



*National Aquaculture Development Authority of
Sri Lanka*

Annual Report



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Introduction

The performance of the National Aquaculture Development Authority of Sri Lanka (NAQDA) during the 12 months commencing from 01/01/2014 continued to improve as in the previous years.

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
2008	42,270	2,220	44,490	16
2009	43,010	3,550	46,560	2
2010	48,930	3,480	52,410	13
2011	55,410	4,150	59,560	14
2012	65,640	3,310	68,950	16
2013	62,480	4,430	66,910	-3
2014	70,600	5,150	75,750	13

The inland fish and aquaculture production grew significantly by 13% to 75,750 Mt. in the year 2014 which was an increase of 8,840 Mt. over that in the year 2013. Mainly the proper management of the water bodies with community participation, operation of community based mini-hatcheries, fish seed production, fish fingerling and freshwater prawn post larvae in reservoirs have been adapted for increase of inland fish and aquaculture production. Also the cultured prawns/ coastal aquaculture production increased during the year due to the control of the spread of disease as a result of the implementation of best practices and the expansion of farms. The depleted water levels in reservoirs also help to increase the inland fish production.

Foreign Exchange earned and contribution to rural economy

This inland fish and shrimp production in 2014 is valued at approximately Rs.13,940 Mn. contributing significantly to the rural economy. Further it is estimated that foreign exchange earned through export of cultured shrimps and ornamental fish is Rs. 3,375 Mn. and Rs. 1636 Mn. respectively.

Fry Production & Distribution

The Aquaculture Development Centers (AQDCs) at Udawalawa, Dambulla, Inginiyagala, Polonnaruwa and Nuwara Eliya produced 75.91 Mn fry in 2014. A part of these fry were sold to Private Pond Owners (PPO) and Community Based Organizations (CBO) managed Mini Nurseries for rearing to fingerling size.

Table 2 - Fry Production & Distribution (Million)

	2008	2009	2010	2011	2012	2013	2014
Fry sold to Mini Nurseries	15.13	17.34	15.79	17.55	10.85	12.52	6.57
Fry reared at AQDCs	11.78	13.32	16.14	28.80	40.05	62.74	55.39
Fry sold to PPOs	11.34	17.99	26.31	34.88	24.39	21.94	11.93
Issued to Cages	3.83	1.35	2.30	1.88	1.11	0.84	2.02
Total	42.08	50.00	60.54	83.11	76.40	98.04	75.91

Fingerling Production

In the year 2014, 40.98 Mn fingerlings were produced in Aquaculture Development Centers (AQDCs) of NAQDA, CBO managed Mini Nurseries and Private Ponds.

Table 3 - Fingerling Production (Million)

	2008	2009	2010	2011	2012	2013	2014
Fingerlings produced Mini Nurseries	6.60	8.14	8.03	8.47	5.63	5.76	4.27
Fingerlings produced AQDCs	6.70	9.62	13.75	20.35	21.18	34.94	30.94
Fingerlings produced PPOs	5.50	8.99	11.70	14.89	9.87	8.43	4.81
Cages	2.00	1.18	1.40	1.11	0.71	0.26	0.96
Total	20.80	27.93	34.88	44.82	37.39	49.39	40.98

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 - 2014

Type of the water body	Number of tanks / units	Fingerling Stocked (Mn)
Major Reservoirs	34	9.20
Medium Reservoirs	65	12.68
Minor Reservoirs	190	11.03
Seasonal Tanks	265	3.28
Ponds	782	2.04
Rivers and Lagoons	07	0.51
Total	1,343	38.74

Fresh Water Prawn Production (Post Larvae)

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

Table 5 – Stocking of Freshwater Prawn Post Larvae - 2014

Type of the water body	Number of tanks	Post larvae stocked (Mn)
Major Reservoirs	13	5.32
Medium Reservoirs	19	2.10
Minor Reservoirs	19	2.22
Ponds	48	0.22
Lagoons	01	0.06
Total	100	9.92

Freshwater prawn production has shown a gradual increase and has resulted in enhancing income of fishermen. In 2014, freshwater prawn production was about

460 Mt and thereby Rs. 368 Mn were contributed to the rural economy. Freshwater prawn created a new fishery in the inland waters and Export of Freshwater Prawn is an emerging trend. Today, there are mainly two companies engaged in exporting of freshwater prawn and 21.36 Mt, 20.68 Mt, and 141 Mt were exported in 2012, 2013 and 2014 respectively.

Programme to issue Fingerlings Free of Charge

Based on a Cabinet Approval dated 16.07.2008, stocking of fish fingerlings in the reservoirs free of charge basis commenced from 2009. The total sum allocated for this programme was Rs. 150 Mn. NAQDA received Rs. 30.00 Mn. during 2014.

Under this programme 27.70 Mn. fish fingerlings and freshwater prawn post larvae were stocked in reservoirs during 2014.

Development of Reservoir Fisheries

To improve the management of inland fisheries in perennial water bodies (by preventing illegal methods of fishing) the Authority conducted 315 raids during the year 2014. In addition, to this 356 management licenses were issued and 400 fishing crafts and 804 sets of fishing gear were distributed.

National Inland Fisheries and Aquaculture Training Institute, Kalawewa

During 2014, it provided facilities for 116 training programmes and generated an income of Rs 15.11 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 2014 under monitoring activities, 469 Aquaculture Management licenses including 444 Shrimp Farms, 20 Shrimp Hatcheries and 5 broodstock collectors were issued. Further, NAQDA conducted 4,071 no. of PCR tests to screen brooders and post larvae and tested 20 water samples for improving the quality of water in shrimp hatcheries in the area. These tests were carried out 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 for Monodon Bacula Virus and white spot disease by officials from the brackish water fish health and environmental laboratory.

In 2014, 43 Shrimp Hatcheries and 527 Shrimp Farms were operated in Puttalam District. Shrimp post larvae production during the year was 330 Mn.

Action is being taken to expand shrimp farming under cluster farming system in North and East of the country and suitable sites have been identified. Area under shrimp farming in the District of Batticaloa is increasing gradually.

Development of Shrimp Farming in Batticaloa District

Model shrimp hatchery in Puthukkudirippu 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. A private company manage the hatchery and 20.45 million post larvae were produced in 2014. This is the only hatchery available in the East and caters to the post larvae requirement of the expanding shrimp industry in the Batticaloa District.

Infrastructure development for cluster shrimp farming in Vakarai is to create alternative livelihoods to coastal communities specifically affected by the Tsunami 2004 by engaging them in shrimp farming on a cluster system. Further it is intended to develop the necessary infrastructure required to achieve the primary objective for creating livelihood. This is a model for the ecosystem approached shrimp farming based on a concept of cluster system. NAQDA together with Divisional Secretary, Vakarai selected an investor

and beneficiaries. It was formed an Aquaculture Development Society which was registered with NAQDA and the membership was comprised of all the beneficiaries. A company named Vakarai Ocean Aqua Cluster (Pvt) Ltd was formed with the investor and society as shareholders. This cluster farm is managed by Vakarai Ocean Aqua Cluster (Pvt) Ltd Company. From 2014 culture cycle, profit earned by the company was Rs. Mn 5.40 and each beneficiary received profit of Rs. 200,000.00.

Demonstration Shrimp Farm at the Air Force Base Camp in Batticaloa will train 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. 5.2 Mt. was harvested in 2014 and also 200 persons were trained so far from this farm.

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. 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 1,090,535 ornamental fish for farmers and exporters and earned Rs. 6.78 Mn. 52, 787 brooders were also sold in 2014. 30 training programmes were conducted and 1,087 people were trained in ornamental fish farming in the year 2014.

A tissue culture laboratory established at Rambodagalla is involved in tissue culture of ornamental aquatic plants. The main objectives of this are to technology transfer and to earn the foreign exchange by exporting aquatic plants.

Live rock export is a new addition to our product range and in 2014 live rocks to the values of Rs. Mn 7.30 has been exported.

“Divi Neguma” Programme 2011-2014

Under the above programme of the Ministry of Economic Development, 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
- Fish culture in estate tanks
- Oyster farming
- Sea bass farming
- Expansion of facilities in existing small scale ornamental fish farms
- Smoked fish

This programme provide assistance for aquaculture development at the house hold level and benefiting people who are interested in engage in aquaculture to provide nutrition and generate an additional income. Assistance provided to 5,319 small scale enterprises in Fry to fingerling rearing, Food fish culture in ponds, Integrated fish farming, Oyster farming, sea bass farming and Ornamental fish farming under this programme. Financial and technical assistance and training provided to these small scale enterprises. Around 14,200 ha of seasonal reservoirs were brought under fish culture under “Divi Neguma”.

A special programme is being implemented to support establishment of fish ponds in Estates, involving estate communities. Main aim of this programme is to enhance nutrition among estate communities whose per capita animal protein intake is very poor when compared to other parts of the country and also to provide additional income for them. This programme is implemented in Nuwara Eliya, Kandy and Badulla Districts during 2014.

Non- traditional Aquaculture

- **Sea cucumber fattening in pens**

NAQDA facilitate Sea cucumber fattening in pens. Projects were carrying out by private sector in Thewanpitti, Mannar south bay, Ambupuram Kilinochchi, Valaipadu Kilinochchi, and Nachchikuda Kilinochchi.

- **Sea weed farming**

NAQDA completed a pilot scale demonstration project in Valaipadu in North to verify and demonstrate technology for sea weed farming. A leading private sector company has commenced commercial scale sea weed farming with community participation in the North. Around 300 farmers have commenced sea weed cultivation under this programme.

- **Sea bass Hatchery**

NAQDA succeeded in breeding Sea bass under public private partnership. NAQDA provided expertise to breed Sea bass in a private hatchery. This will pave the way for expansion of Sea bass farming in Sri Lanka. 250,000 fingerlings were produced.

- **Sea bass farming**

Private sector involved in sea bass cage culture in Negombo lagoon, Kinniya lagoon, Puttalam and Galle. 55 farmers were involved in sea bass farming in cages and ponds. 43 Mt. of sea bass were also harvested in 2014.

A large scale sea bass farming in cages with an investment of US \$ 04 million commence operation in Trincomalee Sea. Objective of this venture is to introduce commercial scale marine based farming of fin fish to Sri Lanka. This will also create livelihood to coastal community through direct employment, reduce pressure on wild fishery and provide a consistent supply base, generate import revenue, added tourist attraction, and provide forward linkage opportunities such as value added fish production.

Project on Technical Assistance for Aquaculture Development in Sri Lanka under bilateral cooperation between Sri Lanka and Vietnam

The objective of this project is to transfer technology in sea cucumber breeding and farming, sea weed farming and lobster fattening. Under this project pilot projects initiated and technology transfer and training of officers and farmers were carried out with the assistance of Vietnamese experts. Total estimated cost is Rs. Mn. 4.55.

Pilot projects are in progress in following sites.

- Sea weed farming - Valaipadu
Around 70 Mt. of sea weed were harvested in 2014.
- Sea cucumber hatchery – Ambakadawila, Chilaw
424,000 juveniles were produced in 2014.
- Sea cucumber farming in ponds – Pulinchikulam
595.2 kg of sea cucumber were harvested in 2014.
- Sea cucumber farming in pens – Kiranchi
- Lobster fattening – Valaipadu
290 lobsters were stocked in 4 cages and monitoring is in progress.

Aquaculture Development Centre at Iranamadu

Construction of Iranamadu centre is in progress and the total estimated project cost is Rs. Mn 400. The objective of this project is to supply fish seed required for stocking in northern reservoirs in order to increase the nutrition level and rural economy by increasing the inland and aquaculture fish production.