

**The Traditional Lagoon Fishing Industry and Modern  
Shrimp Farming in Northwestern Province Sri Lanka:  
Impact on Employment, Income and Environment**

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Shrimp aquaculture is highly profitable industry compared to traditional fisheries, animal husbandry and agricultural activities in Sri Lanka. Inter-tidal zones including ecologically sensitive areas (mangroves and salt marshes) and supra tidal zones developed for traditional agriculture have been converted to shrimp farms in the North western province of Sri Lanka. Socio- economic systems and biophysical systems are interdependent and there is a indivisible interaction between these systems affecting each others.

Physical changes in water sources as a result of activities related to shrimp culture include siltation, sedimentation and increase in concentration of total suspended solids levels. Toxic metabolic end products and self pollution has created an environment unfavorable for both culture shrimp and other commercially important fishery resources exploited by coastal community

Changes in the land use pattern in adjoining land of coastal water bodies have in affect several adverse impacts on whole lagoon system in the North- Western province. This study was mainly focused on reviewing the affects of the changes in lagoon system on the socio-economic responses of the coastal community and their use of biophysical resources. Increases in the use of ground water in the area has reduced salinity content in the lagoon and also has resulted in lowering ground water level in the area. Changes the physical environment has resulted in a change in fish composition, which lead to decrease of main income of the traditional fishing community in the region. Some of the seasonal fishing activities have been abandoned. Most of the ecological systems, such as mangroves, salt marshes and inter tidal ecosystems which were fish breeding grounds, grazing lands for animal husbandry activities and protecting area for tidal erosion have been destroyed.

Changes in the lagoon system and environment have caused changes in economic and social activities of the native community. It was observed that some of the full- time fishermen in the lagoon have converted to be part- time fishermen while some have totally abandoned fishing in the lagoon. Presently, fishermen are involved in fishing with harmful non- selective methods and they have increased the use of family labour instead of hiring crewnember. It has resulted in increase in number of fishermen in the lagoon. The fishermen who stopped fishing due to less return from the lagoon have compelled to go as members of the off shore fishing crew, fishing in

the sea or working as a labourer in shrimp farm or they are involved in other non-fishery activities in the area.

Several user- conflicts have been identified between shrimp farmers and communities engaged in traditional economic activities in the area. During the late 1980's and 1990's frequent disease outbreaks have reduced farms production to its lowest level. Contaminated larvae, intensive culture practices, deterioration of water quality in main water sources, problems related acid sulphide soil conditions have been identified as main contributing factors for disease out-breaks which have led to reduction in employment opportunities in shrimp farming sector. The frequency of vector bone diseases have increased in shrimp farming areas. The neglected shrimp rearing ponds appears to provide major breeding places for mosquitoes during the rainy seasons.

The prevailing problems cannot be totally solved by implementing the institutional regulation since the communities living in the region are traditionally involved in their economic activities which depend on the ecological systems. Alternative sources of income are one of the short -term solutions to the problem, but this is not a permanent solution to improve the resource generation in degraded lagoon system.