

# **Annual Report**

## **2011**



**National Aquaculture Development Authority of Sri Lanka**  
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**Pelawatta, Battaramulla.**

## Introduction

The performance of the National Aquaculture Development Authority of Sri Lanka (NAQDA) during the 12 months commencing from 1/1/2011 continued to improve as in the previous years. The Authority has shown a considerable improvement, in fish fingerling production and breeding activities at Aquaculture Development Centers and Extension and Regulation Activities carried out in the field by Aquaculture Extension Division as well, in the year 2011 when compared to the previous year.

There are many untapped reservoirs and coastal aquaculture resources in Northern Province which can be used for development of inland fisheries and aquaculture. Northern Province Development Programme was commenced in 2010 after thirty years. Most of the resources especially untapped reservoirs were used for fish culture in the Northern Province in the year 2011 with compared to year 2010.

## Inland Fish Production

*Table 1- Comparison of Aquaculture and Inland Fisheries production in Sri Lanka over the years*

Year	Inland Fisheries & Aquaculture (MT)	Coastal Aquaculture prawn production (MT)	Total Production (MT)	% Increase over previous year
2006	32,810	2,480	35,290	-
2007	34,800	3,580	38,380	8.7
2008	42,270	2,220	44,490	15.9
2009	43,010	3,550	46,560	2.4
2010	48,930	3,480	52,410	12.6
2011	55,410	4,150	59,560	13.6

The inland fish and aquaculture production was 59,560 Mt. in the year 2011 which was an increase of 7150 Mt. (13.6%) over that in the year 2010.

## Foreign Exchange earned and contribution to rural economy

This inland fish and shrimp production in 2011 is valued at approximately Rs.11,500 Mn. contributing significantly to the rural economy. Further it is estimated that foreign exchange earned through export of cultured shrimps is around Rs. 1,799 Mn.

## Fry Production & Distribution

The AQDCs at Udawalawa, Dambulla, Inginiyagala, Polonnaruwa & Nuwara Eliya produced 83.11 Mn fry in 2011. A major part of these fry were sold to Community Based Organizations (CBO) managed Mini Nurseries and Private Pond Owners (PPO) for rearing to fingerling size. This is an increase of 37%, when compared to fry production in 2010.

*Table 2 - Fry Production & Distribution (2006-2011)*

	2006	2007	2008	2009	2010	2011
Fry sold to Mini Nurseries	7.42	12.08	15.13	17.34	15.79	17.55
Fry reared at AQDCs	10.54	10.99	11.78	13.32	16.14	28.80
Fry sold to PPOs	13.48	7.11	11.34	17.99	26.31	34.88
Issued to Cages	-	1.20	3.83	1.35	2.30	1.88
<b>Total</b>	<b>31.44</b>	<b>31.38</b>	<b>42.08</b>	<b>50.00</b>	<b>60.54</b>	<b>83.11</b>

## Fingerling Production

In the year 2011 44.82 Mn fingerlings were produced in Aquaculture Development Centers (AQDCs) of NAQDA, CBO managed Mini Nurseries and Private Ponds compared to 34.88 Mn. in 2010. This is a significant increase (28%), when compared to fingerling production in 2010.

*Table 3 - Fingerling Production (2006-2011)*

	2006	2007	2008	2009	2010	2011
Fingerlings produced Mini Nurseries	3.6	4.6	6.6	8.14	8.03	8.47
Fingerlings produced AQDCs	5.2	5.3	6.7	9.62	13.75	20.35
Fingerlings produced PPOs	2.7	2.9	5.5	8.99	11.70	14.89
Cages			2.0	1.18	1.40	1.11
<b>Total</b>	<b>11.5</b>	<b>12.8</b>	<b>20.8</b>	<b>27.93</b>	<b>34.88</b>	<b>44.82</b>

## Distribution of fingerlings

The fingerlings produced at AQDCs, Private Ponds, Mini Nurseries and Cages were distributed amongst major aquaculture and inland fisheries development areas as given in the following table.

**Table 4 – Stocking of Fish fingerlings - 2011**

<b>Type of the water body</b>	<b>Number of tanks</b>	<b>Fingerling Stocked (Mn)</b>
Major Reservoirs	32	8.16
Medium Reservoirs	48	9.01
Minor Tanks	318	17.91
Seasonal Tanks	520	7.55
Ponds	481	1.29
Estate Tanks	15	0.06
Rivers and Lagoons	9	0.74
<b>Total</b>	<b>1423</b>	<b>44.72</b>

**Fresh Water Prawn Production (Post Larvae)**

12.19 Mn. Post larvae of fresh water prawn were produced at Pambala and Thillawatawana, Kahandamodara centers and stocked as follows.

**Table 5 – Stocking of Freshwater Prawn post Larvae - 2011**

<b>Type of the water body</b>	<b>Number of tanks</b>	<b>Post larvae stocked (Mn)</b>
Major Reservoirs	19	4.80
Medium Reservoirs	20	2.02
Minor Tanks	50	2.89
Seasonal Tanks	54	1.53
Ponds	38	0.12
<b>Total</b>	<b>181</b>	<b>11.36</b>

Freshwater prawn production has shown a gradual increase and has resulted in enhancing income of fishermen. In 2011, freshwater prawn production was about 300 Mt and thereby Rs. 96 Mn were contributed to the rural economy.

**Programme to issue Fingerlings on Free of Charge**

Based on a Cabinet Approval dated 16.07.2008, stocking of fish fingerlings in the reservoirs free of charge basis for five years, commenced from 2009. The total sum allocated for this programme was Rs: 150 Mn. NAQDA received Rs: 30 Mn. during 2011 and will receive further Rs: 60 Mn. during 2012– 2013 from General Treasury to continue the above programme. Under this programme 35.82 Mn. fish fingerlings were stocked in reservoirs during 2011.

## **Management Measures**

To improve the management and regulatory activities of inland fisheries in perennial water bodies (by preventing illegal methods of fishing) the Authority conducted 167 raids during the year 2011.

## **National Inland Fisheries and Aquaculture Training Institute, Kalawewa**

During 2011, it provided facilities for 110 training programmes and generated an income of Rs 11.56 Mn.

## **Shrimp Farming Industry**

Various activities were implemented during last few years through the Shrimp Farm Monitoring and Extension Unit of NAQDA to rehabilitate the shrimp farming industry, which was devastated by the White Spot disease. Main activities undertaken were Dredging of Dutch Canal; Introduction of a crop calendar and zoning; Formation of relevant rules & regulations and implementation; Regulation of shrimp hatcheries and Screening of post larvae of shrimp and broodstock. In addition, services are being provided at the Shrimp Disease Diagnosis and Health Management Laboratory at Battuluoya for shrimp farmers to detect shrimp diseases.

During 2011 under monitoring activities, 05 court cases were completed against unauthorized farmers, 61 awareness programmes were held and 169 Aquaculture Management licenses including 139 Shrimp Farms, 29 Shrimp Hatcheries, 01 Brooders Stocking Center were issued. Further NAQDA conducted 2147 no. of PCR tests to screen brooders and post larvae and tested 47 water samples for improving the quality of water in shrimp hatcheries in the area by the Brackish water fish health and environmental monitoring laboratory at Battuluoya. Further to improve quality of post larvae, all the shrimp hatcheries were monitored by testing of Monodon Bacula Virus and white spot disease by officials from the brackish water fish health and environmental laboratory.

In 2011, 63 Shrimp Hatcheries and 925 Shrimp Farms were operated in Puttalam District. Shrimp post larvae production during the year was 283 Mn.

Action is being taken to expand shrimp farming under cluster farming system in North and East of the country and suitable sites has been identified.

### ***Development of Shrimp Farming in Batticaloa District***

Aquatic Resource Development and Quality Improvement Project (ARDQIP) on behalf of NAQDA established a Shrimp Hatchery with the capacity to produce 20 million post larvae/year at Pudukudirippu. The cost of this project was Rs. 80 Mn. This hatchery was commenced operation during first quarter of 2011 on Public- Private Sector Partnership Basis and supplies the seed requirement of the shrimp farmers of the area. Kings Aquaculture (Pvt) Ltd was selected as the private party to manage this hatchery.

NAQDA also established a Demonstration Shrimp Farm at the Air Force Base Camp in Batticaloa at a cost of Rs. 11.24Mn under the IFAD funds. This demonstration farm will train officers of NAQDA and shrimp farmers of the area on Best Management Practices (BMP) & sustainable development of Shrimp Farming. At present this Demonstration Farm is managed by the Air Force, Batticaloa for Shrimp Farming. The shrimp production obtained from this in 2011 was 2.4 Mt.

NAQDA has completed plans and started to develop infrastructure facilities for cluster shrimp farming in Vakarai in order to create livelihoods to coastal communities who were affected by Tsunami 2004, by engaging them in shrimp farming on a cluster system. Survey, Demarcation of the lands and Designing of the cluster shrimp farm at Karyankerni completed during the year 2009. Beneficiaries were selected in 2010. International Fund for Agriculture Development (IFAD) providing funds for this and estimated cost is Rs.90.57Mn. Construction of infrastructure facilities will be completed by July 2012. This will be a model for the ecosystem approached shrimp farming.

Rehabilitation of cluster shrimp farm at Otamawadi was taken place in 2011 by constructing common facilities needed for a cluster such as common inlet and outlet canals and sedimentation area etc. through the establishment of shrimp farmer association and with assistance of the Divisional Secretariats of Valachchena.

### **Ornamental Fish and Aquatic Plant Farming**

NAQDA is involved in development of new ornamental fish strains, development of technology, provide brood fish, fish disease diagnosis, provide training and technical assistance etc. to support development of ornamental fish and aquatic plant culture and exports.

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Aquaculture Development Centres at Rambodagalla and Ginigathena is dedicated for ornamental fish and plants. A tissue culture laboratory established at Rambodagalla is involved in tissue culture of ornamental aquatic plants.

These centers sold 1.08 Mn ornamental fish for farmers and exporters and earned Rs. 8.22 Mn. 23,330 brooders were also sold in 2011. 38 training programmes were conducted and 717 people were trained in ornamental fish farming in the year 2011. And also 2 new strains were developed in 2011.

### **“Divi Neguma” Programme**

Under the above programme, following projects were implemented by NAQDA

- Fry to fingerling rearing in ponds
- Ornamental fish farming
- Food fish/prawn culture in ponds
- Integrated fish farming
- Fish culture in seasonal tanks

This has become a financial assistance scheme for aquaculture development at the household level and benefiting people who are interested in engage in aquaculture to generate an additional income. Assistance were provide 609 small scale enterprises in Fry to fingerling rearing, Food fish culture in ponds, Integrated fish farming and Ornamental fish farming under this programme. Financial and technical assistance and training provided to these small scale enterprises.

## Uthuru Wasanthaya Programme - 2011

Several programmes were implemented in the North under “Uthuru Wasanthaya” for the development of Inland Fisheries and Aquaculture.

- **Details of fish fingerlings stocked in the Northern reservoirs are given below.**

<b>District</b>	<b>No. of Reservoirs</b>	<b>No. of Fingerlings (Mn)</b>	<b>No. of Freshwater Prawn Post Larvae (Mn)</b>
Kilinochchi	8	874,050	100,000
Vauniya	28	1,103,430	-
Mannar	10	645,080	-
Mullaitivu	8	1,204,400	200,000
<b>Total</b>	<b>54</b>	<b>3,826,960</b>	<b>300,000</b>

- **Distribution of fishing gears, boats, bicycles and fish boxes**

60 No's fishing crafts have been distributed among Inland fishers to commence Inland fishing.

- **Mini nurseries**

Four sites were selected in Sirikkulama (Mannar), Muthiyankaddu (Mullaithivu), Akkarayankulam (Kilinochchi), and Vavunikulam (Vavunia) to establish mini nurseries in order to increase the fish fingerling production in Northern Province. Lands identified and land transfer process is in progress.

- **Aquaculture Development Centre**

Site was selected to establish Aquaculture Development Centre at Iranamadu, Kilinochchi to produce and supply fish seed required for stocking in northern reservoirs. Land identified and land transfer process is in progress. Perimeter survey was completed.

- **Sea cucumber fattening in pens**

Pilot project of sea cucumber farming in pens was started at Pllamunai, Mannar in order to introduce technology for sea cucumber fattening in pens and popularize among the community. Construction of pen completed and Sea cucumber farming was



commenced in 2011. 4100 nos .of sea cucumbers were also stocked .The two private hatcheries commenced breeding of sea cucumber commercially this year.

- **Oyster culture**

Oyster culture project was started at Achchankulam, Mannar and installed 30 racks and 10 rafts. Around 6,000 Oysters were sold and Monitoring of growth performance of Oysters is in progress. The objective of this pilot project to, demonstrate and transfer technology of oyster culture for livelihood development of internally Displaced People (IDPs), use the available resources for aquaculture and reduce poverty among the IDPs by enhancing their income.

- **Sea Cucumber Hatchery**

Land has been allocated and conceptual design has been made by the International consultant to construct a sea cucumber hatchery at Oleithuduwai, Mannar to supply Juveniles of sea cucumber required for culture and livelihood development of coastal communities.

- **Stock enhancement programme**

1.5 Mn *Penaeus monodon* were stocked in Nandikadal lagoon, Mullaitivu to increase the income of fishermen by increasing the shrimp production on lagoon.