CHAPTER VI

TRADITIONAL STATUS OF FISHING GEARS

Research Question: *How much traditional the gears of Assam are which are being in use in different beels?*

TRADITIONAL STATUS OF THE FISHING GEARS

INTRODUCTION

Mesolithic period started during post Pleistocene or Holocene period. It is during Mesolithic period cultural or economic diversity in subsistence pattern made it apparent. This was in coordination with the changed diverse nature of ecological condition.

With the shift of glaciation's the landscape and the floral and faunal pattern underwent drastic changes. And that leading to the emergence of diverse subsistence patterns developed over same time plane. Previously, during Paleolithic period man was dependent on hunting and gathering. Deep-water fishing was there in Mediterranean Europe (Clerk, 1952).

When the ice started melting and filled in the depressed area over Europe and glaciated zones, there developed a kind of subsistence pattern mainly dependent on fishing. The earliest evidence of using hook was reported from different parts of Mesolithic and Neolithic context of Europe. The first fishing gear was reported from Mesolithic site at Fyum in Middle East (Singer, 1965). The size and shape of the gear corresponds to the gear used by the peoples in different parts of North-east India. As regards the fishing nets nothing can be said with certainty. The sink, some terra cotta and elongated cylindrical objects were reported from Europe resemble to present day used sink in the net by the people of India and Assam. But these do not make us to draw any conclusion about the use of net from prehistoric period.

Assam has a tremendous potentiality of beel fisheries. The activities of fishermen and their socio-economic condition have been influencing the development and utilization

of its fishery resources in a significant way. The aspect has gained importance in view of the inferior social status and over fishing of the beels by the unprogressive poverty-stricken people.

The fisher-folk of Assam belongs to four principal communities viz., the *Kaibarta*, the *Patni*, the *Maimal* and the *Namasudra* (Dey, et al., 1989). More the local tribes, such as *Bodo, Rabha, Laluk,* etc also engaged in fishing in the surrounding beel fisheries.

The present chapter purports an account of the traditional status of the fishing gears used in the beel fisheries of Assam.

REVIEW OF LITERATURE

No report on such type of work has been reported so far in Assam as well as North – East India. A description of indigenous fishing methods and fish catching composition of Dal Lake, Srinagar, has been reported by Shyam Sunder et al. (1978). Kulshreshtha (1986) described on the traditional inland fishing methods in Rajasthan. In his report he included the constructional designs as well as various fishing methods, which are being in use in the inland water of Rajasthan. Khan et al. (1992) described the indigenous fishing gears of the Hirakud reservoir, Orissa. Likewise, Mishra (1994) dealt with the fishing gears, which are employed in the riverine fisheries of West-Champaran district of Bihar.

Day (1910) conducted a survey on the fishing gears and methods in the eastern Bengal including Assam and reported about the various types of fishing gears and methods found in the river system as well as in the beel fisheries of Assam. Likewise, Joseph et al. (1965) classified different types of gears, which are used in beels as well as in the River Brahmaputra of Assam. Yadava et al. (1981) described the indigenous fishing device, *Katal* fishing, which practiced largely in the beels of Assam. The same

author in 1986 explained about the *Banas* fishing, which is also an indigenous fishing device of the beels of Assam. The nets and traps of Kamrup district of Assam have been described by Bhagawati et al. (1987). Similarly, Dey and Kar (1989) categorized the fishermen in four categories, viz., the *Kaibarta*, the *Patni*, the *Maimal*, and the *Namasudra*.

MATERIALS AND METHODS

To observe the traditional status of most commonly fishing gears such as *musarijal, dolijal, berjal, gill nets (phansijal, and langijal), khewlijal, dhenkijal, horhorijal,* and *parangijal*; Section IV of the questionnaire has been followed. The questionnaire includes about the origin, any structural modifications and the approximate age of the gears, which are being in use in the beel fisheries of Assam and also the major communities who use the gear.

OBSERVATIONS

According to the data collected in different beels of Assam, the approximate age of the gear, their probable origin and about the communities of fishermen of Assam who mostly used the gear have been described below:

1. ENCIRCLING GEARS

Musarijal

Table-6.1 shows that the approximate age of the gear is about 45 to 50 years. Thus, it came much later than the other types of encircling gears. About the origin of the gear it has been reported that the gear is indigenous in origin. Since the origin there has not any structural changes been reported. Mostly the Maimal community uses the gear.

Berjal

The gear has been used in the beel fisheries of Assam since 80 to 90 years ago. It has reported to be originated in Sylhet, Tippera, Mymensingh, Dacca, Bakargunj, Pabna and Faridpur of Bangladesh. From the origin of the gear mesh size and method of operation has been found changing and accordingly gained different names, such as Panijal, chellajal, Gullijal, Chatjal, and tanaber. The gear has been found to be used by Maimal, Kaibarta and Namasudra community of fishermen.

Khewalijal

Khewalijal is found in use in the beel fisheries of Assam since 85 to 95 years ago. The gear has been reported to be originated in Kamrup, Nagaon and Darrang districts of Assam and Malda of West Bengal. Moreover, it is also reported to be originated in rajshahi, Pabna, Bogra, Dinajpur, Noakhali, Chittagomg and Dacca provinces of Bagladesh. Though the shape of the gear is same since its origin, mesh size, addition of pocket like structures and size of the gear has been found to be changed. The larger sized khewalijals with pockets at its circumference is known as 'Otharjal', which has 180 feet circumference.

2. ENTANGLING GEARS

Gill Nets

The approximate age of the gill nets in the beels of Assam has been found to be 85 to 95 years. The gill nets are reported to be originated in Kamrup, Darrang, Nagaon, Sibsagar districts of Assam. Further, it has also been reported to be originated in Chittagong and Pabna provinces of Bangladesh. According to the data the gear has been found changing in its fabrication, use of floats and sinkers, mesh size and method of operation. Previously, the gear was made of cotton but now-a-days nylon threads are also used in the fabrication of the gear. When sinkers are not used it is named as phansijal instead of langijal, which bears sinkers at its foot - rope. The mesh size of gill nets have also been found changing and named behind the fish species

sought such as puthi langi, mola langi, kaoi langi, goroi langi, ari langi, sittica langi, ilisha phanasi, rau phansi, karal phansi, and ari phansi.

3. SCOOPING GEARS

Dhenkijal

Dhenkijal, which is also known as ghatjal is found in use in the beel fisheries of Assam since 80 to 90 years ago. It has been reported to be originated in Nagaon, Lakhimpur, Sibsagar, and Cachar of Assam. Moreover, it has also been reported to be originated in Faridpur, Rajshahi and Pabna of Bangladesh. As far as the present study is concerned there is not any change regarding its design details have been found. The gear is used mostly by maimal, kaibarta annd Namasudra.

Parangijal

Parangijal or dharmajal or sipjal is originated about 80 to 90 years ago in Malda and Jalpaiguri of West Bengal, and Bakargunj of Bangladesh. Study also reveals its origin in the Garo Hills and Cachar districts of Assam. Since its origin there is not any change in its construction and fabrication has been reported. Parangijal is found to be used by all fishermen community of Assam, such as Maimal, Namasudra, Koibarta, Patni and also by local tribe such as Boro and Rabha.

Thelajal

Thelajal or ghokotajal is the commonest form of scooping gear. It has been reported to be originated about 100 to 120 years ago in Goalpara of Assam and Khasiya Jayantia Hills of Meghalaya. It has also been found to be originated in Jalpaiguri and Malda of West Bengal. Further, it has been reported from Mymensingh and Sylhet of Bangladesh. Regarding design details no changes have been reported since the origin of the gear. All fishing communities and local tribes use the gear.

4. TRAWLING GEARS

Moijal

Moijal or dolijal has been found to be originated about 60 to 70 ago in Nagaon and Darrang districts of Assam. The gear has also been reported to be originated from Pabna, Rajshahi, Mymensingh provinces of Bangladesh. No Changes either in fabrication or in method of operation of the gear have been observed. It is used by Maimal communities of Cachar, Karimgunj and Dhubri districts of Assam.

Horhorijal

The gear has been found in use in the beel fisheries of Assam since 75 to 85 years ago. As far as the present study is concern it has been observed that the gear was originated in Goalpara of Assam, Jalpaiguri of West Bengal and Mymensingh of Bangladesh. Regarding the construction and method of operation no changes have been observed. The gear is found to be used by Maimals.

Shanglajal

The study shows that the age of the gear is about 90 to 95 years. It has been found to be originated in Cachar and Karimgunj districts of Assam, and also in Bakargunj, and Sylhet provinces of Bangladesh. Regarding the design details no changes have been observed. Maimal community uses it.

5. HOOKS AND LINE FISHING

Hooks and line fishing is perhaps the earliest fishing gear, which has been found in use in the beels of Assam since 120 to 130 years ago. Regarding the origin of the gear it has been found to be originated locally in Sibsagar districts of Assam, and Bakargunj, Tippera, Dacca, Sylhet and Rangpur of Bangladesh. But the smaller iron hooks are found to originate somewhere in Europe.

The study shows that there are so many changes have been made in hooks and line fishing. Instead of smaller hooks of European origin, larger hooks have also been designed locally by the blacksmiths and the *Bebajians* of Assam. Moreover, hooks made up of bamboo has also been found in use in different beels. Hooks and line fishing is practiced by all fishing communities like the Maimal, the Namasudra and the Patni and also by local tribes, such as Laluk, Bodo, and Rabha.

6. TRAPS

Polo

Polo has been found in use in the beel fisheries of Assam since 90 to 95 years ago. During the present survey it has been reported to be originated in Goalpara of Assam, and Jalpaiguri and Malda of West Bengal. Since the origin the shape and mesh size have been found changing from time to time and place to place. Though the earlier days polo had larger (20 – 30 mm) mesh size later the smaller mesh sized (5 – 10 mm) polos are also designed to capture smaller groups of ichthyospecies. Namasudra and Kaibarta of fishing community and mostly use this trap also by local tribes.

Juluki

The gear is found in operation in the beels of Assam since 70 to 80 years ago. It has been reported to be originated in Assam. No remarkable changes in its construction have been reported since the origin of the trap. Namasudra, Koibarta, Patni and local tribes of Assam use it.

Jakoi

Jakoi is the commonest form of trap used in the beel fisheries of Assam since 80 to 85 years ago. The gear is reported to be originated locally in Assam. It has also been reported to be originated simultaneously in Noakhali and Rangpur in Bangladesh. Since the origin no changes either in construction or in the mode of operation has been reported. All fishing communities and the local tribes uses the gear.

Ghani

The trap is found in use since 80 to 85 years in the beels of Assam. It is reported to be originated in Assam, and Jalpaiguri of West Bengal. Though no changes in its construction have been reported but the size of the trap found changing across the beels. All fishing communities and local tribes use it.

Chepa

Chepa is also one of the commonest forms of trap, which is found in use since 100 to 110 years ago. The trap is reported to be originated in Sibsagar and Nagaon districts of Assam. Regarding design details no changes have been observed since its origin but shape and size of the trap is found changing in different beels. All fishing communities and the local tribes of Assam uses this trap.

Dingora

Dingora or dingori is also one of the commonest form of trap used in the beels of Assam since 90 to 100 years ago. It is also indigenous in origin. Since the origin of the trap no changes have been reported regarding its design details but shape and size keep changing from time to time and place to place. All fishing communities and local tribal peoples also use it.

Darki

Darki is found in use in the beel fisheries of Assam since 90 to 100 years ago. It was originated somewhere in Eastern Bengal and then came to the beel fisheries of Assam. Though no changes in its design details have been observed since its origin but the shape and size of the gear is found to be vary from beel to beel. All fishing communities and local tribes use it.

Dalangi

It is also one of the commonest form of trap, which is observed in the beel fisheries of Assam since 90 to 100 years ago. It has been found to be originated in Nagaon and Kamrup district of Assam, and simultaneously in Noakhali and Dinajpur of

Bangladesh. Though no changes in its design details have been noticed since its origin but the shape and size of the trap is found toi vary across the beels. The trap is used by all fishing communities and local tribal peoples.

Thorka

Thorka is found in the use in the beels of Assam since 65 to 75 years ago. It has been reported to be originated in Jalpaiguri of West Bengal, and Pabna province of Bangladesh. No changes in its construction and mode of operation have been reported during the present survey. It is found to be used by local tribes.

Bamidhara, Cherha and Khoka

These three traps are found in operation in the beels of Assam since 65 to 70 years ago. All the traps are reported to be originated locally in Assam. Since their origin no changes in either in design details or in the mode of operation have been noticed. These traps mostly used by the local tribes of Assam.

Chunga

Chunga is used in the beels since 60 to 70 years ago. This trap id found to be originated in Sibsagar district of Assam. Regarding its construction no changes have been reported. The local tribes mostly use this trap.

7. IMPALLING GEARS

Impalling gears, such as jonger, aphari, tiara, dukathi etc. are found in the beel fisheries of Assam since 110 to 120 years ago. All the impalling gears are found to be originated in different districts of Assam, such as Jongar in Kamrup, aphari in Nagaon, and tiara in Cachar districts. Regarding the design details no remarkable changes have been observed. In case of Jongar bamboo stripes used instead of iron rods. These impalling gears are used by Maimal, Kaibarta, and Patni of the fishing communities and also by the local tribes.

DISCUSSION

Ecological aspects of fishery and behavioural traits of fishery are two major criteria for evolving suitable fishing methods (Kuriyan & Sebastiyan, 1976; Lagler, 1978). Beels are unique ecosystems. They apparently look like a lake or a reservoir, but differ from them in having a connection to rivers at least at certain period of the year. The physical and chemical properties of water and abundance of vegetation in the beels are, therefore, liable to change during different seasons of the year. The composition and abundance of fish in the beels also vary considerably from time to time acroos the beels. This demands suitable fishing gears to be operated different season in different beels of Assam.

The fishermen community, such as *Kaibarta, Patni, Maimal,* and *Namasudra* (Dey and Kar, 1989) and also local tribes around the beels of Assam, by their age long experience has developed a wide array of fishing gears and methods.

The present research reveals that at least among the encircling gears khewalijal evolved earlier in comparison to berjal and musarijal. On the other hand, the Maimal community in the beels of Assam introduced musarijal much later. Further, though musarijal has an indigenous origin, berjal and khewalijal are found to originate in Assam as well as Bangladesh. Since the origin, except musarijal in other two gears show changes in their mesh size. Though musarijal is used by mostly Maimals, berjal is used by Maimals, Koibarta and Namasudra and Khewalijal by all fishing communities and local tribes.

The study reveals that (Table. 6.1) entangling nets (phansijal and langijal) have evolved at least 85 to 95 years ago in the beels of Assam. Though these nets are found to be originated in Bangladesh but simultaneously it has also been found to be originated in Kamrup, Darrang, Nagaon, and Sibsagar districts of Assam. Depending upon the availability of fish species different types gill nets have been evolved and

are named after the fish species sought. All fishing communities of Assam use these gears.

Scooping gears, such as dhenkijal, parangijal, and thelajal have also been found to be dual origin, i. e. Bangladesh and Assam. But these gears do not show any remarkable changes either in their construction or in mode of operation. Local tribes use these gears and all fishing tribes of Assam except the Patni.

Likewise, three main types of trawling gears, such as horhorijal, moijal or dolijal, and shanglajal have been found in operation in the beels of Assam. Among these gears shanglajal evolved much earlier (90 to 95 years ago) than the other two types. On the other hand, dolijal introduced much later (Table.6.1) in the beels. All the trawlers are found to be originated in Bangladesh and simultaneously in Assam. Maimal community mostly operates these gears.

Of the fishing gears perhaps the hooks and line fishing are the earliest form of fishing device to be evolved. Though the smaller iron hooks are made by European countries, but larger iron hooks and also bamboo hooks are made locally by the blacksmiths and local people respectively. Hooks and line fishing is the only fishing device, which is used by all fishing communities, local tribes and also by non-fishing communities (i.e. general people).

The study reveals that there are at least 13 types of traps are used in the beels, such as polo, juluki, jakoi, ghani, chepa, dingora, dalangi, thorka, bamidhora, cherha, khoka, and cheap. Of these traps dingora, darki, boldha, and cheap are found as the indigenous fishing traps of the beels of Assam. This is in support with Bhagawati et al., 1987. Moreover, the present study shows juluki, bamidhora, cherha, khoka and chunga are also evolved indigenously though there are no reports available in support. On the other hand, polo, jakoi, ghani, dalangi and thorka have the dual origin i.e. Bangladesh and Assam. This is also in support with Day, 1910. These traps are found

to be used by all fishing communities and local tribes. But specially, thorka, bamidhora, cherha, khoka, and chunga are mostly used by the local tribes.

Finally, among the impaling gears all fishing spears, such as jongar, aphari, tiara are found to be originated in the beels of Assam at least 110 to 120 years ago. Since the origin no remarkable changes have ben observed in case of these gears. But jongar, which are made of iron rods earlier are also made with bamboo stripes. These gears are mostly operated by Maimal, Patni, Kaibarta, and local tribes.

CONCLUSION

From the study it is evident that the gear, which are being in use in the beels of Assam are either indigenous or are evolved in the neighbouring country, Bangladesh. Moreover, since the origin no major changes have been made either in the construction and fabrication or in the mode of operation of the gears, but in case of nets mesh sizes are found to be changed from time to time across the beels. Mostly, in case of gill nets the mesh sizes are found to vary greatly.

Table- 6.1 Age and origin of the gears

Type of Gears	Name of gears	Age of the gears (Years)	Origin of Gears (Probable)	Any Structural changes	Use by the Communities
Encircling Gears	Musari	45 - 50	Assaam	No Remarkable changes have been made.	Maimals
	Berjal	80 - 90	Sylhet, Tippera, Mymensingh, Dacca, Bakargunj, Pabna, and Faridpur of Bangladesh.	Changes in Mesh- Sizes	Maimal, Kaibarta, and Namasudra
	Khewalijal	85 - 95	Rajshahi, Pabna, Bogra, Dinajpur, Noakhali, chittagong, and Dacca of Bangladesh; and also in Kamrup, Nagaon and Darrang of Assam.	Larger in size (Circumference 180 feet) and named as 'Othar jal'.	All communities and local tribes.
Entangling Gears	Phansijal, and langijal	85 - 95	Kamrup, Darrang, Nagaon, and Sibsagar of Assam; Malda of West Bengal; and Chittagong, and Pabna of Bangladesh.	Changes has been mase in mesh bars and named after the species sought.	All communities, and local tribes.
Scooping	Dhenkijal	80 - 90	Sibsagar, Cachar,	No	Maimal,

Gear			Nagaon, Lakhimpur of Assam; and Faridpur, Rajshahi and Pabna of Bangladesh	remarkable changes have been made.	Kaibarta, and Namasudra .
	Parangijal	80 -90	Gari hills and Cachar of Assam; Malda and Jalpaiguri of West Bengal; and Bakargunj of Bangladesh.	No remarkable changes have been made.	All fishing communitie s and local tribes.
	Thelajal	110-120	Goalpara of Assam; Khasiya and Jayantia hills of Meghalaya; Jalpaiguri and Malda of West Bengal; and Sylhet and Mymensingh of Bangladesh.	No remarkable changes have been made.	All fishing communitie s and local tribes.
Trawling Gears	Horhorijal	75 - 85	Goalpara of Assam; Jalpaiguri of West Bengal; and Mymensing of Bangladesh.	No remarkable changes have been made.	Maimals
	Moijal or Dolijal	60 - 70	Nagaon and Darrang of Assam; and Pabna, and Mymensingh of	No remarkable changes have been	Maimals

			Bangladesh.	made.	
	Shanglajal	90 - 95	Cachar of Assam; and Bakargunj, Sylhet of Bangladesh.	No remarkable changes have been made.	Maimals
Hooks and line Fishing	Smaller hooks, Larger hooks, Dhan-barshi and Kaoi-barshi.	120-130	Nagaon, Sibsagar of Assam; Bakargunj, Tippera and Dacca, Sylhet, Rangpur of Bagladesh; and Some European countries.	The shape and size of hooks have been changed.	All communities, local tribes and non-fishing general peoples.
Traps	Polo	90 - 95	Goalpara of Asam; and Malda and Jalpaiguri of West Bengal.	Size of the polos and their mesh sizes have been changed.	Namasudra, Kaibarta, and local tribes.
	Juluki	70 - 80	Assam	No remarkable changes have been made.	Namasudra, Kaibarta, Patni, and local tribes.
	Jakoi	80 – 85	Assam; and	No	All

			Noakhali, and Rangpur of Bangladesh	remarkable changes have been made.	communities and local tribes
	Ghani	80 – 85	Assam; and Jalpaiguri of West Bengal.	No remarkable changes have been made.	All communities and local tribes
	Chepa	100–110	Sibsagar and Nagaon of Assam.	No remarkable changes have been made.	All communities and local tribes
	Dingora	90 – 100	Sibsagar and Nagaon of Assam.	No remarkable changes have been made.	All communities and local tribes
	Darki	90 – 100	Assam	No remarkable changes have been made.	All communities and local tribes
	Boldha	90 – 100	Assam	No remarkable changes have been made.	All communities and local tribes
	Dalangi	90 – 100	Nagaon and Kamrup of Assam;	No remarkable	All communitie

			and Noakhali, and Dinajpur of Banglaesh.	changes have been made.	s and local tribes
	Thorka	65 – 70	Jalpaiguri of West Bengal; and Pabna of Bangladesh.	No remarkable changes have been made.	Local tribes
	Bamidhara	65 – 70	Assam	No remarkable changes have been made.	Local tribes
	Cherha	65 – 70	Assam	No remarkable changes have been made.	Local tribes
	Khoka	65 – 70	Assam	No remarkable changes have been made.	Local tribes
	Chunga	60 –70	Sibsagar of Assam.	No remarkable changes have been made.	Local tribes

Impalling Gears	Jongar	110–120	Kamrup of Assam.	No remarkable changes have been made.	Maimal, Patni, Kaibarta, and local tribes.
	Aphari	110–120	Nagaon of Assam	No remarkable changes have been made.	Maimal, Patni, Kaibarta, and local tribes.
	Tiara	110-120	Cachar of Assam	No remarkable changes have been made.	Maimal, Patni, Kaibarta, and local tribes.