

**Export oriented Ornamental Fish Industry in Sri  
Lanka**

**By**

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**M. Sc. In Fisheries and Aquatic Resources Management**

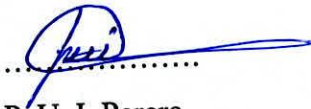
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**University of Sri Jayewardenepura**

**May 2009.**

## Declaration I

The work described in this thesis was carried out by me under the supervision of Dr.R. R. M. K. P. Ranatunga and Dr. H. M. Palitha Kithsiri and a report on this has not been submitted to any University for another degree.



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## Declaration II

We certify that the work of P. U. I. Perera on Export Oriented Ornamental Fish Industry in Sri Lanka for the degree of M.Sc. in the Faculty of Science at University of Sri Jayewardenepura.

We feel that the candidate's work is complete and suitable for submitting to the University for the purpose of evaluation.

  
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Thesis submitted to the University of Sri Jaywardenepura for the award of the degree of Master of Science in Fisheries and Aquatic Resources Management.

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## ABSTRACT

This project was to study the present status of export oriented ornamental fish industry in Sri Lanka with a view to identify constraints faced by the farmers and exporters and recommend remedial measures for the sustainable development of the industry. Fifteen of the major exporters from Colombo and Gampaha Districts were interviewed during the study.

It was observed during from the study that the main problem in the ornamental fish farming industry is the undercut of ornamental fish prices. This undercut process adversely affects the industry. Lack of low cost nutritious feed for fish is another problem in the ornamental fish farming industry. Generally feed cost contributes about 50% of the operational cost. Therefore, to sustain the industry, research organizations should focus their research to formulate low cost nutritious feed for ornamental fishes. Another problem in the industry is bad packing practices during transportation of fishes. Freight charges mainly calculated base on the weight of the packing boxes. Hence, more fish have to be packed in a bag to minimize the transport cost and therefore, research should be focused on improving packing conditions. The other problem the industry face today is the lack of high quality brood stock for ornamental fish breeders. Therefore, it is recommended that relevant government institutes should discuss the issues and challenges responsible for the development of this sector with fish exporters and farmers and make necessary arrangements to overcome those constraints for the sustainable development of ornamental fish industry in Sri Lanka.

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# Chapter 1

## Introduction

### 1.1 Background

Ornamental fish industry in Sri Lanka presently earns substantial foreign exchange (Rs. 972 million. in 2008) (EDB, 2009). However, this level of achievement can be considered as modest compared with the opportunities available in a rapidly growing global market of over US\$ 3 billion for ornamental fish and related accessories in which the local share is negligible. Therefore, this industry can be expected to contribute far greater advantage to Sri Lanka's economy than at present, by harnessing the vast and varied resources available in the country.

Sri Lanka has a tropical climate, in many areas of this country suitable for aquarium industry. Aquarium fish industry can be categorized into four groups based on medium as follows;

Tropical marine species

Tropical freshwater species

Brackish water species

Cold water species

There are 111 freshwater fish species in Sri Lanka (Pethiyagoda, 1991). This includes 21 exotic species, which have been introduced either by intension or accident during the last century. There are 44 endemic fishes record in Sri Lanka (IUCN, 2007). As far as the ornamental fish trade is concerned, 35 popular species are exported in the market. Ten species dominate the global freshwater ornamental fish trade. Neon tetra (*Paracheirodon innesi*) and guppy (*Poecilia reticulata*) accounts 60% of the export trade. Marine ornamental fishes contribute 20% and brakish water fishes contribute about 05% of the export trade.

In Sri Lanka exported freshwater live fish are either bred and cultured in captivity and collected from wild. Most of prohibited endemic fish species which have high demand in the world ornamental fish trade are collected from wild. Live freshwater animals include finfish and some crustaceans while marine exports include both finfish and invertebrate species.

## **1. 2 Importance of ornamental fish industry in Sri Lanka**

### **01. Additional income generation**

Many people engage in several employments. But they are possible to combine with the industry by using their rest of time for earning additional income.

### **02. Self employment opportunities**

Many people are engaged in this industry as a self employment. Employment opportunities have greatly increased and as a result, many youngsters now making a living by collecting marine and inland water fish, invertebrates from the wild for export and local market.

### **03. Land usage**

In Sri Lanka more lands are abundant. Lands which cannot be used for agriculture or other purpose could be utilized for ornamental fish farming.

### **04. Foreign income generation**

This industry has become an important foreign income generation in Sri Lanka by earning about 8.7 million US\$ annually.

### **05. Land suitability**

Most of the areas in Sri Lanka are suitable for ornamental fish farming as there is good quality water, favourable climate.

#### **06. Minimum investment**

This industry can be initiated with minimum investment and after they can develop gradually.

#### **07. Minimum environmental pollution**

Ornamental fish farming can be done with minimum environmental pollution unlike other aquaculture industries.

#### **08. Minimum space**

Ornamental fish farming can be done with minimum space.

#### **09. Breeding and culture technologies**

Because of the institutional involvement in giving scientific and technological knowledge, breeding and culture technologies are available for many high demand species among the fish farmers.

#### **10. Minimize the risk of human**

Ornamental fish keeping known to helps to minimize the risk of human heart diseases as well as aesthetic purposes.

### **1. 3 History and culture of ornamental fish industry in Sri Lanka**

Ornamental fish industry in Sri Lanka has a long history and has started with small scale outlets in homes in cities. Ornamental fish export industry in Sri Lanka was initiated in 1930's and the industry was totally based on export of wild collected fish, particularly freshwater species (Axelrod, 1960). There were few number of exporters in Sri Lanka. The first commercial aquarium was started in 1952 in Colombo (Rodney, Jonklass, 1988). This industry was commercialized by few medium scale and large scale farmers about 50 years ago and it has now developed into a lucrative industry affording profit and employment to many (Kuruppu, 1998). The export aquarium trade expanded gradually from the 1950s as

more exporters began to operate from Colombo. As air transport got more popular and less costly, live aquarium fish for export took to the skies. Commercial level ornamental fish exports started in 1980's (Mee, 1991).

Sri Lanka presently earns about 8.7 million US\$ from the aquarium trade and export ornamental fishes to over 40 countries (EDB, 2007). In Sri Lanka, there are about 20 large scale companies engage in exporting ornamental fish in to various countries, throughout the world (EDB 2007). Aquarium fish industry in Sri Lanka initiated around Colombo which is the commercial capital as a result of establishment of zoological garden in Dehiwala (Jonklaas, 1989). The industry established at such a scale that it continued to grow and finally it developed to an export market. As a result of overcrowding, high labour cost and lack of land for overgrowing system, the large scale growers started to move out to rural areas of the dry zone in the country. Presently the out growing systems are distributed in western, north central, north western and central provinces of Sri Lanka (Weerakoon, 1997).

Exporters assist the contract growers by supplying fish fry, feed, chemicals and basic technology for growing aquarium fish and to buy back system when the fish ready for export market.