

How important is the fishery sector for the developing world?

«We feed the nation» was how Dr Sloans Chimatiro, Malawi's Director of Fisheries, once described the significance of the fishery sector. And he was not exaggerating: Fish is a far more important source of food in the developing world than in the industrialized countries. The trade in fishery products is continually expanding, with the developing countries now accounting for a US Dollar (USD) 17.4 billion share of the world's total trade figure (USD 56 billion) in this sector. More than 50 percent of the world's fish exports now come from the developing countries.

Dr. Uwe Scholz
Berthold Schirm
Deutsche Gesellschaft für Technische
Zusammenarbeit (GTZ) GmbH
Eschborn, Germany
Uwe.Scholz@gtz.de



Photo: gtz

Salt – we cannot imagine our lives without it. This «white gold» – which our ancestors even waged wars over – revolutionized the trade in fish and fishery products. Salt was not just a highly desirable means of payment; it could also be used by fishers to preserve their catch, which meant they could venture further and for much longer periods than their perishable product would otherwise allow. Salting also allowed the catch to be transported far longer distances overland.

The fish trade pattern has changed

By the end of the 15th century, the trade in fish had achieved its ultimate breakthrough: By now, fish preserved in salt would keep for weeks, making salt herring one of the most popular foods in Europe.

Alongside crude oil, fish is by far the most important export product for many developing countries.

Sodium chloride (NaCl) had thus been an impetus for the global trade in fishery products whose impact is still being felt today.

Nowadays, the fish and fisheries market is one of the world's fastest growing international commodity markets. Its total world trade value exceeds USD 56 billion – a figure more than twice that of tea, coffee and cocoa combined.

Currently, more than 200 countries supply the global market with more than 800 commercially relevant species of fish, crustacean, mollusk and squid. The product variety ranges from canned tuna to boneless salmon fillet, salted herring, dried cod, frozen fish fingers, smoked

mackerel and live lobsters, to oysters in sauce or sardines for processing into animal feed.

Guaranteeing an adequate supply to this international market requires hundreds of thousands of fishing vessels and fish farms, as well as tens of thousands of fish-processing workers, wholesalers and retailers in countries spread all over the world. The fishery sector thus generates employment and income for millions of people.

Source of protein and export revenue

While these figures on the world's fish and fisheries market may seem impressive, from the developing countries' perspective, the dimension becomes even more significant: According to the Food and Agriculture Organization of the United Nations (FAO), fish accounts for more than 40 percent of the protein in the diet of two-thirds of the global population, and in East and South Asia alone, more than a billion people – primarily the poorest population groups – rely on fish as their main source of protein.

But the fishery sector not only provides food for immediate consumption: Some 300 to 500 million people in developing countries rely directly or indirectly on fisheries for their economic survival.

The global trade value of fish and fisheries products has grown from USD 6 billion in 1980 to USD 56 billion in 2001, with the developing countries' share climbing from USD 3.4 billion to USD 17.4 billion over the same period. For developing countries, exports of fishery products thus generate more revenue than the combined earnings from other agricultural exports such as coffee, bananas, rice and tea. Alongside crude oil, fish is the most important export product for many developing countries. Further, according to the World-Fish center, fisheries products are meanwhile with an annual export value of USD 2.7 billion the leading export commodity in Africa.

No global exports without innovation

Exports of fishery products have taken on such significance worldwide, especially for the developing countries, thanks to the technical innovations achieved along the entire processing chain. Besides salt, it was primarily the invention of canning in the early 19th century which kick-started the globalization of the trade in fish and fishery products. For example, canning made worldwide sale of sardines in oil or

tinned tuna practically possible. Refrigeration has also played its part: Today, Nile perch (*Lates niloticus*) from Lake Victoria is cheaper to buy in Hamburg than Ocean perch or Cod from the nearby Atlantic, simply because of improved cooling and refrigeration technology. The use of ice machines and refrigerated containers ensures that the product can be air-freighted or even road-hauled along a supply chain stretching the length of the African continent right into Europe's fish shops – and the fish will still be in top condition when it arrives. Lake Victoria perch, as Nile perch is known in Europe, is a particularly rich source of omega-3 fatty acids, which is one reason why it has become important for the health conscious generations in Europe.

Steadily rising demand for fish

Based on technology and demand, there are today virtually no technical limitations to the global trade in fish and fishery products. However, there are maybe some particularly adverse effects on the nutrition and economy of developing countries. The prices of some high-value fish species have now climbed to such levels that poor fishers opt to sell their fish rather than eat it themselves. The emerging trend is for developing countries to export more high-value fish now and in future, which means they will have to import ever-increasing quantities of «lower-value» fish to meet their own demands.

In the early 1970s (1973), developing countries still exported 800 000 tonnes of fish. By the end of the 1990s (1997), they were reliant on 4 million tonnes of imports, which were often species that are considered as «low value» or «trash» fish in the developed world. Therefore, it is not uncommon in West and East Africa to find chilled or smoked horse mackerel species on the market – which have found their way to the consumer often in a more or less frozen state from the upwelling zones of Mauritania or Namibia.

At the same time, African countries are exporting their own «high-value» species, such as tuna, which achieve very high prices – in excess of USD 100 per kilo – on the European and Japanese markets. Only recently, the record sum of USD 300,000 was paid for a single bluefin tuna in a Japanese fish market. The scenario will become even more complex if the demand for fish increases in line with projected demographic growth. A study published by the International Food Policy Research Institute (IFPRI) and the World-Fish Center and entitled «Outlook for Fish

to 2020: Meeting Global Demand» predicts that in the most likely (baseline) scenario, global fish consumption from 1997 to 2020 will increase at an annual growth rate of 1.5 percent – and by 2 percent in the developing countries. The problem is that according to the FAO, some 75 percent of the world's marine resources are already being exploited to a maximum or even over-exploited and the net marine catch has stagnated for years at around 80 million tonnes. There is also a growing demand for «low-quality» fish for processing into animal feeds: Already, about one-third of the global catch is turned into animal feed.

Aquaculture – an effective response to rising demand?

With world fisheries coming under increasing pressure, natural aquatic resources alone are highly unlikely to be able to satisfy the growing demand for fish and fishery products. As a result, aquaculture is currently described by the FAO as the only fisheries sector which still offers a high growth potential. In the Asian countries in particular – with market leader China by far exceeding the other major producers India and Japan – there has been a real boom in aquaculture: In terms of total weight produced, Asia accounts for 87 percent of the world's fish farming output.

Aquaculture has developed many varieties, ranging from small-scale fish-farming in ponds to large-scale high-tech industrial shrimp and salmon farms, now found in many coastal regions. From 1985 to 1997, developing countries' production of fish from aquaculture grew at an annual rate of 13 percent, whereas production in industrialized countries grew at a rate of just 3 percent. Aquaculture now represents no less than 30 percent of the world's total fish production, compared with just 7 percent in the 1970s. The steady increase in global fish production over recent years is therefore largely related to aquaculture development. The yield of wild stocks, in contrast, has stagnated since the 1980s.

Although aquaculture can meet the increased demand for fishery products to some extent, over-expansion of large-scale farms can cause serious environmental problems like it is at present discussed in relation to the assumed spread of diseases and parasites in the vicinity of cage cultures. More serious environmental damage occurs from the worldwide clearing of mangrove areas for cultivation of shrimps and finfish. This loss of physical protection to coastal areas has suddenly gained importance in the aftermath of



the tragic Tsunami disaster in South East Asia. Further, pollution caused by unregulated use of chemicals like antibiotics in intensive culture has also had a negative effect and led to various recent bans on imports from the developing countries concerned.

Satisfying demand in an ecologically sustainable mode

The challenge for the global fishery sector is therefore to satisfy the growing demand for its products, but not to expand fishing effort on already over-exploited stocks and environmental damaging aquaculture production techniques, as this would ultimately have a devastating impact on biodiversity, sizes of stocks and finally the fishing sector as a whole, in particular in the developing countries, which now account for more than 70 percent of the world's total production of both wild fisheries and aquaculture production.

The development of an appropriate regulatory framework is helping the sector resolve this dilemma: At the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, the International Conference on the Sustainable Contribution of Fisheries to Food Security in Kyoto in 1995 and the World Summit on Sustainable Development in Johannesburg in 2002, the international community pledged to take active measures to protect aquatic resources in order to secure the world population's food needs. Furthermore, the International Code of Conduct for Responsible Fisheries (CCRF), agreed by the FAO member

nations in 1995, has established required mechanisms and methods for this purpose. The Code covers all the key aspects of sustainable resource management and biodiversity protection and calls on states to base conservation and fisheries management effort on a «precautionary» approach which includes a design of appropriate management plans, based on social, ecological and stock assessment studies, thus ensuring a sustainable utilization of the aquatic resources.

Focus on a fragile resource

The quality of development cooperation in the fishery sector today is the outcome of experience gained over several decades. In the 1970s and 1980s, development cooperation often focused primarily on technological aspects in order to increase production, which had a number of adverse effects. The introduction of a commercial trawl net fishing in the Gulf of Thailand in the late 1970s is just one example of how a non-sustainable fishing method was taken up by the fishing industry with little regard for the fragility of their tropical ecosystems. However, much has been learned from these experiences. Today, German Development Cooperation in particular follows the sector strategy on fisheries and aquaculture of the German Federal Ministry for Economic Cooperation and Development (BMZ), which promotes sustainable resource use in compliance with the Code of Conduct for Responsible Fisheries. The approach of BMZ further prioritizes the poverty impact of measures, underlines the importance of promoting sustainable aquaculture, and

Fish consumption in the developing countries is predicted to increase at an annual growth rate of two percent until 2020.

focuses on integrated approaches such as coastal zone management and participation by fishers in the drafting of relevant regulations.

Appropriate fisheries development to combat poverty and hunger

Key topics in international development cooperation currently include assisting partner countries in managing their 200-nautical-mile Exclusive Economic Zones – primarily through tools like regional monitoring, control and surveillance measures to prevent illegal and unregulated fishing or the establishment of Marine Protected Areas (MPA). Assistance with certification of capture fisheries and aquaculture products is also a key area of cooperation with partners in government or the private sector at present. The aim is to guarantee or improve product quality so that developing countries can continue to export to markets like the European Union. A further goal is to promote aquaculture production systems which reduce environmental damage and minimize the use of chemicals. A further challenge is the substitution of animal protein in fish feeds, as the latter is mainly based on the use of fish.

There are currently many examples of best practices in the field of sustainable utilization of aquatic resources such as the management of offshore and coastal fisheries in South Africa and Mauritania, the management of artisanal riverine and lake fisheries in Malawi. Or the management of protected areas and coral reefs in the Philippines. Often, these processes involve participation of local communities. This so called co-management approach is now being applied successfully in various fisheries worldwide.

Based on these best practices, Development Cooperation has therefore established a basis for a sustainable development of the fishery sector of developing countries. And thus deliver key contributions to meeting the international development goals – in particular reducing poverty and hunger worldwide.