

AQUACULTURE

AQUACULTURE is the farming and husbandry of economically important aquatic animals and plants under control condition. AQUACULTURE is the popularized biotechniques.

Scope and definition- The word 'aquaculture' is widely used to denote all forms of culture of aquatic animals and plants in fresh, brackish and marine environment. Aquaculture is used as synonym for mariculture. Aquaculture does not include the culture of essentially terrestrial plants (hydro phonics) and basically terrestrial animals.

However, aquaculture includes

1. The **types of culture techniques** or system (pond culture, raceway culture, cage culture, pen culture and raft culture etc.)
2. The **type of organism** culture (fish, oysters, muscles, shrimps or sea weeds culture)
3. The **environment** in which the culture is done (fresh water. Brackish water, salt water or marine aquaculture or mariculture.)
4. The **specific characters of the environment** used for culture (cold water, warm water aquaculture, upland, lowland, inland, coastal, estuarine etc.)

While aquaculture is generally considered as a part of fisheries science, there is now a tendency to denote the distinction between the two by using the term fisheries and aquaculture, because of some of the basic differences in development and management

The objective of aquaculture: Aquaculture development depends on the socio-economic condition of the country and on the environmental suitability. National priorities may differ. Very significantly between countries but majority of situations aquaculture can have an important role, as for example in

- a. Increasing food production, especially of animal's protein and achieving self sufficiency in aquatic products supply
- b. Producing food near consuming centers in rural areas, thus contributing to improvement of human nutrition.

- c. Supplementing or replacing capture fishery products of over exploited fish and shell fish stock.
- d. Generally new sources of employment of farmer and small-scale fisherman and arresting the migration of people from rural to urban areas.
- e. Overall development of rural areas through integrated projects, including aquaculture.
- f. Earning foreign exchange through export or saving foreign exchange through import substitution.
- g. Using wasteland productivity and using organic wastes for food production and environmental management.
- h. Creating and maintaining leisure time activities, including sport- fishing and home and public aquaria.
- i. Promoting Agro-Industrial development which could include processing and marketing of fishery products, feeds and equipment for aquaculture and sea weeds culture for production of marine colloids, pearl oyster culture etc.
- j. Aquaculture could help integrated rural development by generating employment opportunities for many unemployed people in rural areas of developing countries.

Common aquaculture species:

There are several species of shell fish and fin fish and plants are used in experimental or commercial aquaculture. But the bulk of present-day production is based on a smaller number of species. Some of the species are from the family ***Acypenseridae, Cyprinidae, Salmonidae, Heteroptidae, Chanidae, Siluridae, Claridae, Anguillidae*** etc. etc.

From the Cyprinidae carps are generally used for aquaculture and some species from carps are common carps, Chinese carps, Indian Major carps etc.

From trout's and salmons, the species are rainbow trout, brown trout etc. and from Salmons salmosolar is important. Important catfishes are the ***pangasius, clarius batrachus***. Some are fin fishes like the Murrells (snake headed)-***Channa marulius, C. punctatus, C. straitus, Gauramis, Acipenser*** etc. From eel ***Anguilla***

anguilla and different species of Tilapia are used for aquaculture. Many other fish species also used for aquaculture.

Some **Shrimps and Prawn, Cray fishes and crabs** are also appearing to have been used in some forms of aquaculture. The cray fishes besides delicacy, small cray fish are also used as **bait** for anglers in U.S.A

There are several species of Bi-valves and smaller number of gastropods which are cultivated. Among these the more important are **Oysters, Mussels, Clams, Scallops and the Cockles etc.**

Types of aquacultures

Depending on the various hydrological features particularly salinity, aquaculture could be broadly divided into **Fresh water, Brackish water, Mariculture and Metahaline aquaculture.**

A. Mariculture-Racks, Long line, Cage, Raft.

B. Brackish water- Tidal Pond, Cages, Pens, Rack, Rafts.

C. Fresh water- composite fish culture, Monosex, Monospecies, Murrells, Tilapia, Air breathing, earthen ponds, Larvivores fish culture, Temple ponds, Irrigation tanks, Sport fish, Race ways, Sewage ponds. Ornamental fish culture etc.

D. Metahaline-
