

STUDIES ON AQUACULTURE AND POPULATION DEPENDENT ON IT'S IN REWA DISTRICT OF MADHYA PRADESH

Dr. Ajay Kumar Tiwari
Department of Zoology
Govt. T. R. S. College Rewa (M.P.)

ABSTRACT:- Aquaculture also known as aqua-farming, is the farming of fish, crustaceans, molluscs, aquatic plants, algae, and other organisms. Aquaculture involves cultivating freshwater and saltwater populations under controlled conditions, and can be contrasted with commercial fishing, which is the harvesting of wild fish. Marine culture commonly known as marine farming refers to aquaculture practiced in marine environments and in under water habitats, opposed to in fresh water.

KEYWORDS:- Aquaculture, aqua-farming and Fish.

INTRODUCTION:-

Aquaculture is the controlled cultivation and harvest of aquatic animals and plants. Aqua culturists manipulate certain components of the environment to achieve greater control over production of aquatic organisms than in normally possible in nature. Ponds built on the best agricultural land have the highest natural productivity. High production from aquaculture is also possible in ponds built on lands which are unsuitable for agriculture. Aquaculture can contribute to the conservation of natural resources, especially water and soil. Ponds can reduce the dangers of downstream flooding by holding water height in water sheds and checking the erosional force of sudden runoff. Ponds maintain soil moisture in their vicinity and thus support vegetation and wild life. Even a small pond can contribute substantially to acquire income or reduce family expenditure for food requirements. Aquaculture provides fresh fish available in the rural areas. Large population of rural poor are found living in isolated areas where transportation and market facilities are to make them available with required fish consumption. Aquaculture production is basically dependent on factors like the physical environment, culture facilities, available nutrient inputs, species cultured and ability of producers to balance all the factors in profitable package. The expansion of aquaculture production has profound implications for labour relations, rural poverty and class

formation. Aquaculture requires access to capital for start-up and running costs, and thus has much more barriers to entry than fishing in capture fisheries does. Russed et al. (2013) found that small holder households adopting fish farming are often those who have startup capital, raising concerns about equity. Despite the challenges, however, aquaculture holds significant potential for pro-poor rural development (Demessie, S. 2003).

Aquaculture in India has evolved as a viable commercial farming practice from a level of traditionally backward activity over last decades with considerable diversification in terms of species and systems, and has been showing an impressive annual growth rate of 6-7 percent. While the carp-based freshwater aquaculture, mainly constituted by the Indian major carps, such as, *Catla*, *rohu* and *mrigal*, has been contributing over 90 percent of the aquaculture production satisfying the domestic need, the Shrimp based aquaculture contributes only about 5% of the export earnings. The sector has also shown considerable diversification in recent years with the adoption of other species like Catfishes and freshwater prawns. Integrated fish farming has also been developing farmers friendly. The development of protocol for ornamental fish breeding and management has provided important livelihood options for marginal and landless farmers in certain localities. Although aquaculture in India has reached the status of an industry, assessment of human resources required for fisheries sector has always been a debatable issue.

The fisheries sector contributes to the national income, exports, food and nutrition security and employment generation. The rapid growth of the sector has generated huge employment opportunities for professional, skilled and semi-skilled workers for the different support activities such as construction and management of farms, hatcheries, feed mills, processing units etc. (Anjani, K. Joshi, P.K. & Pratap, S.B. 2003). Apart from traditional

fisherman of the district other castes are also allied to the various processes of aquaculture viz. Schedule Caste, Muslims, Yadav and meagre population of Brahmins and Rajputs, especially in Madhepur block and Benipatti block. However, aquacultures became popular and are supported by large population of Rewa district to improve their economy and livelihood apart from their agricultural activities. In addition to the main population a sizable number of workers as marginal workers of about 14,884.0 out of which male population are 3,781.0 and female population is about 11,103.0, reaching the percentage up to 11.40 of the total population.

Description of Study area:

The study area is situated between 81° -18, east longitude and 28° -32, north latitude and is situated on Vindhya plateau at the height of 318 meter above m.s.l. The climate is mainly subtropical and sub humid. The average annual rainfall of the region is 82.953 mm and relative humidity is 79.36 %.

The State of Madhya Pradesh lies between 17° 2' N and 26° 52'N latitudes and 74° 2'E and 84° 02'E longitudes. Area wise, it is the second largest state in the country and ranks seventh in terms of population. The general elevation varies from 150 to 600 meters above mean sea level. It receives rainfall mainly through southwest monsoon ranging from 800 mm in the North West to 1600 mm in south west.

The State has extensive mineral and forest resources, rich and fertile soil and reasonably abundant water resources. Unfortunately, in spite of the State Government making all efforts, so that it can make rapid strides in the direction of economic and social advancement, the pace has been slow so far. The reason for this is partly historical and partly economic.

According to the census 2001, the total population of the State is 603.85 lakhs forming 5.88 per cent of the population of the country. Of this the male population is 314.57 lakhs and female population, 289.28 lakhs. Thus, the sex ratio of females per thousand males comes to 920 as against 933 for the country. Out of the total population, the urban : 7 : population is 161.02 lakhs and rural population is 442.83 lakhs. Thus, the percentage ratio of rural : urban population is 73:27. The State is basically rural in nature. The decennial growth rate is

24.34 as against 21.34 for the country as a whole. The density of population is far lower in the State (196 persons per sq.km.) as compared to the all India average of 324.

DISCUSSION:-

Aquaculture developments need greater planning in the larger regional and community contexts. Aquaculture must be environmental regulations, management oriented and resource and social problems coming in the crowded centuries. It is important to maintain that the best possible use of the productivity of natural resources is achieved by causing minimum possible radical alterations to natural environment. Vijverberg *et al.* (2009) proposed that, Aquaculture development must be undertaken in a broad inter-sectoral context, considering especially its interactions with agriculture, forestry and capture fisheries and its environmental consequences. Aquaculture is the farming of aquatic organisms, including fish, *molluscs*, *crustaceans* and aquatic plants. Farming implies some term of intervention in the rearing process to enhance production, such as regular stocking, feeding and protection from predators etc. This definition includes enhanced fisheries (Stock enhancement aquatic ranching and management of natural aquatic environment) within the scope of production system considered. The three Indian major carps namely *Catla*, *rohu* and *mrigal* contribute the bulk of production to the extent of 70 to 75 percent of the total freshwater fish production, followed by Silver carp, Grass carp, common carp, Catfishes forming a second important group contributing the balance of 25-30 percent. Fish and other aquatic organism's lives are found to have successful favorable condition because water in a pond is primary requirement for aquaculture. Several physicochemical features of water impose their influences for making the pond water most suitable for aquatic life.

Fish is one of the popularly consumed items in Madhya Pradesh especially in Vindhya region that consist of Rewa district. It is fastest growing subsector indicating a growth rate of over 10 percent per annum (NABARD, 2006).The long-term sustainability of aquatic environment has raised concern over the environmental impact of vital sectors, due to its negative impact aquatic ecology and system (Halder, *et al* (2011). Intensification of aquaculture involves the use of highly nutritious feeds

and other chemical products, which generates wastes that, in most cases are difficult to curtail and toxic to aquatic lives (Ali *et al.* 2009 and Pravakar, *et al.* 2013). Effluent water containing wastes are discharged in all aquaculture system. Discussion on aquaculture is the main topic, relating to the rising demand of animal food in the form of fish and shell fish and in the public health issues associated with aquaculture operations and adequate aquatic produce, with particular emphasis on safe levels of contaminants; special problems associated with bivalve molluscs and crustaceans; safe reuse of wastewater in aquaculture; interactions between aquaculture and the environment, to the impact of aquaculture on natural habitats and their biota; aquatic diseases; mechanisms for future action; and guidelines for policymakers.

CONCLUSIONS:-

Rewa district, heart of Vindhya is known as land of White Tiger. The ponds of Rewa are important for common need of community, livelihood and nutrition, recharging of groundwater. Fish is one of the popularly consumed items in M.P. and is fastest growing subsector indicating a growth rate of over 10 per cent per annum. Aquaculture acts like insurance against failure main crops in agriculture, creates employment and fulfill the needs of animal proteins for local population at cheaper rate.

REFERENCES:-

1. Ali H, Azad MAK, Anisuzzaman M, Chowdhury M M R and Hoque M, (2009): Livelihood status of the fish farmers in some selected areas of Tarakandaupazila of Mymensingh district. *Journ of Agroforest and Environ* 3: 85-89.
2. Anjani, K. Joshi, P. K. & Pratap, S.B. (2003): Fisheries Sector in India: An over view of performance, policies and programs. In : Anjani K.

Pradeep, K.K. & Joshi, P.K. (Eds.) A profile of people, Technologies and policies in Fisheries Sector in India, pp.1-16; Anon, 2002, Aqua culture Authority News, Vol. 1(12), Dec. 2002).

3. Demessie S. (2003): Socio-economic study on Lake Tana Fishery: Its role in the livelihood of one fishing community and local people in the region. Norwegian Fisheries College of Science, University of Troms, Norway.
4. Halder P, Ali H, Gupta N, Aziz M.S. B and Monir M.S. (2011): Livelihood status of fresh fish, dry fish and vegetable retails at Rajoir Upazila of Madaripur district, Bangladesh. *Bangladesh Research Publications Journal* 5: 262-270. Citation: Sarker
5. Kar D. (2007): *Fundamental of Limnology and Aquaculture and Biotechnology*. Daya Publishing House. New Delhi. pp. 609.
6. Pravakar P, Sarker B S, Rahman M and Hossain MB (2013) : Present Status of Fish Farming and Livelihood of Fish Farmers in Shahrasti Upazila of Chandpur District, Bangladesh. *American Eurasi Journ of Agricul and Environ Sci* 13: 391-397.
7. Russo, A.R., Ruttner. F. and Rozoska. N. (1978): Some ecological observations on a permanent pond in southern England. Primary production and planktonic seasonal succession. *Hydrobiol*; 46: 33-48.
8. Vijverberg J, Sibbing FA and Dejen E. (2009): Lake Tana: Source of the Blue Nile. The Nile: Origin, Environments, Limnology and Human Use, *Monographiae Biologicae*, Springer pp: 163-192.