

Problems faced by Aquaculturists in Kerala

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Abstract

Aquaculture is the production of fish through farming or rearing in confined water following prescribed procedures to yield higher returns in terms of numbers and weight through defined management practices and control over the stock. The ever first attempt was for a hobby. Later due to civilization and change in life style the nutritional advantage was given importance. This importance increased with population growth. People became health conscious and it got acceptance as an employment generating and income earning activity. It is a comprehensive task containing so many processes in different stages. Extent of adoption of each individual production practice varies with regions, nature of farming, type of water body, culture practice etc. Our Central and State governments frame and publish standard operating procedures for assisting the farmers through different allied agencies. However, the farmers face various problems in connection with production of aquaculture products.

Key words: Aquaculture, Production practices, Standard operating procedures, Problems in inland fisheries production.

Kerala occupies an inimitable position in the fisheries map of India. Fish and fishery resources occupy a unique position in the economy of Kerala. There are 113 inland fishing villages in Kerala. 2.38 lakh people belong to the inland sector. The contribution of this sector to the State Gross Domestic Product (SGDP) is 1.26 per cent. The fishery sector provides livelihood for more than 3 per cent of the State either directly or indirectly, with about 2 lakh fishermen directly engaged in fisheries and other related activities. The total fish production of the State is 8.01 lakh tons (Economic Review, 2016). Marine capture fisheries which accounts for 76 per cent of the total fish caught has been showing a stagnant/ decreasing trend. It is in this context that the importance of inland fisheries comes. Inland fisheries presently contributes 1.92 lakh tons (Economic Review, 2016) of fishes to the total fish production of the State. The technological development in the inland fisheries paved the way for making use of inland water resources spread over the different districts of the State for aquaculture development.

Through definite management practices and control over the stock, the rate of production can be increased by controlling cost. It can be carried out in two types of water- Fresh water and brackish water. Fresh water means water in rivers and lakes with a salinity of less than 0.05 per cent. (Daisy C Kappen, 2005). Brackish water results from mixing of sea water with fresh water and has more salinity as in estuaries and backwaters. In both cases, two types of culture practices are followed –monoculture and polyculture.

Monoculture is the culture of a single species of an organism in a culture system. Polyculture is the culture of several species in the same water body.

Share of Fisheries sector in Gross State Domestic Product from the year 2009-10 to 2014-15

Year	Share (in percentage)	Year	Share (in percentage)
2009-10	1.06	2012-13	1.06
2010-11	1.11	2013-14	1.07
2011-12	1.12	2014-15	1.09

Source: Economic Review, 2016.

Fish production in Kerala from 2009-10 to 2014-15 in lakh tones)

Year	Marine	Inland	Total
2009-10	5.70	1.17	6.87
2010-11	5.60	1.21	6.81
2011-12	5.53	1.40	6.93
2012-13	5.31	1.49	6.80
2013-14	5.22	1.86	7.08
2014-15	5.22	2.02	7.26

Source: Inland fisheries Statistics- 2016, Department of Fisheries, Trivandrum.

Statement of the Problem

In India, at national level, about 65% of the total fish production is contributed by inland sector. But at state level, the share is only 28%. (Economic Review, 2016). In spite of the fact that Seven percent of the total inland water resources is in Kerala, the contribution is very low. Therefore inland fisheries extension programmes are very important to raise the quantity of fisheries products.

Significance of the study

Inland fisheries production is a comprehensive process requiring utmost care and patience. It involves a number of sequential activities from locating a suitable site to successful marketing for earning a margin. The farmers should follow sustainable practices in order to avoid the side effects of farming which will cause environment pollution and a lot of other related problems. In order to attain this, an aquaculturists should have awareness about sustainable production practices. It is possible only through fisheries extension programmes, This study may shed light to the real constraints faced by inland fishermen in fish production. The study results will help

policy makers to adopt suitable measures to strengthen the extension system for increasing inland fisheries production.

Objectives of the Study

The objective of the study is to find out the major constraints in production of inland fisheries products in Kerala and to develop suitable strategies to strengthen the inland fisheries extension programmes

Methodology

The Primary data were collected through conducting an interview with the inland fishermen, inland fisheries extension officers and the officials of Fisheries Department. The secondary data were collected from Statistics of Fisheries Global Information System, National Aquaculture Sector Overview, Food and Agricultural Organisation, Reports of ICAR, NFDB, CMFRI, CIFRI, CIBA, MPEDA, KUFOS, Research Articles, Books and published and unpublished Dissertations.

Problems in inland fisheries production

A large number of processes are there for the successful implementation of inland fisheries plans. The processes include preparation of suitable location and site for pond, draining of pond bottom, strengthening of dykes, removal of aquatic weeds, application of organic fertilizer, liming, stocking, acclimatization of seeds, nursery rearing of seeds, supplementary feeds, maintenance of dissolved oxygen, monitoring and control of pH level of water, control of algal blooms, water exchange, control of diseases, control of parasites and periodic assessment of growth and biomass.

But while doing the various practices, fishermen face lot of problems and as a result, the production cost will be high and output will be less. For this study, the various constraints can be classified as

1. High cost for preparation of pond

For new entrants, preparation of pond is a costly matter. They have to locate a suitable site, prepare the site, build a clay core, dig the pond, build the dikes, build inlets and outlets, fertilize the pond, fence the pond etc and all these involve high costs.

2. Lack of sufficient water availability

Before filling the pond with water, the quality of the water should be ensured. Regular exchange of water should be assured to keep the products healthy and to avoid water pollution. Farmers have to maintain a good water level. So if there is shortage of water, it will adversely affect aquaculture.

3. Lack of skilled labour

From preparation of pond to marketing, skilled labour is needed. But in most cases, farmers find it difficult to find suitable labour due to many reasons. Low remuneration, low status, irregular nature of work, etc are the reasons pointed out by farmers.

4. Lack of facility for disposal of waste water

A major problem faced by aquaculturists is the difficulty to dispose waste water. This difficulty drags the people away from the idea of starting aquaculture.

5. External predators and poaching

Farmers have to watch out for fish enemies including human beings (poachers). They have to take steps for eliminating or controlling undesirable and unwanted organisms inside and around the pond area.

6. Depletion of wild seeds

Due to environmental changes or natural calamities, there happened a serious shortage in the availability of wild seeds and this is a serious problem to many of the poor farmers.

7. Low productivity of hatchery grown seeds

In order to supplement wild seeds, a large number of public and private sector hatcheries are operating for production of seeds. But, the farmers complain that the hatchery grown seeds also are not having the required quality for maximizing the output.

8. Lack of facility of checking quality seeds

While purchasing seeds, majority of the farmers have no mechanism for checking the quality of seeds or fingerlings. If they are using poor quality seeds or seeds with diseases, that will be a big loss for the farmer.

9. Problems in determination of stocking density

While introducing different species of fish in the pond, care should be taken because if the pond is overstocked, that will affect the growth and mortality of fish. Overcrowding may create water pollution and air pollution.

10. Problems in determination of combination ratio

If the farmer is doing polyculture, determination of combination ratio is important. The expected size of the product, maturity time, difference in feed, manure etc should be considered while determining the combination ratio.

11. Lack of quality feeds

In order to ensure size, weight and health of products, good feeding practice should be followed. The quality of the feed should be checked before introducing to the pond. It is better to have twice feeding daily.

12. High cost of feeds

In addition to home made feeds, hatchery produced feeds also have to be used regularly and that will rise the cost.

13. Lack of facility for checking the quality of fishes

Quality of fish is an important factor that determines marketability of the product. But in most cases, the farmers lack any machinery for checking the quality. That is one of the reason for the exploitation by the commission agents or middlemen.

14. Inability to insure the product due to high cost.

A major factor that hurts the peace of many of the farmers is loss of product due to many reasons like diseases, predators, poachers, loss during natural calamities, loss during harvesting, loss during transportation etc. But they have to pay large amount as premium for insuring their products.

15. Uncontrollable diseases and high mortality

Inferior quality of fingerlings, feeds, manures, water etc may bring many type of diseases in both fresh water and brackish water aquaculture. Premature harvesting may also result in huge loss to the farmers.

Conclusion

In order to have a clear picture about the various problems in production of inland fisheries, fifteen production problems are listed. These are high cost of preparation of pond, lack of sufficient water facility, lack of skilled labour, lack of facility for disposal of waste water, external predators and poaching, depletion of wild seeds, low productivity of hatchery grown seeds, lack of facility of checking quality seeds, problems in determination of stocking density, problems in determination of combination ratios, lack of quality seeds, lack of

quality feeds, lack of facility for checking the quality of fishes, inability to insure the product due to high cost and uncontrollable diseases and high mortality

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