1992

The Philippine industry: Marine tropical fish

Aquaculture Department, Southeast Asian Fisheries Development Center

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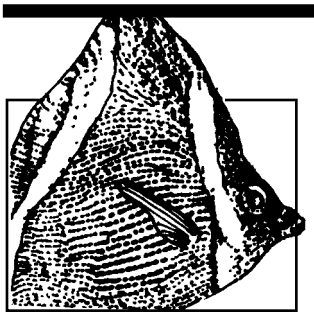
for commercial purposes will lead to gradual extinction of such fauna and consequent damage to the environment.

Importing countries are concerned that the trade may result in damage to their local biotope. They are therefore taking a number of measures to prevent the introduction of species which, if allowed to proliferate, might spread disease among domestic livestock (including poultry), or even among humans.

Hence, national authorities responsible for export development would find it useful to establish a joint body to assist, guide, and supervise the aquarium fish export trade and industry. Such a body would be composed, for example, of officials of the fisheries department and the export promotion agency, and of representatives of the trade.

Source: **International Trade Centre UNCTAD/ GATT**. 1979. *International trade in tropical aquarium fish.* Geneva.

The Philippine Industry



The tropical ornamental fish industry, both freshwater and marine, is **the** least known and recognized in the fisheries sector. Its development is not as good as the other branches of fisheries.

Regardless of this shortcoming, the tropical fish industry continues to grow steadily. As a hobby, it is fast gaining popularity and many hobbyists are switching to aquarium fish because of its advantages. Unlike other pets, tropical fish does not occupy a lot of space. For small homes, a mere 30 × 60 cm area will suffice. Tropical fish is also less messy compared to dogs, cats, birds, and other pets. It is an interesting and beautiful house decor, too. Tropical fishes do not eat much, so they are economical to grow. Also, many professionals' offices and doctors' clinics have aquarium displays because watching fish swimming gracefully calms the nerves of waiting clients and patients. Modern equipment now available makes the culture of tropical fish less complicated. For travellers, this is also the easiest pet to keep because food required can actually be measured and placed in an automatic dispenser attached to the tank.

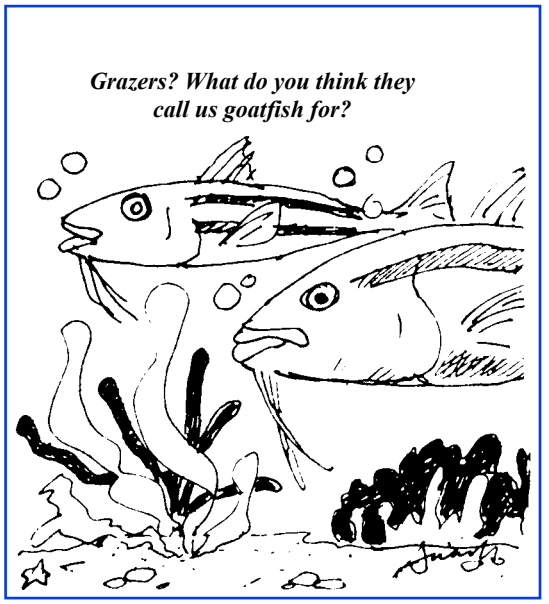
In short, tropical aquarium fish can be a flourishing industry.

Marine tropical fish

The Philippines is the biggest exporter of marine tropical fish. The industry has been in existence for 20 years or so. During the first five years, only a few people engaged in the trade. In the '70s and '80s, more people realized its potential, thus increasing the number of people involved in this trade.

The Philippines supplies 70% of the world's marine tropical fish requirement, comprising 340 known species of fishes. In the United States alone, it is estimated that 80% of their imported aquarium fish comes from the Philippines. The country has an advantage over others in producing and shipping aquarium fishes - advance technology in handling and packing, modem equipment, and variety. Other Asian countries like Singapore, Taiwan, and Hongkong have to import from the Philippines to supplement their own limited supply and variety. Export markets include United States, Canada, England, West Germany, Belgium, Italy, Spain, France, Australia, Sweden, Switzerland, Australia, Japan, Thailand, Singapore, Taiwan, and Hongkong.

The aquarium fish industry is fast becoming a major source of dollars for the country. Hence, it is of utmost importance to develop this trade. Unfortunately, government attention to the industry is inadequate. One



important contribution though is the launching of the "Bantay Dagat" Program of the Department of Agriculture. Under the program, the Bureau of Fisheries and Aquatic Resources "plants" thousands of artificial reefs in various Philippine seas. Although this program is not exclusively for the benefit of the aquarium industry, it actually helps increase the supply of fish. Many suppliers and collectors confirm that these artificial reefs are now inhabited by all forms of marine life, especially the coral- and rock-dwelling species.

Today, industrialized countries are dumping more wastes in the seas. Pollution, compounded by siltation and illegal fishing, is rapidly destroying coral reefs and killing marine life. If not stopped now, this will result in the destruction of marine life and consequently spell the end of the aquarium fish industry.

At the *National Export Congress* held on 24-25 May 1989, Secretary Jose Concepcion, Jr. of the Department of Trade and Industry announced the total export target of US$15 billion by the year 1992. This may signal the realization of the dream to become a newly industrialized country by the year 2000. In answer to the call of Secretary Concepcion, the tropical fish exporters are working very hard to increase the volume of their export.

The country's tropical fish export has steadily increased over the years. Recently, however, some setbacks occurred. An airline is slowly killing the business by reducing air transport space. In fact, confirmed shipments have been unloaded in several instances. Thus, a reduction in export volume. Also, afternoon flights to the United States arrive too late for regular customs clearance.

It is hoped that the government can help in this regard. Then, the industry can help make economic progress a reality for the Filipino people.

Source: Lolita Ty. 1990. *Overview of the Ornamental Fish Industry.* In: **Status of the Ornamental Fish Industry in the Philippines; Proceedings of the 1st National Ornamental Fish Symposium and Exhibition in the Philippines**; 17 October 1989; Metro Manila; PCAMRD and TLRC.

Resources

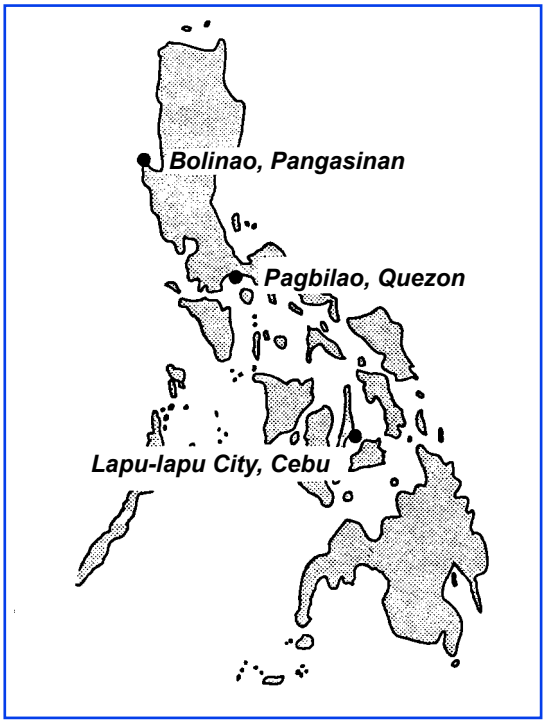
Fish groups. There are 25 groups of fish comprising 243 species (and 32 others not included below) that can be found in the Philippines for aquarium purposes. The groups and their corresponding number of species are as follows:

1.	Angel fish	- 28
2.	Angel fish	4
3.	Anthias fish	8
4.	Batfish	3
5.	Bleeny	4
6.	Butterfly fish	- 35
7.	Cardinal fish	4
8.	Clown fish	9
9.	Damsel fish	- 15
10.	Eel	6
11.	File fish	6
12.	Goat fish	3
13.	Goby	- 20
14.	Grouper	16
15.	Grunt fish	6
16.	Hawk fish	4
17.	Lion fish	7
18.	Parrot fish	5
19.	*Pseudochromis*	3
20.	Puffer fish	7
21.	Shark	4
22.	Snapper	- 5
23.	Tang fish	9
24.	Trigger fish	- 10
25.	Wrasse	- 19

Aside from these, there are also 66 known species of invertebrates being exported, namely:

1.	Anemone	-	12
2.	Crab	-	6
3.	Lobster	-	3
4.	Seahorse	-	3
5.	Shrimp	-	9
6.	Sponge	-	2
7.	Starfish	-	8
8.	Urchins	-	2
9.	Featherduster	-	3
10.	Live shell	-	7
11.	Sea slug	-	4
12.	Octopus	-	2

Other invertebrates number five species each.



Trading zones. There are three major trading zones in the Philippines for marine aquarium fishes, namely: Pagbilao, Quezon; Bolinao, Pangasinan; and Lapu-Lapu City, Cebu (above map).

Pagbilao, Quezon

This is the biggest trading zone of aquarium fishes. Barangay Polo, Sitio Ibaba, is the base of 25 managers (middlemen) and 300 or more collectors. Almost all are migrants and descendants from the Visayan region, specifically Sta. Rosa, Olango Island in Cebu. Pagbilao has the most extensive collecting grounds, covering the areas of Panambok, Talaw-talaw shoal and Dalahican, Quezon. And what makes this zone more extensive is that most of the big suppliers from this area operate in far flung places like Palawan, Mindoro, and other known reefs in the Visayas. One fishing expedition with 15 divers lasts for 10-15 days. Coral reef area most often explored by Pagbilao collectors are Agdangan, Gen. Luna, Catanuan, Padre Burgos, Aurora, and Polillo Island in Quezon; Burias in Masbate, part of Marinduque, and Mindoro Oriental; and Caramay, Bugsuk, and Quiniluban group of islands in Palawan.

Lapu-Lapu City, Cebu

Cebu in general is considered the second biggest trading zone. The traditional collecting grounds are the southern part of Cebu, Bohol, Siquijor, Negros Oriental, Leyte, and some parts of Davao and Surigao del Norte. The double-barrier reefs of Dajanon Bank, the fringing reefs of the nearby islands of Olango, north and northeastern parts of Bohol are also their favorite collecting areas.

There are about 116 species of fishes, 34 genera, representing 33 families and 39 species of invertebrates coming from Cebu.

Bolinao, Pangasinan

The smallest trading zone is Bolinao. There are only six legitimate aquarium fish middlemen and about 30 or more collectors. Collection of fishes is done in the shoal reefs of Pangasinan Gulf, Fagg Reef, Poro Pt. in San Fernando, La Union, and part of Olanin Bay in Pangasinan.

Other trading zones fast catching up with the three traditional zones include Sta. Cruz, Masinloc, and Matain, all in Zambales; Bicol; Sulu and Zamboanga.

Production. Bolinao, Pangasinan produces a maximum of 239 *bayongs* or *cara-*

gumoy bags of assorted tropical fishes every month. One *bayong* contains about 2-10 rare or expensive fishes and 100-200 ordinary or less expensive fishes, like damsels, etc. There is no known tally as to the actual number of fishes delivered from this area to Manila, nor is there an accurate record of the total cost of fish delivered. However, based on interviews made with several collectors and middlemen in the area, it was established that the daily income of one collector is about P60 a day or P1500 per month based on 25 diving days a month. A middleman makes an income of P3200-8000 per month.

Pagbilao, Quezon produces a maximum of 725 *bayongs* per month, three, times more than the production of Bolinao. Earnings of collectors and middlemen are almost the same as their Bolinao counterparts.

Lapu-Lapu City, Cebu, produces a maximum of 506 *bayongs* per month, which is a little less than the production of Pagbilao. The difference could be attributed to selective collection of species ordered by middlemen or exporters. Income of collectors and middlemen is about the same as those in other areas.

Existing technology

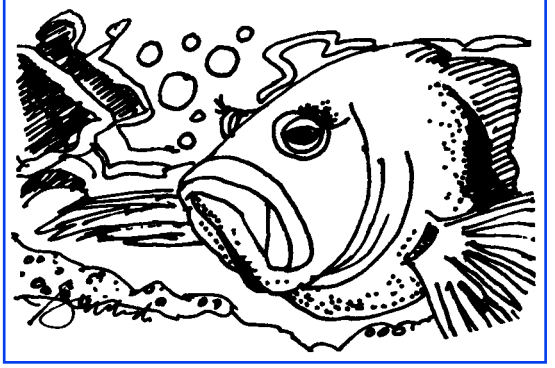
Gears. There are only a few gears used in collecting marine aquarium fishes in the Philippines, namely:

1. ***Hookah* or *kapandra***
2. **Gill nets**
3. **Scoop nets**
4. **Spear needle gun**
5. **Goggles**
6. **Squirt bottle**

Methods. Most collectors in the country still resort to the free dive method. This is very common in shallow reefs while collecting ordinary or less expensive fishes. However, in deep areas where most of the rare and expensive fishes are found they use *hookah* or *kapandra.*

As gathered from divers in different areas, less expensive fishes are caught with the use of gill nets. This gear is set around a stone coral where most of these fishes seek

Wanted exotic tropical fish ...Hmm... That's me! Tokyo, LA, NY here I come ... I can dream, can't I?



sanctuary. The divers will then stir the fish until they come out and swim directly to the waiting gill nets. From there on they collect the trapped fish by using scoop nets.

The same procedure is applied to a variety of some expensive fishes. However, these fishes like angel fish are difficult to catch with gill nets because of their habit of seeking refuge in the inner portion of the corals or stones. Hence, sodium cyanide in squirt bottles is used as anaesthetic. This method, however, is being discouraged because of its adverse effects on the natural habitat and on the fish itself.

Spear needle gun is a very specialized device used for collecting a certain species (Mandarin fish). This kind of fish, according to divers from Cebu, cannot be caught by any other method. The process is quite tedious but very effective.

Value

Export of marine aquarium fishes has increased twenty-fold in a span of 10 years. In 1970 the marine aquarium fishes exported made P1 000 263; in the early '80s, it increased to over 20 million. However, slight decrease in the mid-'80s was attributed to the bad publicity the country's marine aquarium fishes got in the buying countries, particularly the United States. Demand for Philippine

fishes declined because of mortality on account of the use of sodium cyanide. Aquarium enthusiasts and hobbyists are now opting for fishes certified hand-caught (net method) which attain a high degree of survival in the aquarium.

Recommendations

1. Attempts should be made at resource management to protect the industry's future.

2. Alternative catch methods which are not hazardous to fishes and not habitat-debilitating must be introduced. The net method (as against the use of sodium cyanide) should be encouraged.

3. Supply problem being felt during typhoon and cold months could be offset by tapping non-traditional or unexplored fishing grounds unaffected by natural elements. Areas like Mindanao, Sulu archipelago and northeastern Luzon.

4. A massive re-education program among the people involved in the industry with emphasis on the conservation of the coral reef ecosystem should be conducted.

5. The idea of a marine reserve should be looked into to ensure sufficient gene pool to serve as a recruitment source for population being actively collected in adjacent areas.

6. Depleted areas due to overfishing and areas where dead corals abound should be pinpointed for a massive planting of artificial fish habitat.

Source: Lolita Ty. 1987. *Tropical Fish Aquarium Industry in the Philippines.* In: **National Conference on Fisheries Policy and Planning**; 16-20 March 1987; Baguio City; UNDP-FAO-DA-BFAR.

7. (National authorities) should support the development of the industry by the provision of credit facilities and technical assistance, as well as by the promotion of joint ventures with dealers in importing countries. Owing to rising domestic breeding costs, many such dealers are interested in establishing breeding stations in tropical countries either in partnership with organizations in the private or public sectors or independently.

Training is another prerequisite for the development of the industry.

By the adoption of such measures, a developing country would be able to increase the supply and variety of species available for export, and at the same time reduce the risk of overexploitation of its natural resources and resultant damage to the environment.

Source: **International Trade Centre UNCTAD/GATT**. 1979. *International trade in tropical aquarium fish.* Geneva.

in the news

Aquarium fishermen go back to school

Aquarium fishermen from Palawan, Quezon and Zambales received a ₱3.25 million grant from the International Marine Life Alliance (IMA), Canada, and ₱1.7 million from World Wildlife Fund (WWF-US) to implement the *Netsman Training Project.*

The objective of the project is to train marine aquarium fish collectors to use small nets instead of cyanide in catching aquarium fishes. The long-term objective is to stop one Cause of coral destruction.

The grant was released through the Haribon Foundation, a non-profit organization concerned with environmental conservation. The Philippine Council for Aquatic and Marine Research and Development (PCAMRD) of the Department of Science and Technology (DOST) provided technical assistance.

The training, headed by Steve Robinson, an American tropical fish expert and IMA training coordinator, was conducted in different regions of the country. Initial sites identified were

(p. 9, box)