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Commentary

Brief View on Mariculture

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ABOUT THE STUDY

Mariculture refers to the cultivation of aquatic plants and animals in saline water. Thus, mariculture is a subset of aquaculture, which encompasses the production of both freshwater and marine species. Seaweeds, mollusks, crustaceans, and finfish are the four primary types of mariculture species. According to recent data, the total amount of seafood (including fresh-water species) is about 140 million metric tons annually. Aquatic plants account for more than 20% of the total (mostly seaweeds). Only 2% of the total is made up of marine fish. The most significant species grown in marine waters are mollusks (clams, oysters, abalone, scallops, and mussels). Seaweeds (brown, red, and green) come in second place. While most individuals do not believe they consume much (or any) seaweed, seaweed extracts from seaweeds can be found in everything from toothpaste and ice cream to automobile tires. Seaweeds are dried and consumed directly as human food in various places of the world. Shrimp, crabs, lobsters, and crayfish are all crustaceans. While shrimp cultivation has become a big business in Asia and Latin America since the early 1980s, global production is considerably less than that of mollusks and seaweeds. The output of marine fish is considerably lower. Atlantic salmon, milkfish, sea bream, sea bass, red drum, yellowtail, striped bass, and hybrid striped bass are among the top finfish species.

TYPES OF OPERATIONS

Mariculture involves several levels of technology, with the lowest relying heavily on nature to produce the product. The culturist may assist in the preparation of the growing area but does nothing more. Oyster culturists, for example, may lay old shells on the bottom to offer locations for a new generation of oysters to attach. When the oysters reach the right size, they are collected and fed on natural phytoplankton. The next step is to spawn oysters in a hatchery and enable the larval oysters (called spat) to settle on oyster shell, which is then placed on the oyster bed in bays or strung on ropes from a raft. Mussels and scallops can also be produced on the ropes that run beneath the rafts.

Ponds

Ponds are frequently used to raise shrimp and different types of marine fish. Young shrimp and fish are typically generated in hatcheries; however the gathering of young animals from nature has been and continues to be employed in rare circumstances. The ponds may be filled with sea water by pumping water or by tidal movement (the farmer opens the floodgate when the tide is rising and closes it when the pond is full). Depending on the species being produced and the size at stocking, the period necessary for the animals to reach market size can range from a few months to over two years.

Pens and cages

Aside from ponds, marine fish are raised in floating pens or cages in sheltered harbors. The majority of cultured salmon is produced in these facilities, which are mostly located in Norway, Canada, the United States, Scotland, and Chile. Other fish species are also raised in pens and cages in Japan, Europe, and the Middle East. In recent years, there has been some interest and activity linked with cage culture in offshore seas.

Indoor facilities

The most advanced technology is linked with indoor facilities in which animals are raised in raceways or tanks (circular raceways) that get piped seawater straight from the ocean. The water can be pumped through the tanks and dumped, or it can be recirculated, or reused, by running it through a complex water treatment system. These facilities may raise marine species to market size, although they are most often used as hatcheries and to house broodstock (adults used for reproduction).

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