

## **CHAPTER-9**

# **FINDINGS, CONCLUSION AND RECOMENDECTIONS OF THE STUDY**

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### **9. 0.Introduction:**

The study entitled “Problems and Prospects of Fishery Sector in Assam” (with Special References to Government Registered Fisheries in Sivasagar, Nagaon and Cachar Districts”) has been made after prolonged verification, observation, interview and systematic methodology by the investigator of the study area.

The study consists of nine chapters which are – Chapter 1- Introduction, Chapter-2- Review of literature, Chapter-3- Present Status of fishery sector in the state, 4- Profile of the study area, Chapter-5- Socio-economic Status of fishermen in the study area of Assam, Chapter 6- Role of Co-operative Societies, SHG’s and NGO’s of the fishery sector in the study area, Chapter-7- Problems and Prospects of Fishery Sector in the Study area, Chapter- 8- Various policies and schemes implemented by the government to sustain the fishery sector in the state and Chapter-9- Findings, Conclusion and Recommendation of Study. The results of the entire study may be summed up as below.

### **9.1. Summary of Principal Findings:**

- The important finding of the study is that the fishery resources are available in the state where most of the people in the rural area are able to get livelihood. But it is also found that some water bodies have not been still included under the state government regimes. The study focuses that the fishery is a prospective sector for the rural economy in the state and the Union Government recognizes the fishery sector as is an allied agriculture sector.

- One of the major findings in the study is that despite the availability of river and beel fisheries in the state, the state is not able to meet up the demand and the demand has been met up by importing fish from different states within the country. Though the natural fish production increases some tenure but this increasing rate of fish production is not sufficient for meet up the demand. The state has a good environment for natural fish production which the government can make a revolution for growing the fishery sector. But the study finds that the state government has not been able to take proper plan and strategy for meeting up the gap of demand and supply.
- One of the important finding of the study is that there are various kinds of indigenous fish in the river and beel fisheries of the state which have already mentioned in the previous chapter. These indigenous fish are very popular with great demand in the market. So, these are very costly than the other species of imported fish. As a result the fishermen are able to get reasonable price from the indigenous fish. From the entire study it can be traced that there is a huge gap for taking necessary steps by the concerning authority to introduce the various species of indigenous fish in the country and abroad.
- The Government registered river and beel fisheries in the state are run by a good management of the fisheries co-operative societies, self-help group and non government organization. Mainly the department of fisheries, Assam fishery Development Corporation, zila parisad and panchayat plays an important role for leasing the fisheries in the state.
- As a socio-economic analysis, the study has observed some important factors about fishermen communities. The age factor of the fisherman is one of the important factors. The output of work mainly depends upon the age factor. In the study, it is seen that the 29.5 percent of the fisherman belong to the age group 41-50 which is the highest respondents engaged in this sector and around 6.20 percent respondent of the age group less than 61 -70 is the lowest engaged in this sector.

The age group i.e. 41-50 is the highest involvement in the occupation because the respondents have higher family responsibility and most of them meet up the daily requirement from the fishing.

- The marital status is one of the essential factors which affect the social status of the people, the difference in needs etc. In the study, the marital status plays a vital role for measuring the socio economic status of the fishermen. The study reflects that the majority of the respondents are married i.e 96.14 percent and 3.86 percent are unmarried.
- Another important result is found that the fisheries are fully dominated by Scheduled caste and minority (Muslims) communities. The 45.54 percent fishermen are SC and 44.57 percent fishermen of minority community involved this sector. As scheduled caste, the Kaibartta, Bania and Namasudra occupy the fishing occupation traditionally and most of the fishermen of Mimal (Bangali Muslim) community also occupies as the second dominant community in the fishing profession of the study area. Recently it has been developed that other communities are also coming to take the fishing occupation. They are forming the SHG's, NGO's and Co-operative societies by the state government where the people of the community take fishing as their livelihood.
- As socio-economic factor, the nature of the family also plays an important role in the study. In the study area, most of the respondent i.e 58.07 percent belongs to nuclear family while 48.92 percent belong to joint family. As a result, it is found that most of the respondents get married early due to illiteracy. Therefore, most of the respondents prefer the nuclear family in the study.
- The education is another main factor for determining the socio-economic development of a community. The 62.17 percent respondents are found literate. The literacy of the respondent in the study has been measured by the level of education from primary to post graduate. Out of 62.17 percent literate respondents, the majority (36.62%) respondents have the primary education. So

the important finding of the study is that majority of the respondents have only the primary level of education.

- Accommodation is another important indicator of socio-economic development of the people. The majority of the fishermen (55.42%) get the benefit of IAY housing facility under the government schemes and only 3.5 percent respondents possess their own pucca house. From the result of this study it is found that most of the respondents are very poor and so, most of them are covered by the government welfare schemes. And a few numbers of fishermen possess pucca house only because of their affordable economic status. Besides 31.56 percent respondents avail the government toilet facility and only 2.26 percent respondents avail the pucca toilet facility. A large part of the remaining respondents have katcha, semi katcha and open space also.
- As a result of the study it is found that the drinking water is the basic amenity of the respondents. Most of the respondents live in the rural area and they are very poor. So, these respondents avail tube well as the basic source of drinking water. The tube well has been found as the most popular and affordable source of drinking water facility of the 89.39 percent fishermen in the study area.
- One of the main findings of the study is that poor quality of living fishermen are higher on fishery mainly because of lack of basic amenities, overcrowding, low level of educational attainment etc. are the reasons for the poor quality of living which in turn is acting as a major player in their down ward spiral of poverty.
- Although fishing is the main occupation in the study, nevertheless, the fishermen are involving in different types of activities such as fish trading, agriculture with fishing, fishing and wage earners and fishing and other business. They are doing these types of activities in different times. Among these types, the most of the respondents (42.89%) are involved in the fishing. As an economic factor of the study mainly the 42.89 percent fishermen give concentration on fishing only. The 28.20 percent fishermen are also involved in fishing with fish trading and small

grocery shop. 28.91 percent respondents are also involved as fishermen with sometime daily wager and agriculture.

- One of the major finding of the study is that the fishing community cannot change their livelihood due to traditional acceptance of the occupation, low investment in the fishing and lack of education and finance of the fishermen.
- Income determines the standard of living and financial status. The whole income process of the fishermen in the study area is depending upon the fishing occupation. Higher income make higher standard of living. In the study majority of the respondent i.e.64.58 percent of the study has annual income level below 50,000 (fifty thousand only). They could not improve their standard of living because their low level of income. In fact the fishermen do not get fish regularly from fishing. It is very uncertain profession. On a certain day fishermen are able to earn satisfactory amount from fishing and sometimes fishermen are unable to get single rupee. Therefore from the result of the study it is seen that the fishery sector is able to provide only livelihood to the poor fishermen but most of them could not improve their standard of living.
- Food is the main component for the survival of the people. In the study it is found that most of the expenditure of the household is made on food. The huge amount i.e. 64.92 percent money is spent on food. They do not keep money for spending on other heads of the daily lives because the respondents try to maintain their family needs from their income.
- In the socio-economic context, the saving also plays an important role. From the study it is found that the respondents cannot maintain their saving satisfactorily due to their low level of income. In the study it is found that only 8.68 percent fishermen are able to save in various sources such as bank, post-office, chit fund and others. Most of them save their money at bank. And in the study the 5.77 percent out of 8.68 percent respondent save their money for buying some fishing

equipments or assets and other remaining portion of the respondent save on the purpose of wedding and education for their children.

- Borrowing is an important source of the fishermen for doing fishing preparation in the study area because most of the fishermen are very poor and they cannot do their fishing activities without help of the formal and informal source of borrowing. In the study it is found that without borrowing the majority of fishermen cannot do their fishing activities properly. Most of the fishermen borrow from the informal financial sources like private money lenders, fish traders, friends and relatives. About 61.69 percent respondents borrow money from this source because most of the fishermen need not give the interest to the friends and relatives for using the money in fishing activities. On the other hand, most of the fishermen do not pay the interest to the fish traders for using their capital. The fish traders assist and provide advance payment to the fishermen for getting the fish from the fishermen.
- As formal source, the 17.35 percent respondents borrow from the co-operative societies and commercial banks. They are very less .Most of the fishermen can not avail the borrowing facility from the formal institution and other government sponsored schemes. Therefore the fishermen get obstacles for improving their occupation as well as their standard of living.
- Another finding of the study is that the fisheries provides direct or indirect employment opportunity to the large numbers of youth through the fisheries co-operative societies, self-help group (SHG) and non-government organization (NGO).The co-operative societies are able to provide good opportunity to the majority (52.05 percent) of the fishermen. As fishermen they get facilities from the fishery co-operative societies such as fishing materials, advanced payment and getting sometimes some government welfare schemes. These facilities are enjoyed much well by the shareholders of the co-operative societies than the shareholders of self-help group and non-government organization. The fishermen

of the Sivasagar district have much involvement in the fisheries co-operative societies rather than the other two districts. In the study, a familiar characteristic found that these respondents or fishermen of the co-operative societies pay 30 percent share (daily-wise) from the fishing to the authority of co-operative societies. It has become a considerable contribution from the huge number of fishermen or shareholders of the co-operative societies. The fishermen or shareholders of the SHG and NGO have to pay 40 percent and 50 percent to the authority of SHG and NGO. The three organizations have been contributing good amount of revenue to the state government from the share paid by the fishermen.

- A serious issue has been found in the study that as per the Government act, the fishermen of the fisheries co-operative societies, self-help groups and non-government organization cannot catch the fish at their respective lease fisheries during the breeding period of fish. This period has been banned for fishing by the government but at the same time it is seen that the government do not provide any financial support to the fishermen to meet up their own deficit during that period. On the other hand, the co-operative societies, self-help groups and non - government organization are not exempted from the government revenue during the ban period of fishing. Therefore they borrow money at higher rate of interest from different private and public money lender for paying the government revenue. Most of the co-operative societies, Self Help Groups and Non - Government Organizations are unable to pay the amount of revenue to the government. As a result they are recognized as revenue defaulter as per the government regulation. Therefore the study explores this serious issue of the fisheries co-operative societies, self-help groups and non-government organization which government has not been observed seriously.
- Another major finding in the study that the flood is a blessing for fish production. In the study a hypothesis has been made that flood plays positive role on the growth of fishery sector in Assam and got a convincing result. From the result of

the study, it has been found that 92.53 percent respondents agree to it. They agree that flood is a blessing for fish production and it plays an important role for the growth of fishery sector. This hypothesis has been examined by using the statistical tool chi square. According to this tool the P- Value is less than 0.05, the null hypothesis is rejected. Thus according to the chi-Square test, there is an association between the districts and fish production. So from this test it has been clear that flood has a positive role on the growth of fisheries in Assam.

- Another major finding of the study is found that the State Government annually collect huge amount of revenue from the registered fisheries. The annual revenue has been highly increased in some river and beel fisheries of the state. The revenue status of the river and beel fisheries of the state are Brahmaputra part-2 river fishery in Sivasagar district was 405,000 (per year four lakh five thousand only) during the period 2010-2016 but in the lease period from 2018- 2022 the amount of revenue has increased to 12,05,000 (per year Twelve lakh five thousand). In other registered river and beel fisheries of the Cachar and Nagaon districts also, the revenue has highly increased. But from the study it is evident that on one hand, Government collect huge amount of revenue from the lease parties and other hand, the lease parties face painful problems for paying the huge amount of revenue to the government.
- The study identifies the eight major problems of the natural fisheries in the study area. These eight problems are respectively natural problem, marketing problem, price fluctuation problem, problem of middlemen, fish sickness problem, fishing processing problem, technological problem, and problem of fishery settlement policy. These problems hamper for increasing the production of fish in the natural fisheries of the state. Out of these problems mainly the natural problem affects the fishermen during the fishing time. These problems are identified by using the Likert five point rating scale (strongly agree, agree undecided, disagree and strongly disagree.) These all problems are tested by chi square, rank correlation

and ANOVA. According to the chi square test all null hypotheses are rejected. In the case of rank correlation, majority null hypotheses are seen insignificant except the problem of price fluctuation between Cachar and Nagaon is significant. They are negatively correlated but not highly correlated. So when the problem of price fluctuation increases in Cachar district will slightly decrease in Nagaon and vice versa. From the ANOVA test it is found that the seven null hypotheses are seen significant because the P values are less than 0.05%. The null hypotheses are rejected. These problems of three districts are not homogenous but in case of the null hypotheses the mean sickness of fish problems in all three districts are homogenous and it is accepted because the significance level is more than 0.05%.

- The state fishery sector has an ample opportunity for making dry fish. Despite the ample opportunities of making dry fish in the state the fishermen cannot take the opportunity for making huge amount of dry fish. As a result, it is found that dry fish production is the most profitable business but the process for making dry fish take much time and it is more expensive. Besides in this study, there is a growth of an extensive market for dry fish. Most of the customers of the Nagaland and Arunachal Pradesh come for buying the dry fish to Simaluguri and Amguri of Sivasagar district and the Sonari of Charaideo district. On the other hand the famous dry fish market in Jagiroad of Assam is internationally known. Most of the dry fish producer and traders in Cachar and Nagaon districts and outside the state come to the market for fish trading and some of the dry fish are being exported from the state and to other nearest country.
- It is an important finding of the study that there is a big field in the ornamental fish in the North East Region. The 85 percent ornamental fish is found in the natural water bodies of the North East Region especially in Assam. The study highlights that despite the greater economic importance of the fish in the country

and abroad, this kind of fish has not been able to get market value in the North East region.

- There is an important result found that the fishery sector has immense prospects for growing in the study area. Mainly some aspects are identified in the study such as availability of water resources, sufficient manpower, useful soil and water quality, employment opportunity, livelihood promotion, marketing prospects, dry fish production and marketing, sufficient ornamental fish and better environment for fish production. Besides from the secondary sources, it is found that the State Government provides financial support to the registered river and beel fisheries for enhancing the fish production in the natural fisheries in the state. Another particular characteristic found is that there is a good environment for fish growth in the river, pond, low lying area and beel. On the other hand, due to conservation of water bodies for special cause the fish production increases because the government does not allow for fishing in the reserve water bodies.
  
- Another finding of the study is that the various government schemes under Union and state government plays a significant role for the growth of fishery sector. In the study various schemes have been observed and found that most of the government schemes are covered in the cultured fisheries where the fish farmer gets benefit and opportunities for improving the socio-economic status. But large numbers of the natural fisheries are not covered by the various government schemes where most of the fishermen have been deprived from the benefits of the schemes. The study reveals that the government need for reforming these schemes and the schemes should provide to the fishermen of natural fisheries.

## **9.2. Conclusion:**

The study reveals that the fishery is considered as an important sector for the rural people in the study area which is mainly dominated by the scheduled caste community. The ultimate aim of the study is to upgrade the socio economic status of the fisherman by highlighting the various difficulties faced by the fishermen and fisheries. In the study, it is seen that only a few numbers of fishermen are socioeconomically developed. The observed facts on the socio-economic features indicate that the only 7.47 percent respondents enjoy with a normal standard of living compared to the other sections in the fishermen community. There is a great opportunity for improving the socioeconomic status of the fishers when it can be achieved through the development of fishery sector with its forward linkages which contribute in strengthening fishery economy of the study area. The study may be regarded as a pioneering study for the researchers, academician, government, different NGOs and other agencies.

The availability of existing fisheries resources in the state need to be exploited properly and carefully. The production of fish increases in some beel fisheries, tanks and ponds after adopting some scientific fishing techniques. Capture fishery from Barak, Brahmaputra river and beel fisheries contribute about 36 percent of total fish production, but these are also being overexploited due to indiscriminate fishing. The fish production in the capture fishery can increase through some measures like conservation, protection of breeding grounds and reduces the pollution of river and beel fisheries. Integrated development and improvement of beels would not only increase fish production of the state but could also generate ancillary activities providing employment opportunities to rural youths. Nearly 85000 hectares areas under beel fisheries are being used in traditional manner.

From the overall observation of the study the some necessary recommendations are needed for the growth of fishery sector in the state which has been given in the following.

### **9.3. Suggestions and Recommendations:**

1. Organize the unorganized natural water bodies
2. Protection of natural water bodies (beels, low lying area and rivers)
3. Prevent catching of brood stock in the natural fisheries
4. Provide Financial Support to the Leasing Parties and fishermen
5. Make Awareness among the fishermen on the different Schemes and Programmes
6. Modern Marketing and Good Infrastructure
7. Maintain Wise Fishery Settlement Policy by the Government
8. Up gradation of Basic Education
9. Fishery Education

#### **1. Organize the unorganized natural water bodies:**

In the study it is found that many natural water bodies of the state are still unorganized. They have no management. The local people catch the fish in this natural water bodies. Some-time some conflicts are occurred among the fishermen regarding the fishing. On the other hand the state government does not get the revenue from these resources. Therefore the government should organize the natural water bodies under the state government management then the economy of the state will be strengthened.

#### **2. Protection of natural water bodies (beels, low lying area and rivers):**

The natural fish production of the river and beel fisheries in the study area is mainly faced by the problems of sickness of fish, erosion and encroachment. Basically the natural problem also hampers the all-natural fisheries. Therefore, some river and beel fisheries have already lost their existence. As a result the sizes of the many beel fisheries are reducing which has been considered as an obstacle for increasing the fish production.

So the Government, fishing community and fishery owners should protect the natural fisheries from the encroachment, erosion and sickness of fish.

**3. Prevent catching of brood stock of fish in the natural fisheries:**

The fisheries co-operative society, self-help group and non-government organization should prevent the catching of brood stock of fish in the natural fisheries during the breeding period because in the period if the fishermen catch the brood stock of fish then the fish productivity will decrease. So, the co-operative societies, self-help group and non-government organization should protect their natural fisheries from fishing during the period and they need to make a financial mechanism for helping the fishermen then the catching of brood stock fish will prevent.

**4. Provide Financial Support to the Lease Parties & fishermen:**

Most of the fisheries co-operative societies, self-help groups and NGOs of the study area are not financially sound. They take lease the fisheries from the government at higher bidding rate. Many times the co-operative societies, self-help groups and non-government organizations borrow money from the different money lenders at the higher rate of interest for paying the government revenue of the fisheries. So, they are facing various problems again and again. Therefore the state government should provide financial support timely to the shareholders or fishermen of the fishery co-operative societies, self-help group and non-government organization.

**5. Make Awareness among the fishermen on the different Schemes and Programmes:**

The State Government should organize some workshops and training programme among the shareholders or fishermen in their own co-operative societies, self-help groups and non-government organizations. Because the fishermen should aware about the

schemes and programmes of the government then they can be properly availed in these schemes and they will be more benefited.

#### **6. Modern Marketing and Good Infrastructure:**

The infrastructure of fish marketing should be modern and scientific. So, the state government has needed to make some marketing centre with modern facilities nearest the fishing area. And market should extend to the nearest state and abroad which will be possible for the government intervention. Many indigenous fish in the river and beel fisheries of the state are more demandable and have their ornamental values in the domestic and foreign market. Therefore, the department of fisheries under the state government should give importance on the modern marketing and good infrastructure.

#### **7. Maintain Wise Fishery Settlement Policy by the Government:**

The state government should maintain wise fishery settlement policy for leasing the registered fisheries. The eligible party should select for leasing the fisheries without intervention in any force. Otherwise the state government will be lost the revenue as well as the fishermen of the fisheries cooperative societies, self-help groups and non-government organization will suffer many problems.

#### **8. Up gradation of Basic Education of the fishermen:**

As a factor of socio economic development, the education plays a vital role. In the study it is found that the fisher folk are educationally very poor because they spend much time in fishing activity and simultaneously they do not give importance on education. Therefore the government should provide some welfare schemes to the fishermen communities for improving the education status and should take strict role against the involvement of the child fishermen in the fishing activities. Besides, the co-operative societies, self-help group and non-government organization also should avoid the child

labour in the fishing activities and they should take some positive measures to motivate the children towards the education. Then their basic education will upgrade and their socio-economic status will be developed.

### **9. Fishery Education:**

Fishery education is necessary for proper scientific development of the sector. Fishermen of the state are neither properly educated nor trained about modern scientific fish culture or fishing. For the expansion of the fishery education, Central Government, as well as, State Government has to organize some training programmes among the fishermen and their own registered fisheries on modern fishing technique, preservation of fish, marketing, productivity of fish and different government schemes.

#### **9.4. Possible Extensions:**

The study has much possible aspects for extension in the future. The possible avenue for further research may be to analysis the impact and defectiveness of the different government policies on the socioeconomic development of the fishermen.

There is another aspect of the extension of the study that basically the study does not touch the micro finance or credit facilities of the fishermen in different financial institutions. Many times the state government has also announced various fishermen welfare schemes and programmes in association with various financial institutions and different departments of the government but due to poor financial condition and lack of education of the fishermen they can not avail these beneficial schemes.

In the study it is seen that the many beel fisheries, ponds and tanks and low lying areas also have not been still organized under the fishery department of the state government. These water bodies of fishing areas are conducted by the village public authorities and some youth associations like NGO and organization of the local area. From these unorganized water bodies, the authority cannot able to earn revenue. So government need to take necessary steps for organize these resource properly.

There is an immense marketing scope in the indigenous fish of the river and beel fisheries with the nearest states and countries where the fishery sector will be gaining more profit and popularity. The possible extension of the study on the government strategies for upgrading the marketing policies, price structure, infrastructure and status of the fish and it do not observe the marketing relations with the nearest markets of the states and countries. So, there is a good opportunity to extend the study on these aspects in coming days which will be more economically viable and effective for the sector.

It is a more important avenue for future extension is to identify the determinants of poverty among the fishermen in the study area and it will be better to examine the relation between the income of the fishermen and their correlates. Besides, it has to examine another important aspect of the study, i.e. health status of the fishermen which relates with the life expectancy. The study has a greater scope to identify the impact of health and education in the generation of income of the fisherman.

Further studies are required to measure the socioeconomic status of the fishermen using both quantitative and qualitative indicators that are suitable for local environment. At last but not least, from the entire study it is clear that there exist ample opportunities for promoting the livelihood of the rural people. The sector enhances the ancillary unit by establishing the fish based industries with market extension and most important thing is that it will be able to give more opportunities to eliminate poverty from the rural poor fishing community.