

## Fisheries boom

## Where the world is headed

### First impressions of the booming Chinese economy and its fisheries sector do not foretell happy days ahead

China is changing and it is happening now. The economy is booming, expanding at a rate of 15 to 20 per cent a year. Beijing is developing fast, with demolition and earthwork everywhere, great ring roads being built to ease the snarl of congested traffic.

It is estimated that in the past three years, the number of cars has increased fivefold, while the number of cycles has halved. About half the traffic I saw in Beijing seemed to be little yellow taxis—a wonderfully cheap and flexible supplement to the public transport system of buses and subways.

That there is demand for fish is all too evident. In Beijing, in the middle of winter, small quantities of fish were being sold everywhere, from the backs of tricycle carts and small stalls in the street markets. The importance of fish in supplying necessary protein to the seething population of Beijing was obvious.

With ruts of ice on the roads and frost still banked up in the shadows of high walls, refrigeration seemed not a problem. There were a number of fish species on each stall but perhaps only a few fish of each—Some were clearly cultured: smaller fish in plastic bags of water, larger ones (some carp, barely alive) in pools made from a tarpaulin draped over a frame welded from reinforcing rods and filled by a hose. On other stalls were marine species, some of average size, some very small, some still in blocks of ice, possibly from the freezers of distant-water trawlers.

In a crowded market in Shanghai, I saw a vast array of marine and freshwater species as well as captured and cultured ones. I recognized fish that in New

Zealand are discarded as unmarketable. But here they were highly valued, although their presentation and quality looked poor compared with the elegance I had seen in Japanese markets. There they were destined for luxury restaurants but in China they are food for the teeming masses of a rapidly urbanizing population.

With peasants moving in for their share of the good life, urbanization is taking over densely cultivated fields and rural villages. Beijing, a city smaller than Auckland, already has a population of 11 million, more than three times New Zealand's total. To cope with the population increase, hundreds of high-rise apartment blocks are being built.

China is very proud of its 7,000 years of fisheries management, especially its achievements since the formation of the Peoples' Republic and also its ranking as the world's largest fishery producer for the last three years. According to an official spokesman, the 15.58 million tonnes of fisheries output for 1992 is far more than that of other countries. Moreover, the average yearly increment of 8.6 per cent is over twice the world rate of 3.9 per cent increase in fisheries output for the same period.

#### Stages in development

The Chinese Bureau of Aquatic Products sees the recent stages of fisheries development as loosely corresponding to the last four decades. The fast development of the 1950s, during the recovery from the civil war, was followed, in the 1960s, by over exploitation and fluctuations. Then, in the 1970s, came serious overfishing and slower development. Though production still increased at four per cent each year, there were serious colt lapses of prime stocks

such as large and small yellow croaker. In response, during the 1980s, development was further quickened, but with a rapid reformation of fisheries management.

**T**he Chinese government encouraged the people to protect their fisheries, cautioning them that otherwise their grandchildren would not be able to eat fish caught in Chinese waters.

This new fishery policy took effect in 1985, following trends in domestication: first the Green Revolution in agriculture, then the White Revolution in animal husbandry and now, the Blue Revolution in aquatic ecosystems.

By developing aquaculture production in both fresh and salt water, marine fisheries was sought to be protected. There was also decentralization to the extent that 'each of the areas could follow its own geography and make its own policy on how to develop the fisheries'.

There was emphasis too on finding ways to keep fish fresh and to develop processing and production. As a result of the new policy, from the mid-1980s until 1990, China's marine fisheries grew.

A system of surveillance has been developed. Anecdotal evidence suggests that penalties are severe. It was alleged, for example, that a distant-water skipper

was executed. But whether this was for poaching or for the international embarrassment of being caught by the Russians and losing catch and gear to them, is not clear.

Although the annual per capita consumption of fish in China is still less than the world average of 11 kg, it has doubled over the past decade to 10.9 kg. Many urban areas, including Beijing and Shanghai, report higher annual levels of almost 20 kg.

Since 1979, China's fishing fleet has expanded six fold to 300,000 vessels. Distant-water operations began in 1985 with joint ventures in West Africa. By 1989, there were 16 enterprises employing 2000 people and operating more than 98 vessels in many parts of the globe. Since then, further expansions have taken place.

Fishery production had increased from 450,000 tonnes in 1949-50 to 17 million tonnes in 1993, a sixth of the total world production.

#### **Different shares**

Of this, 78 per cent came from salt water, capture fisheries provided 48 per cent or eight million tonnes of total production and aquaculture, 52 per cent or nine million 'tonnes.

Salt-water fish accounted for 60 per cent or nine million tonnes and freshwater, 443

per cent or seven million tonnes. The National Fishing Company catches 80 per cent, while private companies take in 19 per cent.

According to one estimate, the continental shelf adjacent to China provides 1,500,000 sq km of shallow fishing grounds up to 200 miles. Comprising nearly a fourth of the world's total offshore fishing grounds, they range from temperate to tropical zones, north to south, and are some of the most productive in the world.

**T**hey have, however, suffered from offshore overfishing and depletion of fishery resources, particularly stocks of yellow croakers and hairtails. Hence, they provided only about a tenth of the world's marine catch.

Reports on depletion and production are contradictory. One report, for example,

suggests a six-fold increase since 1950 for the fishing grounds of Zhoushan and further suggests that there are abundant potential resources and development prospects. For the same grounds, however, another report states that the potential has dwindled by half lately. The Shanghai Star reported that 'fisheries output increased 10 per cent last year, despite pollution and depletion of some stocks. But there was a sudden drop in the black scrapers catch to 8,000 tonnes, compared with the usual annual average of 100,000 tonnes.

At the Shanghai Marine Fisheries Development Company, the wharf, which comprised 30 berths in a stretch of 1.2 km, was crowded mainly with pair trawlers. But, unlike the markets, they were almost deserted of people. This company is vertically integrated and well-situated with ice plants, shipbuilding and repair works, gear and net-making facilities, cold

### How China structures fisheries administration...

China's existing system of administering fisheries and supervising ports was formed gradually since 1978. In 1982, the General Bureau of National Aquatic Products was brought under the purview of the Ministry of Fished Agriculture. Simultaneously, the Bureau of Fisheries Management and Fishing Port Superintendence (BFM) was established under the ministry.

BFM is the agency meant for enforcing fishery laws. It looks after matters relating to the reproduction and conservation of fisheries resources, protection of fishing waters and the environment, safety and quality of fishing vessels, and supervision and administration of fishing ports.

In 1984, the three regional fishery headquarters in the Yellow Sea, the Bohai Sea, the East China Sea and the South China Sea were grouped into the Regional Bureau of Fisheries Management. This came directly under the Ministry of Agriculture and was meant to manage the fisheries in the three marine regions.

At the same time, four frontier stations were set up in the provinces of Liaoning, Jilin and Heilongjiang. In 1987, to strengthen the management of the fisheries resources of inland waters, the Resource Management

Committee of the Middle and Lower Reaches of the Yangtze River was set up.

Since 1979, local agencies have been at the provincial, municipal or county level. These have departments dealing with different aspects of fisheries management. BFM is in overall charge of administration throughout the country in tune with fisheries laws and regulations. 'The regional bureaus are responsible for their respective regions, as are the local agencies.

The basic operating principle is that of unified leadership and decentralized administration. However, in practice, this is not working well. For instance, fishing for marine migratory species and stocks in large river sand takes should be controlled and co-ordinated by the central 'government. However, the authority of the department of fisheries administration under the State Council is not sufficient to implement its orders and regulations.

Also, the quality of the administrative staff is not good enough. There are long-standing problems of understaffing and shortage of modern equipment. Measures to overcome these problems include propaganda on resource conservation and steps to improve conservation and management schemes.

## ...and how China legislates fisheries

Chinese fisheries legislation comprises Laws, Ordinances and Rules and Regulations on fisheries. Fisheries Laws are promulgated by the Nations People's Congress or its Standing

Committee. For instance, the Fisheries Law of the People's Republic of China was adopted at the Fourteenth Meeting of the Standing Committee of the National People's Congress and promulgated by Order No. 34 of the President on 20 January 1988. This is the first and basic law of fisheries in China.

There are similar and related laws, such as the Wildlife Protection Law, Law on Marine Environment Protection and Law on Marine Traffic Safety.

Fisheries Ordinances are stipulated and promulgated by the State Council as, for instance, the Ordinance on Protection of Aquatic Resources. In addition to this, local ordinances are promulgated by the Provincial People's Congresses or their Standing Committees.

Fisheries Rules and Regulations are promulgated by the Department of Fishery Administration under the State Council. An example is the Regulation on Fishing Licence stipulated by the Ministry of Agriculture. Provincial regulations are usually made by the provincial governments.

The Fisheries Law accords top priority to aquaculture. In China, water surfaces and tidal flats are owned by the state but are used by individuals and units under collective ownership.

To overcome the problems of ownership and rights of users, the state has established rights overuse and contracts out such areas.

Although Water surfaces and tidal flats belong to the state, the Fisheries Law permits governments at or above the county level to assign such state-owned areas that have been designated for aquaculture to individual units. Such licences are issued only after examining the qualifications of these individual Units or collectives. This 'right of contracting' is a special right of use supported by contractual terms.

Units which have obtained the licences may not fail to carry out aquaculture or stock below per cent of the average stocking quantity for similar water areas. Such units which neglect state-owned water areas for 12 months at a stretch will be ordered to utilize and develop them. Failing this, their aquaculture licences may be revoked.

In the case of marine fisheries, emphasis is on developing offshore and distant-water fishing. Considering the high costs of investment in this sector, the Fisheries Law stipulates preferential treatment in the form of funds, materials technology as well as in taxes.

*—This and the previous box, is excerpted from papers by Cui Xiaodong and Liu Zheng, presented at a workshop on fisheries management sponsored by the Chinese and Norwegian governments.*

storages and fish markets. Yet, due to a lack of fish, the company is desperately seeking joint ventures overseas. It is also trying to diversify into marine transport. The company has borrowed heavily from the government to pay crew salaries. Perhaps up to a hundred vessels were rafted—two, three or occasionally four abreast.

Apart from a few small distant-water stem trawlers and a couple of crab potters, most were pair trawlers, as rusted and battered as the worst steel vessels I have seen still in service. A few years ago, there were 300 pairs operating in the Yellow and the East China Seas, but now six pairs are abroad and there are just 100 in these seas. Even

this number will be reduced to a mere 25 within the next few years.

While this company is struggling to find work for its vessels, elsewhere, China is rapidly modernizing its fleet. Neighbouring Fujian Province is using assistance from the European Union to improve the safety and equipment of vessels and for training crew to fish in deeper waters. With demersal and semi-pelagic resources depleted, hope now lies in smaller pelagics further offshore.

As far as aquaculture is concerned, China may well be showing where the world is headed. The policy changes of the mid-

1980s promoted the development of both freshwater and marine aquaculture. With some assistance from the World Bank, it led to an active policy to 'make China's fisheries industry get rid of the limitation of fishing from natural resources'.

As inland production increased, marine production decreased. Similarly, as aquaculture grew, marine capture fisheries declined. China has a coastline of over 32,000 km and 14 million hectares (ha) of shallow water within a 15 m isobath, as well as tidal wasteland good for aquaculture.

Already, about 20 to 25 per cent of the area has been developed. For instance, in the 100 km area of Rudong County in Jiangsu Province, 22,660 ha of the total 69,000 ha of shores and beaches are utilized to raise clams and other shellfish. In addition, a 1987 World Bank loan of US\$7.73 million and Y13 million in local funds (about US\$1.3 million) enabled an increase in *output*, by 1991, of 1,000 tonnes of cultivated prawns, 920 tonnes of eels and 200 million sheets of layer.

However, such production does have its problems. Aquaculture has seen badly hit by diseases. In Zhejiang Province, for instance, 97 per cent of the prawns produced are dying from diseases resulting from water pollution.

As it contemplates the 'Blue Revolution China may be leading the world in a transition from capture to culture fisheries, from self-sustaining wild biodiversity to artificially cultured systems requiring huge inputs of feedstock, energy and antibiotics.

As first impressions go, reports, however, are contradictory. This is not surprising, more so in the case of a fishery as vast and complex as China's.

#### **Serious depletion**

On the one hand, there are claims of huge increases in production. On the other, serious depletion of wild stocks or diseases in cultured species are reported.

The message I certainly got was that China is ardently seeking joint ventures to keep its fleets occupied and feed its people. 3

This article is written by fisheries environmentalist Leith Duncan of New Zealand, based on a first trip to China.