

## **Executive Summery**

Aquaculture has a bright future, as it represents the fastest growing animal production industry in the world. Culturing of aquatic species is rapidly expanding worldwide and provides a tremendous opportunity to provide high quality animal feed for feeding growing world populations. Aquaculture is still the best strategy to put food on the tables of poor families in rural areas and to manage local aquatic resources sustainably.

With reference to the above perception, Ministry of Fisheries and Aquatic Resources Development has designed the project on aquaculture development and management master plan for the North and North Western Province with collaboration of National Aquatic Resources Research and Development Agency (NARA), Korea International Cooperation Agency (KOICA) and Korea Maritime Institute (KMI).

Bivalves significantly contribute to the world aquaculture production. There is great potential for the commercial level bivalve culture development in Sri Lanka. In Mannar, Northern province of Sri Lanka, has natural oyster beds which can be used for the commercial level production. A comprehensive study has been carried out to collect all required scientific information for the sustainable utilization of this valuable resource *viz* determination of oyster spat falling season, study the efficiency of spat collectors and seasonal variation of water quality parameters. The survey for mapping the native oyster beds and estimating the standing stock of native oysters in Mannar district has been also carried out. The on-going resource survey and stock assessment has been focused to the oyster grounds in Thevanpiddi and Achchakulaum situated in Mannar District. Using the above scientific data it has been planned to develop a sustainable oyster culture management plan for the district.

After facing a big devastation of shrimp farm industry in North Western province due to white spot syndrome virus disease, more than 50% of shrimp farms (more than 2000 ha) were abandoned and out of 63 hatcheries more than 30% hatcheries not in operation at present especially in the Puttlam district. Hence there is an urgent need to suggest alternative aquaculture species to utilize these abandoned farms in the area. This project component aims

to develop mariculture programme for these abandoned farms as alternative livelihood options as well as for commercial and restocking purposes for North Western province.

The crab fishery is mainly artisanal contributing the livelihoods of many households in Sri Lanka. Information from historical sources collected during the review and from PRA surveys carried out during the study revealed that at least for the commercial species, densities were very low except in dense mangrove swamps in where fishing operations are difficult then become natural marine protected areas, and in remote sites, which questions the viability of these populations. The development of breeding technology for stock enhancement through marine ranching or directly release to the wild is the one of the recommendation to implement the effective management of this fishery.

An attempt was taken to carry out artificial breeding of mud crabs at Kalpitiya Regional Research Center of National Aquatic Resources Research and Development Agency (NARA). Four successful breeding trials have been carried out from July to October 2012 by producing approximately 15 million eggs. Out of that amount, three million were stocked in fiberglass tank in side the hatchery for larval rearing while the rest were released to lagoon and open sea in Kandakuliya area as conservation purposes.

Information on operational and non-operational shrimp ponds have been collected and now in the process of developing GIS maps.

Based on the preliminary results, suitable management plans will be implemented to ensure the sustainable utilization of oyster and mud crab resources through active participation of community who are directly involve in fishing activities.