



Annual Report 2013



National Aquaculture Development Authority of Sri Lanka
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Introduction

The performance of the National Aquaculture Development Authority of Sri Lanka (NAQDA) during the 12 months commencing from 1/1/2013 continued to improve as in the previous years.

There are many untapped reservoirs and coastal aquaculture resources in Northern Province which can be used for development of inland fisheries and aquaculture. Most of the resources especially untapped reservoirs were used for fish culture in the Northern Province in the year 2013 when compared to year 2012.

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
2012	65,640	3,310	68,950	15.7
2013	62,480	4,430	66,910	-2.9

In 2013, inland fish and aquaculture production declined by 3 per cent to 66,910 metric tons mainly as a result of the decline in the Inland fish capture in reservoirs by 6.2 per cent due to the lagged effect of the drought prevailed in 2012, which resulted in a depletion of fish stocks in reservoirs. However, the sub sector, aquaculture and cultured prawns/ coastal aquaculture grew by 15.8 per cent during the year due to the successful control of the spread of disease as a result of the implementation of best practices and the expansion of farms.

Foreign Exchange earned and contribution to rural economy

This inland fish and shrimp production in 2013 is valued at approximately Rs.12,694 Mn. contributing significantly to the rural economy. Further it is estimated that foreign exchange earned through export of cultured shrimps is around Rs. 2,521 Mn.

Fry Production & Distribution

The Aquaculture Development Centers (AQDCs) at Udawalawa, Dambulla, Inginiyagala, Polonnaruwa & Nuwara Eliya produced 98.04 Mn fry in 2013. A 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 28% when compared to fry production in 2012.

Table 2 - Fry Production & Distribution (Million)

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

Fingerling Production

In the year 2013, 49.39 Mn fingerlings were produced in Aquaculture Development Centers (AQDCs) of NAQDA, CBO managed Mini Nurseries and Private Ponds. This is a significant increase (32%), when compared to the fingerling production in 2012.

Table 3 - Fingerling Production (Million)

	2008	2009	2010	2011	2012	2013
Fingerlings produced Mini Nurseries	6.6	8.14	8.03	8.47	5.63	5.76
Fingerlings produced AQDCs	6.7	9.62	13.75	20.35	21.18	34.94
Fingerlings produced PPOs	5.5	8.99	11.70	14.89	9.87	8.43
Cages	2.0	1.18	1.40	1.11	0.71	0.26
Total	20.8	27.93	34.88	44.82	37.39	49.39

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. It is anticipated that the higher fish stocking during 2013, will support increase in inland fish production in 2014.

Table 4 – Stocking of Fish Fingerlings - 2013

Type of the water body	Number of tanks / units	Fingerling Stocked (Mn)
Major Reservoirs	36	9.07
Medium Reservoirs	71	12.76
Minor Tanks	264	15.57
Seasonal Tanks	852	9.10
Ponds	797	1.76
Estate Tanks	19	0.14
Rivers and Lagoons	3	0.18
Total	2042	48.58

Fresh Water Prawn Production (Post Larvae)

20.30 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 - 2013

Type of the water body	Number of tanks	Post larvae stocked (Mn)
Major Reservoirs	17	9.64
Medium Reservoirs	31	5.19
Minor Tanks	64	4.86
Seasonal Tanks	60	0.59
Ponds	40	0.15
Total	212	20.43

Freshwater prawn production has shown a gradual increase and has resulted in enhancing income of fishermen. In 2013, freshwater prawn production was about 572 Mt and thereby Rs. 515 Mn were contributed to the rural economy. It is noteworthy to record Freshwater Prawn is becoming an important.

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: 20.00 Mn. during 2013. Under this programme 40.93 Mn. fish fingerlings and freshwater prawn post larvae were stocked in reservoirs during 2013.

Development of Reservoir Fisheries

To improve the management of inland fisheries in perennial water bodies (by preventing illegal methods of fishing) the Authority conducted 250 raids during the year 2013. In addition, to this 356 management licenses were issued and 44 fishing crafts and 1320 sets of fishing gear were distributed.

National Inland Fisheries and Aquaculture Training Institute, Kalawewa

During 2013, 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 2013 under monitoring activities, 05 awareness programmes were held and 430 Aquaculture Management licenses including 384 Shrimp Farms, 43 Shrimp Hatcheries were issued. Further, NAQDA conducted 2,644 no. of PCR tests to screen brooders and post larvae and tested 147 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 2013, 43 Shrimp Hatcheries and 384 Shrimp Farms were operated in Puttalam District. Shrimp post larvae production during the year was 354 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

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 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. A private company manage the hatchery and 35 million post larvae were produced in 2013. This is the only hatchery available in the East and caters to the needs of the expanding shrimp industry in the Batticaloa District.

NAQDA supported establishment of a cluster farm in Vakaraai, Batticaloa with the involvement of small scale farmers and this will be a model for eco system approached shrimp farming. At present 210 ha are under shrimp farming.

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 1,328,390 ornamental fish for farmers and exporters and earned Rs. 7.99 Mn. 542,632 brooders were also sold in 2013. 43 training programmes were conducted and 1391 people were trained in ornamental fish farming in the year 2013.

“Divi Neguma” Programme 2011-2013

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 2013.

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.

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

Two culture cycles were completed and third cycle has been started. 10.58 Mt were harvested.

- Sea cucumber hatchery – Ambakadawila, Chilaw

Two culture cycles were completed and third cycle has been started.

- Sea cucumber farming in ponds - Pulinchikulam

- Sea cucumber farming in pens – Kiranchi

- Lobster fattening – Valaipadu

Uthuru Wasanthaya Programme - 2013

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 during 2013 are given below.**

District	No. of Reservoirs	No. of Fingerlings (Mn)	No. of Freshwater Prawn Post Larvae (Mn)
Kilinochchi	19	1,440,000	80,000
Vauniya	53	1,810,654	316,000
Mannar	3	180,000	-
Mullaitivu	32	1,155,000	600,000
Total	107	4,585,654	996,000

- **Mini nurseries**

Established mini nurseries at Giant tank, mannar, and Muthiyankaddu, Mullaitivu to in order to increase the fish fingerling production in Northern Province. These mini nurseries are managed by fisher communities.

- **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.

- **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 90 farmers have commenced sea weed cultivation under this programme.