Chapter 9

SWOT Analysis
9.1 Introduction

SWOT analysis is a tool for auditing an organisation and its environment and it helps marketers to focus on key issues. SWOT stands for strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are internal factors whereas opportunities and threats are external factors. According to Tomey (1986) in the ornamental fish trade dealing with live aquarium fish and other aquatic organisms, the producer should make themselves familiar with all opportunities and threats in order to be able to take advantage of the visible and less visible opportunities and to avoid the hidden pitfalls with which every entrepreneur be it a breeder, exporter or wholesaler has to deal with some day or other. Tomey (1997) reviewed the developments in the world ornamental fish trade and attempted to look into the future of international, ornamental fish trade sector by the use of SWOT analysis and gave views on the commercial production of aquarium fish in developing countries. The study therefore aimed at carrying out a SWOT analysis of the indigenous ornamental fish industry of Kerala.

9.2 Methodology

The respondent marketers' answers regarding the indigenous ornamental fish marketing mix of the firm was cross tabulated with the category of marketers and the results were presented in the previous chapters. A SWOT analysis of the results were carried out which was consolidated in the chapter under four heads namely strengths, weaknesses, opportunities and threats.
### SWOT Analysis of Indigenous Ornamental Fish Sector in Kerala

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Figure: 9.1 SWOT Analysis
9.3 Results and Discussion

9.3.1 Strength

The strengths which the indigenous ornamental fish industry of Kerala could capitalise on as per the study were unique indigenous ornamental species portfolio, high demand for indigenous fishes of Kerala, experienced and educated marketers and institutional support, large number of indigenous fish sources. According to Tomey (1997) the strength and success of the wild caught ornamental fish sector lies in careful handling of the catch right from the fishermen to the exporters, giving the fish the opportunity to recover from the change in their environment. He noted the strengths in the industry in general as changing social structure in the industrialized countries, freshwater species that can be introduced for commercial production, regular supply of up to date pricelists complete with exact scientific name of fish species and varieties, knowledge of winter and summer period in importing countries etc. Wijesekara and Yakupitiyage (2001) carried out a SWOT analysis of the ornamental fish industry in Srilanka and noted the strengths of the ornamental fish industry of the country as favourable year round climatic condition, excellent geographic location, recognized international reputation for quality fish and widely distributed financial institutions.

9.3.1.1 Unique species portfolio

The export portfolio of the country portrayed 319 indigenous fishes (Table: 3.9) which were marketed as ornamental fishes from India. Of the three hundred and nineteen fishes, 57 were noted from the water bodies of
Kerala (Table: 3.12).

9.3.1.2 High demand for indigenous fishes from Kerala

As per the study *P. denisonii, T. travancoricus, P. mahecola, C. dadyburjori, Mastacembelus armatus* and *P. fasciatus*, were the indigenous ornamental fishes that were highly preferred (HPE) in the export market (Figure: 3.2). These fishes were marketed in consistent numbers, very regularly from Kerala. The survey noted that the preference for the fishes was so high that the importers demanded any of the fishes (especially *Puntius denisonii* and *Tetraodon travancoricus*) in the HPE group to be included in all the consignments they imported from India.

9.3.1.3 Experienced and educated marketers

A general notion was that the marketers in this sector were not educated. According to the study (Table: 4.4) high percentage of the marketers (54.3%) had a bachelor degree and very less percentage (2.9%) of the marketers had less than secondary level education and for a good majority of them fish keeping was a passion right from their childhood and they attached much importance to the conservation of the species. On analysing the exporters of indigenous ornamental fishes of Kerala separately it could be seen that 46.2% had an experience of 10-15 years (Table: 4.5). The study also noted a rush of indigenous ornamental fish marketers in the 2000-2005 periods which depict the fact that, when a product has high demand and a boom in the market is sensed for that particular variety; along with licensed and reputed marketers many unscrupulous elements mushroom to make the best bargain out of the
9.3.1.4 Institutional support and promotions

Initiatives of the state government in conducting trade fairs on yearly basis, activities of the nodal agency MPEDA in market development assistance, export developmental assistance and culture oriented subsidy and role of research institutes such as CMFRI, ICAR Funded NATP Projects in Fisheries college, Panangad, NATP Project and MPEDA adhoc projects in School of Industrial fisheries and CUSAT in resource analysis and breeding played a significant role in the promotion of indigenous ornamental fishes of Kerala (Table 6.5). The schemes of MATSYAFED and NABARD also played a key role for the development of ornamental fishery sector. The exhibitions taken up by the government of Kerala have increased the hobby which in turn has increased the demand for ornamental fishes. The websites of MPEDA and MPEDA adhoc project invited a lot of fish hobbyists to the Indian and Kerala fishes. The advertisements by MPEDA in international magazines were some examples of promotion tools.

9.3.2 Weakness

Weaknesses noted in the ornamental fish industry were, backwardness in competitive position, obsolete facilities, lack of quality product, falling behind in research and development, weak market image, missing key skills or competencies, small cultured fish species portfolio, lack of an association among the channel members. According to Tomey (1997) immune deficiency, culture derived diseases, quality and production
problems and artificial aquatic problems were the weaknesses in ornamental fish industry. Wijesekara and Yakupitiyage (2001) noted the weaknesses in the Srilankan ornamental fish industry as lack of technology transfer, poor knowledge on diseases, poor knowledge on advanced breeding techniques and insufficient air cargo facilities.

9.3.2.1 Backwardness in competitive position
In competitive position, India does not figure anywhere among the major ornamental fish exporting countries of the world. India's share in the world trade is to the tune of 0.25%. Export from Kerala started very recently in the year 1999 with an export of 6.39 lakhs and was 8.7 lakhs in the year 2002-2003 (Anon, 2003c). On comparing the position of Kerala in the Indian export trade, it was noted that Kerala occupied fourth position after the metropolitan cities like Calcutta, Bombay and Chennai with an export value far behind the metropolitan cities (Figure: 4.2). An inhibition of Keralites in risk taking was one important reason for the backwardness in ornamental fish export from Kerala.

9.3.2.2 Obsolete facilities and poor infrastructure
Non-availability of direct overseas flight to major market destinations from the airports of Kerala and lack of adequate live fish handling and transport facilities formed a serious obstacle to efficient distribution (Figure: 4.6). Ornamental fish consignments from Kerala had to undergo several transshipments before it reached its final destinations as straight and frequent flights were not available from Kerala to the major ornamental fish marketing countries. In addition to this the flights from India were seen to
be reluctant to handle perishable traffic as they could not shoulder the responsibility. The flight authorities were also hesitant to charge commodity rate due to the small quantity of ornamental fish consignments compared to the other export items which were exported in large quantities. The two flights which carried the largest number of ornamental fish consignments from India were, Lufthansa and Singapore airlines, rather than the Indian airlines or air India. Yet another drawback concerning infrastructure was that, majority of marketers in the state did not have sufficient facility as in the case of exporters of India for storing or acclimatizing the fishes before transportation. Hence the channel members’ rushed to dispose the fish at the earliest from the hands of the channel members which resulted in transport without acclimatisation and led to increased mortality rates.

9.3.2.3 Lack of quality product

Lack of quality product for export was mainly due to poor handling and shipping techniques. As per the response of the marketers’ surveyed (Figure: 4.4), high percentage (34%) of marketers considered DOA as the major complaint (Figure 6.7) followed by it was deformity (29%), bad health (20%), dirty water (5%), size difference (5%), shortage (3%) and wrong fish (3%). Though DOA formed the major complaint by majority of the marketers DOA and its claims varied depending on importers. Sometimes loss of fish in transit up to 5-10% were ignored but above that it had to be generally borne by the trade i.e., exporter, even if the responsibility may sometime be of the airlines or any other sources.
Mortality while collecting and marketing have to be minimized as it will put extra pressure on the resource.

9.3.2.4 Falling behind in R&D

In the international level, research on ornamental fish has reached genome transgenic, compressed packing and feed technology but in India the technology to transport the live ornamental fish in good health and high survival rates during catching, handling and transportation is still in its nascent stage.

Marketers of the state did not have a clear strategic direction regarding marketing and do not obtain market information by means of consumer survey and market research (Table 4.13) regarding the demanded varieties, their price variations and latest market trends.

9.3.2.5 Weak market image

The study revealed that the Indian ornamental fish exports had a weak market image of broken contracts, lack of quality in product deliveries of products not to specification, short deliveries, unsatisfactory packaging, infrequency of delivery, unreliable and extended delivery times. Only a hand countable number of exporters marketed quality products to keep up the image of the country. Industry inattention to a quality product creates a weak market image.

9.3.2.6 Missing key skills or competencies

The number of skilled divers specialised in ornamental fish collection as in the case of neighbouring countries like Srilanka or Maldives were almost
nil in Kerala. Though the numbers of skilled fish breeders who have taken subsidies from MPEDA as per official records were to the tune of 782 in India and 295 in Kerala and the number of breeders in the state even exceeds this number but we have not been able to utilise their abilities for the betterment of exports.

An aspect which was noted while studying the export constraints (4.6) was that, in the case of marketers from Kerala language problem was high as many of them were not proficient enough to use English, for communicating with the importers of other countries. Hence many established and experienced traders in Kerala who had all facilities such as storage area, access to collectors experience and the willingness to expand their business had to restrain from taking up the export of indigenous ornamental fishes of Kerala.

9.3.2.7 Lack of an association between marketers
Marketers were noted to be diverse in their interests and there was disunity in their activities. Except for some scattered non functional associations no organised association of fish exporters were found in the state and the country. Associations can help in approaching the problems as one in regulating prices, monitoring activities within the industry and protecting its members against bad importers who take our shipment and forget to pay them.

9.3.2.8 Small cultured species portfolio
The product line of the export firms showed that the percentage of exotic fishes was less than 15%. Of the 360 ornamental fishes exported from
India only 41 were exotic fishes. Even though there was a good demand for exotic fishes in the export markets large varieties were not bred in sufficient quantities and those fishes bred here did not satisfy even the domestic demand. The captive bred indigenous ornamental fishes was also very less in number (3.3.1.6).

### 9.3.2.9 Exorbitant freight charge

Most inhibiting factor in ornamental fish export is the exorbitant freight rates to major important destinations. Freight formed almost 20-50% of the landed cost of fishes to the importer (depending on the size and the species of fishes) and such a situation existed because there were no specific commodity freight charges to most of the European and American destinations where the major buyers are located. Compared to the competitor countries such as Singapore, Thailand, Honking, Srilanka, Malaysia etc the freight rates from India were 2-3 times higher. Higher air freight charges in comparison to the freight being paid by other countries holds back the entrepreneurs from investing in this sector.

### 9.3.3 Opportunities

Opportunities that are in store for the marketing of indigenous ornamental fishes include, entry to new markets or segments, enhancement of species portfolio, faster market growth, culture of threatened or vulnerable ornamental fish species, increased awareness among International buyers of environmental issues and consistent quality. Wijesekara and Yakupitiyage (2001) noted the opportunities in Srilankan ornamental fish industry as international buyers who are aware of Srilankan fishes, wide
variety of wild collected fish species and breeding of indigenous fish species.

9.3.3.1 Entry to new markets or segments

India exports ornamental fishes to about 30 countries. The main countries importing Indian indigenous ornamental fishes are Japan, U.S.A, U.K, Germany, and Netherlands. Since the flight facilities from Kerala are more in number to the Middle East countries, those countries have emerged to be prospective markets for the state and the country. The study also noted prospects for the indigenous ornamental fishes of Kerala in the domestic market (8.2.2).

9.3.3.2 Enhancement of species portfolio

57 species of wild caught freshwater fish noted in the export market are presently catalogued in the report. The feasibility of maintaining these fishes in aquarium were studied during the MPEDA adhoc project period 2000-2001. Murthy (2002) described 165 indigenous marine ornamental fishes of which can be utilised for the ornamental fish purpose.

9.3.3.3 Faster market growth

The indigenous ornamental fishes of Kerala especially *Puntius denisonii* has shown a quantum leap in market growth. Rather than concentrating on one species consumer demand and tastes have to be found to increase the market growth of those species.

9.3.3.4 Breeding and culture of indigenous fishes

By breeding the indigenous varieties the marketing or export can be boosted. Breeders can pay more attention to the culture of threatened
and vulnerable varieties which have high demand in the markets. (As per the official unpublished records the benefit was availed by 782 units in India and 295 units in Kerala from 2000-2001 till 2003-2004.)

9.3.3.5 Increased awareness among International buyers

Of late an increased awareness was noted among the national and international buyers on environmental aspects and especially the consistent quality. Marketers who are able to supply quality fishes consistently will be able to obtain a position in the market.

9.3.4 Threats

Though ornamental fish trade provides revenue for developing countries the industry must be developed with a conservation ethic for it to be of lasting value. The possible threats in supporting and maintaining the sector on a long term include over-exploitation of the natural populations of commercial species, destructive collection methods, high post harvest mortalities, introduction of chemicals, in-fighting and price cutting among domestic producers and importers, introduction of non native organisms, adverse government policies, competition from neighboring countries who have strong government support to this sector, competitors having superior access to channels of distribution, Industry inattention to a quality product. The threats noted by Wijesekara and Yakupitiyage (2001) in the Sri Lankan ornamental fish industry were over exploitation of wild resources, lack of expertise on disease identification and treatment, rapid urbanization and environmental degradation, chemical pollution and quality control and various type of predators.
9.3.4.1 Over-exploitation of natural populations

Generally a tendency noted was that the marketers of indigenous fishes depended much on the harvest of few of the demanded species rather than on wide varieties. Even though more than 60 varieties were noted in the ornamental fish trade and there existed a scope for 60 more varieties to be introduced as ornamental fishes, there was an increased dependence on varieties such as *Puntius denisoni* and *Tetraodon travancoricus*. Dawes (1999a) makes a comparison of the quantity (in tones) of the marine fish for collected for food and ornamental purpose and value of the collected marine food fish and marine ornamental fish and states that marine ornamental fishes can be seen to represent a low volume but high value industry.

9.3.4.2 Destructive fish collection methods

The use of destructive fishing methods such as mass poisoning, dynamiting and electric fishing depleted the resource indiscriminately. Introduction of exotic fishes in reservoirs which escape into rivers (tilapia have now become common in the lower, mid, as well as up streams of important rivers of Kerala) resulted in the replacement of ecological niche of native species from their habitat.

9.3.4.3 Introduction of non native organisms

Introduction of fishes such as *Tilapia mossambica*, *Clarius* sp and Piranhas can be detrimental to the indigenous ornamental fish resource of the native ecosystem.
9.3.4.4 Drastic drop in price

Indigenous fishes of Kerala fetch very low FOB price in the international market as marketers do not project a steady price for the fishes, either due to ignorance of the demand of the fishes in the market or due to the in fighting between the marketers (Table 5.4 and 5.5). The coefficient of variation was highest for *Anabas testudineus* followed by *Horabagrus brachysoma*, *Nandus nandus*, *Puntius denisonii*, *Tetraodon travancoricus* and *Barilius bakeri* indicating high fluctuations in their FOB prices (Table 5.7). The high fluctuations in the prices may be attributed to a number of reasons such as, high variations in demand, competition between the channel members, lack of market awareness among channel members or lack of a floor price. The high fluctuation in price may be due to the fact that some exporters who are desperate try to garner a large share of the market by dropping the established rates of fishes.

9.3.4.5 Adverse government policies

Restrictive import barriers to India for ornamental fishes do not facilitate the breeding of large varieties of exotic fishes even though there are good breeders in the country and the state. Legal implications deter marketers from judiciously exploiting the resources from the marine water bodies which is a lucrative collection site.

9.3.5.6 Competitions from very small countries

The country and the state faced competition from small neighboring countries that have strong government support to this sector, competitors having superior access to channels of distribution. The export
performances of our tiny neighbors, Sri Lanka and Maldives have improved tremendously due to the strong governments support to this sector.

9.3.5.7 Export to re exporting countries

From 2002-2003, a paradigm shift was noted in the export trend from India and the export share to Singapore which was 1.09 % during 1994-95, made quantum leap by the year 1999-2000 to 25.08% and in 2002-2003 it beat all the markets of India and achieved a market share of 34.7% of Indian exports. Though Singapore is the major exporter to developed nations this country imports aquarium fishes from other Asian countries at cheaper rate and in turn sells it at a higher profit for itself. Consignments that reach Singapore, Hong Kong and Holland are mostly re exported to other western countries. Sky rocketing exports to re exporter countries especially, Singapore compared to the snail paced growth of exports to consumer countries like USA, UK, Japan and Europe alarms of an impending threat in exporting ornamental fishes to Singapore. Re exporting countries acquire fishes from all parts of the world including India to expand its otherwise wide product portfolio to lure the importing countries who preferred acquiring fishes from countries which are able to supply maximum varieties of fishes and that too on a lesser airfreight. As a result the importers prefer obtaining even Indian fishes from Singapore rather than from India as Singapore has excellent logistical hub with free trade zone and better air cargo network in addition to their diversified product portfolio unlike that in India. Indian exporters export ornamental
fishes to Singapore aiming at short term benefits but they do not realize
the fact that in the long run India would be losing their best markets
destinations and lost markets are difficult to regain. Sane (1982a) had
warned of the significant hazard and noted that Exporters of fish from
Singapore and Bankok were too eager to import fish of India origin which
could not be easily bred under captive condition, like *botia gagata*. If the
government allows export of these fishes to far eastern exporting countries
like Singapore and Thailand in particular we will be digging our own
graves. The reason is that it is economical for the western countries to
import these species from Singapore, Bangkok even by paying double or
even 3 times the Indian prices considering the freight costs and small
shipments from India.

Kerala has an excellent competitive advantage as strengths and
opportunities which it can tap to its own benefit. If the marketers of Kerala
and Keralites try to capitalise on the key strength, alleviate the major
weaknesses, avoid significant threats and take advantage of the most
promising opportunities the indigenous ornamental fish industry of Kerala
can elevate the position of the industry of Kerala and can attain a prime
position in India and elevate the position of India in the world trade.