



Chapter 7
**Summary of Major Findings,
Suggestions and Conclusion**

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Summary of Major Findings, Suggestions and Conclusion

In this chapter, an attempt has been made to show the major findings and to make suggestions and conclusion.

7.1 SUMMARY OF MAJOR FINDINGS:

Summary of major finding are given below:

1. The present study depicts that fish farming were mainly taken up by the age group of 40-50 years with 51.4% of the total population and 24.6% respondents were in the age group of 30-40 years. The remaining 17% respondents belong to the age group of 50-60 years.
2. It has been observed that 93.5% of the respondents belonged to male groups and only 6.5% of the sampled respondents belonged to the female groups.
3. The study reveals that out of 370 samples, 331 samples performed fish farming as their primary occupation which accounts for 89.5% of the total respondents. The remaining 10.5% respondents performed fish farming as their secondary occupation. Fish farming activities is associated with other activities. Respondents did not perform single activities. Other activities like agriculture, business, artisans, handlooms and handicrafts, services are performed simultaneously.
4. 86.6% respondents have their own fish farm while 13% of the total respondents work in co-operative fish farm. In the study area, fish farms are mainly owned by individuals.
5. The study found out that fish farmers with graduate have the highest percentage of education with 27.8% of the total respondents. Among the sample farmers 3.5% of the respondents have no education, another 3.5% have education upto primary, 20.8% have education upto matric, 15.4% respondents have education upto higher secondary and 4.6 5



respondents have education upto post graduate. Thus, it can be said that maximum sampled fish farmers are educated.

6. 46.4% of the total respondents have an experience of fish farming for less than 10 years, followed by 10-20 years of experience represented by 36.8% and respondents with 20-30 years of experience accounts for only 14.9%.
7. The study reveals that 39.92% has taken up fish farming due to lack of employment while 29.23% said that they have chosen it they think that it is a profitable venture. Of the sample population 19.02 has started fish farming as they have interest in this type of venture and only 11.83% which rank the least has taken up because it is their parental occupation.
8. The study shows the relationship between socio-economic variables and productivity of fish. The study reveals that age, gender, occupation and experience in fish farming of sample fish farmers have no relationship with productivity of fish. Type of ownership, educational qualifications and purpose of fish farming has a positive relationship with the productivity of fish. The productivity of fish increases when the fish farmers are members of co-operative society then. When the fish farmers are producing both fish seeds and table fish then productivity of fish also increase. Land area and productivity of fish has negative relationship i.e. with the increase in area of fish farm the productivity of fish goes down.
9. Chi square statistic is also made to test the significant of some social factors and training. For this we make a null hypothesis (H_0) i.e. social factors and training are independent (no relationship between variables). The significant level is taken at 5%. The inference is that there is a relationship between age of the respondents and training. Attending of training has a relationship with caste, occupation type, ownership type, educational qualification and nature of family. The value of chi



square is statistically insignificant i.e. there is no relationship between training and religion of fish farmers.

10. The study reveals that 43% of the respondents maintain book of accounts while 57% respondents do not maintain any book of account. The study also reveals that 34.6% fish farmers of the owned farms have maintained book of accounts and the remaining 65.4% fish farmers have not maintain any records and accounts. For the cooperative farms, 100% of the farmers maintain records and accounts of the transactions made in their farms. Therefore, the study reveals that in the study area, cooperative fish farmers are more towards business minded. They keep all the information of the farms and they are able to take decision about the farms for precisely.
11. 100% of the respondents think that fish farming requires huge investment. Lack of finance hindrances the working of any type of business. As fish farming is also a business, lack of finance hindrances the running of farms. The study also depicts that 99.2% of the respondents said that lack of finance is one of the problems in smooth running of fish farms.
12. 31.4% respondents obtained financial assistance and 68.6% of the respondents did not obtain any financial assistance from any sources. From the fish farmers who have obtained financial assistance, only 1.4% respondents take financial assistance from commercial banks while 0.3% respondents seek assistance from FFDA and the remaining 38.6% respondents get financial assistance from department of fisheries government of Manipur. The fish farmers try to arrange finance for their fish farms from their family members.
13. 62.4% respondent fells that the interest rate for formal and informal sources of finance is high and the remaining 31.1% respondents said that the interest rate offered by different sources is not high. They are able to repay the loan on time if they cultured the fish in right manner and can repay their loan



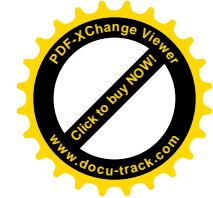
during one harvesting time. The study also reveals that to avail loan they also have to wait for a long period of time so they don't take loan. They are not able to avail loan at the time when they need money. The study also reveals that most of the farmers want financial support at the cheaper rate from the prevailing rate.

14. 100% of the respondents save some money from the sales of fish and manage their working capital from this saving. If the saving does not fulfill all the need of working capital then they harvest and sell the fish. With this money they manage their working capital. As fish farming is done with other activities like agriculture, poultry, dairying, fish farmers also manage their working capital from these source of income. Around 68% respondents also manage their working capital from their family member income.
15. The cost benefit ratio of the fish farm in the study area is 1:3.01 which corroborates the findings of Central Inland Fisheries Research Institute (CIFRI 2005) where the average cost benefit ratio is calculated to be 1:3.51 in fish farming.
16. In study area, half of respondents are marginal farmers i.e. the size of the fish farms is 0-1 hectare. And half of the fish farmers are small fish farmers i.e. they hold farm with area ranging from 1-3 hectare in which 33% respondents are having water area of 1-2 hectare and 14.6% respondents are having 2-3 hectare of fish farm.
17. It has been observed that in the study area, most of the fish farmers adopted mixed fish or composite fish farming practices in Manipur, where they cultivate different types of fish in single fish ponds. Major carps (rohu, mrigal, catla), exotic carps (common, silver, grass carps) and indigenous fish (pengba, ngaton) are cultivated in the study area. However, in the study area, 49.2% fish farms cultured major carps, exotic carps and minor carps while 41.3% fish farms cultured both major and

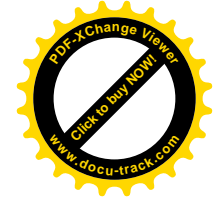


exotic carps and only 9.5% fish farms cultured only major carps.

18. In the study area, it has been observed that 2.7% fish farms produce only fish seeds, 59.7% fish farms produce only table fish while 37.6% produce both fish seeds and table fish. This practice of producing both fish seeds and table fish is prevailing mostly in Imphal East district of Manipur.
19. 91.6% of respondents harvested their fish only once in a year which means that the production cycle adopted in the study area is 8-10 months in a year. Remaining 6.2% of respondents harvested the fish two (2) times and 2.2% respondents harvested for three (3) times in a year. But, there is a variation in harvesting the fish. The fish farmers harvested any time when the fish reach the marketable size according to their needs. The fish is harvested to meet variables inputs (seeds, feeds, etc.) of the farms and also for their personal purposes.
20. In the study area, harvesting of fish is mainly done by persons who have control on the water body. This could be owned or cooperatives. For the owned fish farm, the wholesalers and the owner of fish farms fix a date for harvesting the fish and harvested jointly by the owner and wholesalers. Both male and female members of the fish farms are engaged in harvesting of fish. There is a linkage (contract) between fish farmers and the wholesalers for selling the fish.
21. Grading of fish is observed at different levels. After harvesting fish is graded based on their different varieties like rohu, mrigal, grass carps, etc. overall, grading relates to final price of fish. Grading of fish based on weight range is not practiced in the study area. This is because price of fish prevails in different ranges.
22. The actual price of fish sold varies, which depends on amount of fish harvested, size of the fish and participation of middlemen in the supply chain of fish.



23. Channel 1: producer → consumer (farm gate)
Channel 2: producer → wholesaler → retailer → consumer
Channel 3: producer → retailer → consumer
It is observed that 60.27% respondents adopted channel 2 system of distribution, 37.84% adopted channel 3 and only few respondents adopted channel 1.
24. In the study area, most of fish is traded on farm site. Where 64.9% of the fish farmers traded fish on farms site only and 34.3% fish farmers traded fish both at farm gate as well as market. 60.27% fish farmers sell their produce to wholesalers and 37.84% farmers sell their produce directly to the retailers. The marketing of fish in mainly done by female.
25. Transportation is the main problem faced in the study area. The study reveals that transportation problem is high in the study area and rank 1st among the marketing problems faced by the fish farmers. Problem of high cost of fish inputs has been recorded high degree of problem. It has been ranked 2nd. The respondents feel that storage is one of the marketing problems with high degree and rank 3rd immediately after high cost of inputs. In the study area demand for fish is more than the supply of fish. The fish farmers have control on the sale of fish. The farmers ranked this variable as least problems among the marketing problems and ranked 7th among the marketing problems faced by the fish farmers in the study area.
26. So far as the problem of inadequate availability of fish seed is concerned, 62.2% respondents are having high degree of problems, 13.2% respondents are having moderate degree of problems and 24.9% respondents are having low degree of problem relating to problems of. The chi square statistic reveals that the problem of inadequate availability of fish seed and productivity of fish are associated.
27. The problem of high price of fish seed is concerned 21.9% respondents are having low degree of problems, 14%



respondents are having moderate degree of problems and maximum fish farmers that hold for 63.5% are having high degree of. The chi square statistic further reveals that the problem of high price of fish seeds and productivity of fish are associated.

28. Problem of netting is concerned, 99.5% respondents are having low degree of problem of netting. The chi square statistic further reveals that the problem of netting and productivity of fish are not associated.
29. The chi square statistic also depicted that the problem of maintaining pond and productivity of fish are also not associated
30. Lack of technical knowledge regarding fish farming is one of the major problems with 95.2% respondents are having high degree of problem, 11.4% respondents are having low degree of problem and 1.4% is having moderate degree of problem. The chi square statistic further reveals that the problem of lack of technical knowledge and productivity of fish are associated.
31. So far as the problem of training and supervision for fish farming is concerned 70.5% are having high degree of problems and the remaining 29.5% respondents are having low degree of problem. The chi square statistic further reveals that the problem of lack of training and supervision and productivity of fish are associated.
32. So far as the government policies for financial assistance and availability of fish seeds and feeds are concerned, the study reveals that 77% respondents are not satisfied. The study further reveals that the satisfactory level of government policies and educational qualification of the respondents are not associated but the satisfactory level of government policies and type of ownership of fish farm are associated.
33. Bank services available for fish farming are not satisfactory in the study area. 95.9% of the respondents are dissatisfied with



the bank services. The study further reveals that satisfaction level of bank services and types of ownership is not associated and it is also not associated with the educational qualification of the respondents.

34. Training programme conducted for fish farming is not satisfactory in the study area as 63% respondents are dissatisfied and 26.2% respondents are satisfied with the training programme conducted for fish farming by the concerned authorities. The study further reveals that training programme of fish farmers are associated with educational qualification and also with the size of fish farm.
35. So far as the selling price of fish is concerned, 78.6% respondents are dissatisfied and only 20% respondents are satisfied. Selling price of fish is also not satisfactory in the study area. The study further reveals that the satisfaction level of selling price of fish and type of ownership and size of fish farm are associated.
36. The prospects of fish farming in the state are tremendous. The basic requirement of fish farming is availability of water and retraction of water in ponds and tanks. All the requirement, factors and elements for the development of fish farming are observed in abundance. The study area has large water resources in the form of ponds, tanks, rivers, lake, etc. which can be used for fish farming. Loktak Lake is the largest fishery resource of the state accounting for more than 50% of its fish producing area. At present, due to some environmental problems, the production of fish from Loktak Lake decreases, if proper attention is given the production fish can be increase to a great extent increase which can increase the socio-economic conditions of fishermen and fish farmer living in and around the lake. In order to develop fish farming, human efforts are needed and they can be provided through proper training. Training may be provided for production of fish and entrepreneurship



development training. This sector has a great prospect of giving employment to large section of the society. Fish farming should form an integral part of rural development for the state. In inland areas, the need of integration of agriculture, poultry with fish farming, due has been well recognised. The marketing potential is already good for the conventional species. In the case of non-conventional products there is need for finding new channels both in the internal and external markets. With the realisation of its potential, it is urgent that fish farming is taken up on priority basis not only from the standpoint of increasing production but also for its strategic importance as means of employment and as one of the tools for the development of the inland fisheries sector in Manipur. Aquaculture may not be for the poorest but ways should be explored by which the poor can gain access to appropriate technologies as part of a livelihood diversification strategy rather than a production-led strategy. There are wide prospects for developing entrepreneurship through ornamental fish farming, integrated fish farming and eco-tourism. Thus, it is clear that full possibilities and potentiality are existed in the study area for the development of fish farming.

7.2 SUGGESTIONS

On the basis of the findings of the study, the following suggestive majors should be adopted to bridge the gap of existing production and to develop fish farming as a well establish agribusiness for sustainable development.

1. The state is required to make adequate budgetary provision for taking up different scheme and programs for fisheries development and make avail financial assistance regularly and provide assistance in form of insurance cover for fish farmers.



2. Adoption of latest and suitable technology for augmenting production and productivity may be insured by the concerned authorities.
3. Infrastructure for fish seed production may be encouraged in private sector and government fish seed farms and hatcheries should be fully utilized to solve the problem of unavailability of fish seed and high cost of fish seed in the state.
4. Adequate attention may be given towards creation of new fisheries resources and development of integrated fish farming. It would be of national interest to promote integrated fish farming, more for the reason that it would not affect the utilization of land for other agricultural production.
5. There are many fish farmers who are not trained fish farmers. A massive training programme should be organised in the rural area where fish farmer are mostly concentrated. More campaign should be organised to make fish farmers more aware of the training programme.
6. The fish farming is conducted mainly by person who have no accounting knowledge, or optimum use of resources, etc. So, the fish farmers should be advised by the economic planners and proper knowledge of accounting should be thought.
7. Fish farmers should be made educated to help themselves in identifying the problems, and finding solution to the problems of fish farming.
8. Cooperative fish farming should be encouraged and strengthened the existing fishery cooperative societies and cooperative fish farmers should be adequately funded and help in time.
9. Women should be encouraged to take up fish farming by forming self help group to empower women.
10. In lean season when water is not available in ponds or tanks, arrangement should be made to supply water to those ponds or tanks.



11. As fisheries is a multi-disciplinary subject, emphasis should be made on Participatory Approach among the researchers, scientists, and extension market and fish farmers and all the concerned authority to create strong and effective linkage for sustainable fisheries development.
12. Arrangement may be made for proper marketing of fishes which are a perishable commodity. Better transportation should be provided for transporting of fishes.
13. The concept of agricultural marketing system may be applied to maintain the quality of fish. There should be at least a cold storage in the vicinity of fish market for keeping the fish over night. Fish should be made available of fish for storing the fish for longer period of time by preserving the quality of fish.
14. Marketing cooperative may be established at important fishing centre through which the marketing of fish should be done.
15. All the inputs which are necessary for fish farming should be made available at subsidized rate and at right time.
16. The credit agencies such as commercial banks and cooperative banks may be specifically pay attention to meet the credit demand of the fish farmers at right time for various purposes.
17. More emphasis should be given in “fisheries for development” rather than “development of fisheries”.
18. Department of fisheries mainly emphasis on production of fish, but it is the high time to emphasis more on developing agricultural entrepreneurship.
19. Fish farmers should be given entrepreneurship development training along with the training of fish production. Fish farmers should also be given the knowledge of accounting, so that they can have better knowledge of all the transaction of their farms and can take better decision.
20. More emphasis should also be given on culture fish farming to reduce the over dependence of fish from the Loktak lake.



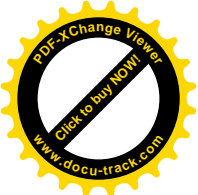
21. The infrastructure to support fish farming should be developed on priority basis.

7.3 SCOPE FOR FURTHER RESEARCH

The present research is a macro level research covering all the aspect of fish farming in the state of Manipur. A micro level study covering marketing of fish, financial aspects of fish farming can be studied individually to have an in-depth knowledge.

7.4 CONCLUSION

From the present study it is found that the study area has vast fisheries resources, which may be utilized to increase the production of fish and reduces the gap of demand and supply of fish in the state and can also export fish to the neighboring states. Fish production and marketing holds a huge potential, it is still highly unorganized and unregulated in the study area. It has been long neglected for many reasons and necessary efforts have not been made on production and marketing of fish. The improvement in fish production and marketing system and distribution would not only reduce demand-supply gap of fishes across the state, but would also contribute to food and nutritional security of a vast population. The farmers in the study area are adopting traditional techniques of fish farming and harvesting only once in year. There are number of organization and policies related to promotion of fish production and marketing in the country, there is need to formulate a uniform market policy for fishes. More training should be organised in the rural areas so that modern technique of fish farming are teach to the fish farmers and to increase fish production in the state. There are certain production and marketing problems faced by the fish farmers. The problems faces by fish farmers obstruct the development process. The three main serious problems i.e. transportation, high cost of inputs and storage problem should be solved to increase the production and marketing of fish in the state. The Fisheries Department and



appropriate authority can take up necessary steps to solve the problems so that fish farming can be taken up as means of livelihood and generating employment among the rural people. Manipur has a large potential of inland fisheries and should encourage people to take fish farming as a business and develop farm entrepreneur so that employment level can be increased. Production and marketing of fish should be develop with the coordination of the government and the private sector as there are large employment opportunities in this sector and improve the livelihood of the people of Manipur. There are certain problems faced by fish farming in the state. These problems should be studied to develop fish farming and bring rural development. Farmers' problems should be starting point of research projects. The concerned authorities should change their mind set and think in terms of the farmers; how best can he utilize his potentiality, how he contribute to its own well-being, and after that proper support should be given to the fish farmers so that they can develop fish farming as a well established enterprise. There should be policies which ensure that small fish farmers of the state also get benefit from liberalization and any other reforms. All the fish farmers and concerned authorities should work together to bring agribusiness specially fish farming to the higher place.

“If the Farmers Hands are Slacken even the Ascetics State will fail”

- Thirukkural

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