Singla* contributes almost eighty percent of water of *Sone beel*. Depth of river *Singhla* is gradually decreasing due to deforestation, soil erosion and land sliding in the hills of Mizoram from where it originates. Consequently low lying land of the river basin including *Sone beel* is getting filled with sand and humus. Flood caused by overflow of river water in summer was a major problem of this region few decades back which was partially controlled by government through embankment and other alternative measures. From 1998's onwards severe flood caused by overflow of river water is not witnessed by people of this locality. But the problem which most of the people of southern part of *Sone beel* have been experiencing since recent past is problem of water logging in the cultivable field during summer. Rain water gets logged due to mismanagement of canals by local people and lack of maintenance of river embankment.

Depth of *Sone beel* is decreasing day by day due to several reasons. Siltation is one of the major factors followed by dumping of garbage and disposal of sewage which causes reduction of depth of the *beel*. Huge amount of sand and humus is getting deposited by the river *Singla* in the *beel*. Moreover, due to shortage of rainfall, water does not remain in entire *beel* through out the year. During winter water level reaches to the deepest

part of the *beel* and the upper part becomes a vast cultivable land. There are number of small *beel fisheries* in the deepest part which does not remain common property of fishermen in winter. These small *beels* fisheries are either government fisheries or private fisheries under possession of rich people. Government *beel* fisheries are under control of an organisation named as Sone Beel Fishermen co-operative Society Limited (SFCSL). The registered members of this organisation can fish any where in the government *beel* fisheries. SFCSL takes lease of the *beel* fisheries from Assam Fishery Development corporation, government of Assam. In summer season the entire *Sone beel* is filled with river water and the entire *Sone beel* becomes common property of the fishermen. Fishing is now a seasonal occupation for most of the fishermen. They search for other alternative occupations in dry season.

Due to changing ecological situation, many flora and fauna are getting extinct day by day. Different variety of fish, for which *Sone beel* was popular in the locality earlier, are not available now a days. Two varieties of fish locally known as *lacho* fish (*cirrhinus reba*) and *chapila* fish (*gudusia chapra*) are hardly found now. Variety as well as the quantity of fish is gradually decreasing. Bushses of plants were visible earlier but these are not available now a days. Variety of grasses were available earlier for which the farmers from distant places used to migrate temporarily with their cattle and buffalo in dry season. But now grass is not available like earlier and migrants are also not coming for rearing cattle in the field. Trees named as *hijol* (*baringtonia actangula*) were available in huge number through out entire *Sone beel* but these are very rare now. Migratory birds particularly Siberian birds used to visit *Sone beel* during winter but these are hardly found at present.

### **Social history of People**

Majority of the people living at *sonbeel* are *Kaibartta* who belong to scheduled caste community. *Patni*, another scheduled caste community, is also found in surrounding villages. *Patni* is settled mainly in three villages of east part of *Sone beel* viz Anandapur, Devaddar and Gamaria. *Patni* settled in these villages during British period. They were brought from Jaldhup locality of undivided Bangladesh by the than Zamindar Kumar Bahadur. Their traditional occupation was boating and fishing. Gradually they started agriculture in the unused land of upper part of the *Sone beel*.

*Kaibartta* migrated to Barak Valley from Bangladesh during partition of India and a bulk proportion of their population settled at *Sonbeel*. To prevent their settlement in this region several social unrests and violent protests were done by the local people who mainly belong to muslim community. As per the oral history, just after their settlement at *Sone beel*,

*Kaibartta* started to torture local Muslim people living in surrounding villages. They were not only plundering their rice, vegetables, pets and other resources. They also tried to hit on religious sentiment of Muslims. It is said that a severe riot took place between Hindu and Muslim when *Kaibartta* tortured a Muslim pious man of the near by village *Kudali*. When the news was spread in the locality a severe communal riot took place. After immediate intervention of local police station as well as district administration the riot was controlled. Many Muslim families could not reside in that locality after that riots. They shifted to villages far distant away. It is also said that Muslim families of *Kudali* village left their land and resources which was later on captured by *Kaibartta*.

*Kaibartta* faced lot of difficulties in the initial stage of their settlement. Initially they were helped by other Hindus particularly *Patni* and *Namasudra* residing in surrounding villages. *Kaibarttas* were expert in fishing but they immediately did not get fish market in locality because local people used to catch fish for their own consumption. Therefore, in the initial stage of their settlement, they were in tremendous need and support of local people. *Patni*, *Namasudra* and other Hindus helped them with some resources needed for their livelihood. They also got government support to cope with the new situation. *Kaibartta* started fishing and worked hard for selling fish in nearby markets. Gradually fishing becomes their permanent occupation.

Muslim fishermen, Hindus other than *Patni* and *Kaibartta* are also residing in *Sone beel*. *Namasudra*, another scheduled caste community is found in some of the villages. Upper caste Hindus are very rare and mainly residing in near by markets.

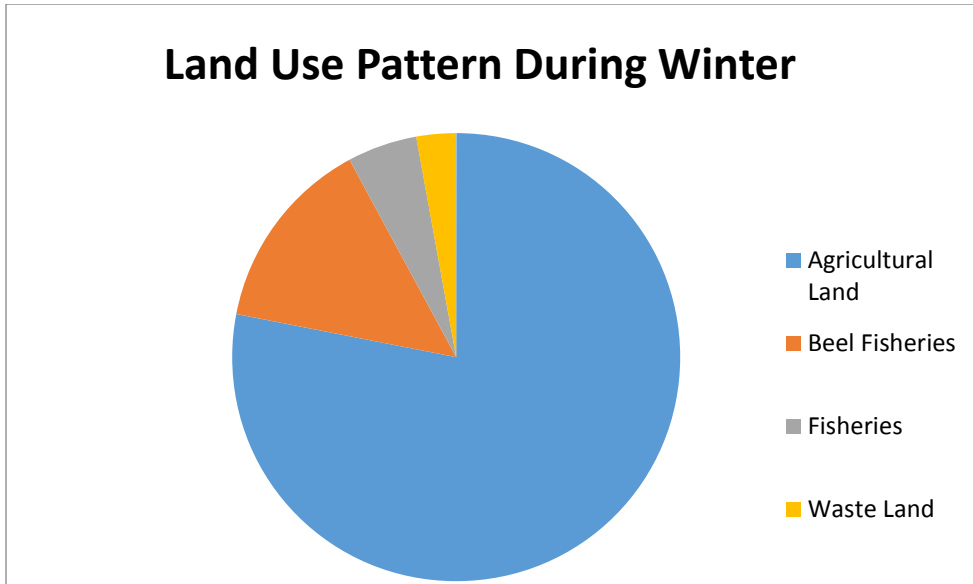
### **Challenges for Livelihood**

*Kaibartta* settled on all sides of *Sone beel* and they were solely depended on it for their livelihood. Fishing was the principal source of livelihood for majority of the villagers. People engaged themselves in fishing from the month of April and they used to continue this profession up to the month of November or december in every year. From the month of January water completely got disappeared and *Sone beel* became a vast cultivable land favourable for producing paddy. People used to cultivate a special variety of paddy, locally known as *buro*, during winter season and harvested it in the end of spring. Harvesting of *buro* depended on nature. Farmers could not harvest properly if excess of rainfall and thunderstorm started early in the end of March. Around 40 percent of the farmers whose land was comparatively at better height could harvest their crops before beginning of continuous rainfall. Rest of the people's fate was decided by nature.

There was a folk magical practice, which is also prevalent now, in this region for saving crops from rainfall and thunderstorm. A popular belief prevailing among farmers of *Sone beel* is that beginning of rainfall can be delayed and thunderstorm can be displaced to another region by a magician who is locally known as *zeeral or hiral*. A *zeeral or hiral* is believed as enough powerful man who has control over cloud, rainfall and storm. Every year he uses to perform magical activities to delay rainfall and storm. He dances in the open field without dress and chants magical words when black cloud is seen in the sky. He keeps on continuing magical practices till the cloud disappears. During rainfall also he performs magical activity to decrease the intensity of rain. *Ban*, a special magical activity is done for avoiding or displacing storm from the sky over their field. *Zeeral* is highly honoured and paid by all the farmers if harvesting is safely done.

Land of *Sone beel* is used for fishing and agriculture. Fishing is done during summer. During summer the entire *beel* becomes vast wetland which is used as common property of people. The vast water body is used for purposes of fishing and communication. Different variety of nets are used for catching fish. Even very small fishes are caught by using a special nets. Communication becomes better in summer for people of east and north part of *Sone beel*. People of one part can easily reach to another part by machine boat. Some boats are run manually by boatmen. People of east part suffers a lot to reach their district town Karimganj during winter. But during summer they reach to district town via Fakua Gram railway station situated in west part of the *Sone beel*.

When water reaches to the lowest part of the *beel* during winter the entire *beel* becomes private property of people who claims their rights on cultivable land, fisheries and *beel* fisheries. Total estimated area of *Sone beel* is around 3458 hectares. Most of the land becomes cultivable land during winter. The land use pattern is shown below.



Out of total 3458 hectares of land, quantity of cultivable land during winter is around 2700 hectares followed by *beel* fisheries 485 hectares, fisheries 174 hectares and waste land 99 hectares. Above table shows that contribution of cultivable land during winter to the total area of *Sone beel* is around 78% followed by *beel* fisheries 14%, fisheries 5% and waste land 3%.

Impact of ecological change is almost same in all parts but people of different parts of *Sone beel* are adjusting with the changing situation in different ways. The villages in west and south bank are comparatively in better position than the villages of east and north bank due to better transportation and communication. Most of the villages of east and north sides are backward. Some villages in the east side are badly affected by river *Singla* due to excess of sand deposition on their land. They can not grow any crop in all seasons. People of these villages are poor and illiterate. They are in serious problem of livelihood. Due to poor socio-economic background, poor means of transportation and communication they are not able to move forward in search of alternative means of livelihood. Majority of them are still engaged in fishing and work as day labourer or agricultural labourer in dry season. However, few villages of the east bank, which are located in comparatively high land, are getting some added advantage of humus deposition. They are not solely depended on fishing because they can produce crops twice in a year in their field. They are self sufficient within their village despite of backward transportation and communication.

Villages in the west and south part, because of their location nearby railway station, are in better position. Villagers are not only engaged in



fishing but also continuing other subsidiary occupations. Most of them have occupied land in forest behind the village and engage themselves in forest based occupations also. Many people of these villages are going to town for work in the morning and coming back by train at night. Ladies sell dry fish, firewood and puffed rice in the district town. People are also sending their children to near by schools and after schooling they are going to district town easily for higher education. People of the west sides are highly mobilised. Number of government employees are increasing day by day. From the survey conducted in 5 villages of west part it is observed that these villages have produced 4 university teachers, 3 colleges teachers, 8 subject teachers of higher secondary schools, around 30 graduate and diploma engineers, 2 doctors and many other government employees. Opportunity for self employment is more in these villages. Good number of retail shops are found in a market which is built in the centre of villages. Unemployment is not a burning problem for them. A significant number of educated youths are working in private sector in metropolitan cities like Bangalore, Delhi and Mumbai. Educated youths are also participating in local politics. A good number of rural political elites have emerged in these villages after implementation of three tier system of Panchayat Raj. They have a strong hold in their local politics but their participation in state and national politics is not so significant. Electricity is available in almost all households. Supply water plants are available but all households are still not covered with the scheme. Good number of tube wells and ring wells are available. But people are not satisfied with the role of local politicians in the socio-economic development of the villagers. Benefit of government schemes are not properly percolating down to the beneficiaries. Local panchayat leaders are manipulating most of the schemes including housing, rural roads and drainage for their personal interest.

Government policies and programmes are formulated to safeguard the people of *Sone beel* but these programmes are not properly implemented for the betterment of people. The people are not organised to overcome their problems. Few social organisations are working with people but their effort is not sufficient to facilitate the poor people of *Sone beel*.

## **Conclusion**

People of *Sone beel* are completely depended on nature for their livelihood. As a result of climate change livelihood becomes a burning problem for them. They are struggling hard for survival. The two fishing communities *Patni* and *Kaibartta* who are solely depended on this *beel* are having long tradition of poverty, illiteracy and backwardness. They are in vicious circle of poverty and it is almost impossible on their part to overcome this situation. Their problem should be studied with keen interest

by the academicians, bureaucrats and political leaders to save them from destruction caused by nature.

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