Market and industry demand issues in the live reef food fish trade

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Hong Kong is well known throughout the Indo-Pacific as the major source of demand for the trade in live reef food fish and shellfish. Markets in all products are constantly evolving and changing. This paper outlines some of the changes in the demand side of this trade and highlights some of the emerging issues and programs that are being put in place to improve the practices that are still being carried out in some parts of the region, and to move the trade towards greater transparency and more responsibility in the future.

The International Marinelife Alliance (IMA) continues to play a major role in the region, working to reform the trade in live reef fish to one that is non-destructive and sustainable. In Hong Kong, IMA has successfully forged close links and maintained a productive dialogue with the Hong Kong Chamber of Seafood Merchants (HKCSM) and the Agriculture, Fisheries and Conservation Department (AFCD) of the Hong Kong Special Administrative Region (SAR) government. This dialogue is fundamental in securing accurate data and facilitating the progress of the industry standards project (described further below).

Wholesale and retail monitoring

Monitoring the imports of live reef food fish into Hong Kong continues, as does the collection of wholesale and retail prices for the most popular species. This has now been expanded to include the pricing of live lobster. IMA is increasingly concerned about the trade in other reef species, not only live finfish.

The monitoring of landings from Hong Kong registered vessels is a grey area when it comes to data collection, since unlike other vessels, they are not required by Hong Kong law to declare their imports. This would be contrary to Hong Kong's status as a free port. Information was collected by AFCD from merchants, but it was not thought to be statistically accurate, and only "ballpark" import figures could be obtained. These data were also reported in a way that the country of origin could not be determined. After consultations with AFCD, HKCSM and the University of Hong Kong, the data collection form was modified to allow easier and more accurate information collation.

By improving the collection of data on the landings made by Hong Kong-registered vessels, an overall picture of the source, volumes and species composition of imports will be obtained. This information will be disseminated throughout the region to allow fisheries managers to better assess the production of live reef species from their particular countries.

Data collected from 700 seafood restaurants (about 140 restaurants are surveyed each month) show price trends from a retail perspective, as well as trends in consumption of particular species, as fish appear in tanks in greater or lesser numbers.

Photo: Thierry Chan

Figure 1. Fish held in Maxim's restaurant, Hong Kong.

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Table 1. Wholesale (W) and retail (R) prices (USD/kg) from Hong Kong and southern mainland China (December 2002 unless stated otherwise).

Species	Hong Kong SAR	Guangzhou, China	Shenzhen, China
Cromileptes altivelis	W = 60.2 R = 92.0	W = 84.7 (Nov. 02) R = not available	W = 73.3 R = 110.7
Epinephelus coioides/ *Epinephelus malabaricus*	W = 9.1 R = 20.8	W = 9.0 R = 18.8	W = 10.4 R = 24.8
Epinephelus fuscoguttatus	W = 23.7 R = 43.6	W = 15.0 R = 25.4	W = 16.9 R = 35.5
Epinephelus lanceolatus	W = 24.3 R = 46.9	W = 15.9 (Oct 02) R = 33.7	W = 16.4 (Nov. 02) R = 47.7
Epinephelus polyphekadion	W = 21.3 R = 37.5	W = 23.2 R = 35.5	W = 22.2 R = 37.5
Plectropomus areolatus	W = 24.1 R = 39.9	W = 19.5 (Nov. 02) R = 41.0 (Sep. 02)	W = 19.4 (Jun. 02) R = 41.0
Plectropomus leopardus	W = 35.1 R = 51.7	W = 44.1 R = 50.6	W = 33.6 R = 60.4
Cheilinus undulatus	W = 53.0 R = 87.0	W = 76.9 R = 70.3 *	W = 74.5 R = 105.0
Lutjanus argentimaculatus	W = 5.1 R = 15.2	W = not available R = not available	W = not available R = not available
Sample size for R	129	10	10

* Only large *Cheilinus undulatus* were found in retail outlets in December 2002. These sell at a lower price than the "plate size" fish that were found in the wholesale market.

Expansion of monitoring in southern China

Since January 2002, IMA has expanded its monitoring programme to include Shenzhen and Guangzhou in southern mainland China, including both the wholesale markets and the retail end of the trade. More than 50 per cent of the fish imported into Hong Kong are transshipped across the border (as opposed to direct importation) into mainland China, taking advantage of the lower taxation when fish are imported through Hong Kong. It is not clear how China's entry into the World Trade Organization (WTO) will affect this method of "indirect importation". By developing links with local governments and the merchants based in Guangzhou, IMA can build relations similar to those it has developed in Hong Kong. Some Hong Kong merchants already have facilities in southern mainland China and are assisting IMA in their China developments. Price data collected in Hong Kong and southern mainland China can be seen in Table 1.

It is reported that a great deal of fish from Vietnam are shipped into mainland China directly, but further information is very difficult to obtain due to the area in northern Vietnam being controlled by the military. It is hoped that by working with importers in mainland China, a more detailed picture can be determined regarding these shipments.

Market shifts

There appears to be a decline in the rate at which reef fish are being imported into Hong Kong. There is also a shift towards cultured fish, but it is not clear whether these are from full-cycle culture or cage grow-out of wild-caught juveniles (aquaculture developments are discussed later in this paper). A contributing factor in this shift may be the downturn in the economy (the Hang Seng Index, for example, fell 45 per cent between 1999 and 2002), with consumers now choosing lower priced (i.e. cultured) products. Cultured fish tend to fetch a lower price than those that are wild caught. As research in aquaculture results in an increase in the number of species of fish that can be successfully cultured full-cycle, we believe we will see a higher percentage of fish from this source in the market.

In the month immediately following the attacks on the World Trade Center and the Pentagon (11 September 2001), importers noticed a downturn in business of 45 per cent, as Hong Kong followed the global trend of rapid economic decline. Within the last 12 months, three chains of seafood restaurants have collapsed.

Hong Kong import figures for 2001 decreased by approximately 20 per cent from 2000, and 2002 figures seem likely to continue declining. However,

imports of coral trout (*Plectropomus leopardus*) from Australia have increased, totalling more than 1000 tonnes in 2001, and a greater volume will probably be imported in 2002. Australia now produces more than 50 per cent of the coral trout (the most favoured fish on the market) imported into Hong Kong, and about seven per cent of all of Hong Kong's fish imports. For many years, the total annual catch of coral trout from Australia's Great Barrier Reef remained fairly constant, with a shift from dead fish and fillets for the chilled market to live fish for export. Figures for 2001 show an increase of 400 tonnes over the 2000 catch of coral trout. Seventy-five per cent of this increase was for the live fish market.

Putting a value on the trade is difficult, but for 2001, we believe Hong Kong imported approximately 16,000 tonnes of live reef fish, with a declared import value in the region of USD 300 million.

There is an established grouper fishery in Baja California, Mexico, where fish are trapped for the local market. There are proposals to tap into this source of groupers to supply the increasing demand in major North American cities for live fish, particularly in areas with large Chinese populations, such as San Francisco and Vancouver. Hong Kong merchants are highly knowledgeable about the trade as a whole, not just about production in the Indo-Pacific and imports to and through Hong Kong.

Transportation

There has been a shift in the mode of transportation, with more than 50 per cent of fish now transported to Hong Kong by air. This is a significant shift from the past, when the preferred method was by live fish transport vessels (LFTVs). An improvement in communication links and the use of large enclosed air or oxygen bins (Fig. 2) — rather than oxygen-filled bags shipped in polystyrene boxes — has facilitated this change. The number of fish that can be transported in a one-cubic-metre transportation bin is much greater than the number that can be transported in a similar volume of polystyrene boxes (an approximate ratio of 6:1). This maximises return on investment, as according to traders, mortality during shipping is reported to be less than 1 percent, and the boxes can be returned to the source country and re-used. It is thought that the use of airfreight can have a positive effect on the management of the resource, as smaller volumes of fish are taken from the reef. This is not to say that all reefs can sustain even minimal fishing pressure, and a precautionary approach should be adopted before considering any live reef fishery. Using airfreight, live fish can be transported to the market in volumes as small as 300 kg. Using LFTVs, a cargo of 20 tonnes of fish would have to be shipped. This amount of fish is generally collected as rapidly as possible, placing immense stress on areas of reef that may not support that intensity of harvest. Mortality while fish are held prior to shipment is often high, resulting in the need to catch more fish to supply the required tonnage. The feasibility of air transportation is, of course, dependent on the proximity of the resource to a suitable airport.

Photo: F. McGilvray

Figure 2.
One-cubic-metre airfreight bin.

Aquaculture

Aquaculture is apparently viewed throughout the region as a practice that will reduce pressure on reefs. However, this can only be the case if the culture is full-cycle (egg to adult) and does not use wild-caught juveniles for cage grow-out. There are many research and production facilities focusing quite specifically on full-cycle culture and investing great amounts of money in the development of technology. Taiwan still appears to be the major area for the development of aquaculture in the region, although significant progress has been and is being made in Indonesia and Australia. More and more marketable species are successfully being cultured, but high-priced species, such as coral trout, *P. leopardus*, and humphead or Napoleon wrasse, *Cheilinus undulatus*, still cannot be cultured. The highfin or humpback grouper, *Cromileptes altivelis*, can be cultured successfully and is being done so in many areas of the region. However, due to the small market share held by this species (0.15%), the financial viability of producing highfin grouper solely for the food market is questionable. More than 90 per cent of giant grouper, *Epinephelus lanceolatus*, on the market in Hong Kong is now from full-cycle culture.

Regional and international collaboration

During the last several years, IMA has built up a working relationship with the Asia-Pacific Economic Cooperation (APEC), particularly the

Fisheries Working Group (FWG), raising the awareness of member economies to the issues facing the coral reefs of the region. The benefit of working with APEC is that it is a regional body, and although it cannot directly alter national governmental policy or legislation, it can pressure those governments to "go along" with other APEC economies. It has given IMA an audience that it would not normally have been able to reach, and also allowed IMA to put forward its case for reefs, reef species and reef fisheries. As perhaps the only organisation working across "the chain of custody" in the region, IMA is in the position to provide information on all aspects of the chain, as well as up-to-date information on APEC's main focus, trade. This can provide APEC a sound basis for making decisions in its various working groups, as well as at the ministerial level. In this regard, the APEC FWG is currently funding a two-year project to develop industry standards in the live reef fish trade. Of major concern to FWG is the issue of "certification", which is seen as a barrier to trade. The development of these standards is in no way a certification scheme, but rather a voluntary plan of best practices for adoption by all stakeholders.

Following on from plans developed during a multi-organisation strategy conference held in Honolulu in 2001, a meeting was held in January 2002 in Hong Kong to discuss the development of industry standards for the live reef food fish trade. These standards are being developed in collaboration with The Nature Conservancy, Marine Aquarium Council and HKCSM through a multi-stakeholder dialogue. They will cover areas such as capture, handling, transportation, aquaculture, stock assessment and food safety. Further details of this project are discussed elsewhere in this issue.

Continued efforts have been made by IMA to disseminate market information on the live reef food fish trade to stakeholders and fisheries managers throughout the region. All IMA regional offices and collaborative partners (e.g. the Secretariat of the Pacific Community and various government fisheries departments throughout the Indo-Pacific) receive a monthly update of import volumes and wholesale and retail prices. Should anyone wish to receive these market updates, or any other specifics on the market, they should contact the authors.

Pacific Regional Live Reef Fish Trade Management Workshop

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Background

During 2001 and 2002, the Secretariat of the Pacific Community (SPC) implemented a regional technical assistance project on the live reef fish trade (LRFT), in partnership with International Marinelife Alliance (IMA) and The Nature Conservancy (TNC), with financial support from the Asian Development Bank (ADB). Activities included biological and LRFT activity assessments in a number of Pacific Island countries, provision of policy and technical advice to government fisheries management agencies, and the development of a variety of public awareness materials.

As part of this project, a regional workshop was held at The University of the South Pacific to:

- provide fisheries policymakers and managers in the region with information on activities and outputs under the project;
- elicit the views of participants – especially Pacific Island representatives – in order to share and learn from each other's experience in developing and managing the trade; and
- identify priorities for action on the policy and technical levels.

Government representatives from all SPC member countries and territories that had LRFT operations (either for food or aquarium fish) were invited. Some countries, particularly Fiji Islands and Kiribati, also had representatives from the industry. Scientists and economists familiar with the LRFT from academic and research institutions and non-governmental organisations were also present. Mr Thomas Gloerfelt-Tarp was present to represent ADB, the sole funding source for the project. In total, there were 50 participants, half of which were from the Pacific region, representing 11 SPC member countries that had LRFT operations.

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