CHAPTER 2

SCOPE AND OBJECTIVES OF THE STUDY

The study on aquaculture is important from an economic and ecological point of view, though, aquaculture is beneficial with economic returns and ecological count, it is feared that aquaculture activity along the coastal area will affect the ground water quality by the constant seepage of brackish water into the sub-surface layers. The pumping of brackish water or sea water into shrimp farms would result in salt water intrusion in land region and would affect the agricultural activities. During shrimp harvesting, draining and cleaning of the ponds results in effluent discharge containing high load of organic matter and nutrients which add up to the problem. Further, due to salinisation, the soil is permanently affected and becomes unsuitable for irrigated agriculture. Therefore, the data and the information collected on the impact of aquaculture on the environment will help in assessing the status of the environment and suggesting suitable remedial measures. Negative environmental effects of shrimp farming and the mistakes committed in the development process receive wide publicity. Not much has been done to inform the general public about the positive aspects of shrimp farming. Therefore, attention should be given to disseminate relevant information on this through media accessible to the broadest segments of the population. The society should be made aware about the concept of the environment and model scientific management strategies to be implemented for an eco-friendly and sustainable farming in aquaculture.
Considering the international and national scenario and issues of debate on the data the present study was carried in Nagapattinam district. As research works relating to this field are scanty, the present study has been aimed at analysing variations in physico-chemical and biological characteristics of pond waters during the culture process and their impact on receiving water bodies and designing a economically feasible treatment method for aquaculture effluent.

The main objectives of the studies are to

1. survey and identify the different types of shrimp aqua farms in Nagapattinam district.
2. study the physico-chemical parameters of inlet water, pond water and effluent water from aquaculture pond (in both extensive and semi intensive type of culture) for assessing the changes in water quality during the culture operations.
3. study the physico-chemical characteristics of the bottom soil of pond and agriculture soil in the surrounding areas to assess the changes, in soil quality due to aqua farm operations.
4. study the physical, chemical and biological parameters of coastal waters of Nagapattinam and to assess the impact of aquaculture farm effluents on the coastal water.
5. study the development of aquaculture during the past 10 years in Nagapattinam district using Remote Sensing techniques and
6. design a biological treatment method for aquaculture waste water using seaweeds