Scientific Facts on

Fisheries

Latest data

Source document:
FAO (2009)

Summary & Details:
GreenFacts (2009)

Context - Fisheries and aquaculture are receiving increasing attention, not only because they represent an important source of livelihoods and food, but also because of our increasing understanding of aquatic ecosystems.

Many fish stocks are currently overexploited, and the international nature of the resources makes them difficult to manage. Is the current food supply in danger?

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This Digest is a faithful summary of the "World review of fisheries and aquaculture" section of the leading scientific consensus report
produced in 2009 by the Food & Agriculture Organization (FAO):
"The State of World Fisheries and Aquaculture 2008"

The full Digest is available at: http://www.greenfacts.org/en/fisheries/

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- Each question is answered in Level 1 with a short summary.
- These answers are developed in more detail in Level 2.
- Level 3 consists of the Source document, the internationally recognised scientific consensus report which is faithfully summarised in Level 2 and further in Level 1.

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1. What is the overall fisheries production?

In 2006 the global production from fishing and aquaculture combined reached approximately 144 million tonnes, of which 110 million were for human consumption. Capture fisheries have remained at the same level for the last few years, but aquaculture has been expanding.

Capture fisheries production
[see Annex 2, p. 6]

1.1 In 2006, 92 million tonnes of fishery products (which includes fish, crustaceans, and molluscs) were caught by fishers around the globe. China and Peru continue to lead the top ten of countries with the largest catches.

1.2 Oceans and seas provide close to 90% of the world's catches. These catches have remained relatively stable since the mid-nineties (between 80 and 86 million tonnes) and reached a relative low in 2006. The most caught species is the anchoveta in the Southeast Pacific.

1.3 The share of catches from the open ocean, the international waters outside of the fishing zones under the jurisdiction of coastal countries, has increased in recent decades and reached about 13% of all marine catches in 2006. Close to a third of these catches were deep-water species. More and more efforts are being made to know more about catches made in international waters and to better regulate them.

High sea oceanic catches
[see Annex 5, p. 8]

1.4 In 2006, catches from inland waters exceeded 10 million tonnes for the first time, which represented 7% of the total fishery production. Developing countries, particularly in Asia and Africa, accounted for most of the world's inland water fishing. Statistics of inland catches remain, however, unreliable and incomplete.

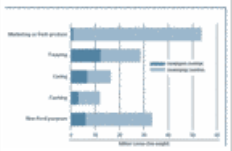
1.5 Aquaculture has grown tremendously over the last few decades. This sector alone now accounts for about a third of the world's supply of fish products (and about half of its food fish supply) compared to only 4% in 1970. China is by far the largest producer.

2. What is the situation of fishers, fish farmers and the fishing fleet?

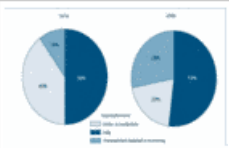
2.1 Fishery and aquaculture production provide direct employment and revenue to an estimated 43.5 million people; mainly fishers but also increasingly fish farmers. Detailed statistics are often not readily available, especially for small-scale fishing activities in developing countries. The general trend is that the number of jobs for fishers is stagnating especially in developed countries but opportunities in aquaculture have been increasing.

Purse seiner, France
Source: FAO

2.2 About 2 million motorised fishing boats are operating worldwide. Small boats less than 12 meter long dominate everywhere, particularly in Africa, Asia and the Near East. A very large share of the total fishing fleet is concentrated in Asia. Many countries have adopted policies to limit the growth of their fishing capacity in order to protect aquatic resources and make fishing economically viable. In recent years, a growing number of fishing vessels have signed out of international registries, and are listed as having an "unknown" flag. These include some of the older vessels which might not be in active use but also a number of ships that may be involved in illegal, unrecorded and unregulated fishing.


Fish utilization in developed and developing countries
[see Annex 1, p. 6]

3. What is the state of fishery resources?


Marine fish stocks
Source & ©: GreenFacts
[see Annex 4, p. 7]

3.1 A bit more than half of all monitored fish stocks are now fully exploited, producing catches close to their maximum sustainable limits with no room for further expansion. Over a quarter are overexploited, depleted, or slowly recovering. The remaining fish stocks are underexploited or moderately exploited.

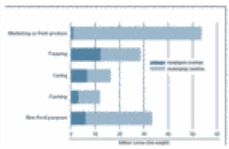
3.2 The large number of stocks that are either fully or over-exploited indicate that the maximum potential for the world's marine capture fisheries has been reached and that management measures are needed to reduce exploitation. In particular, more attention has to be given to highly migratory species, to stocks that are shared between two or more administrative regions, and to stocks in the open ocean.

3.3 Despite the social and economic importance of fisheries, attempts at sustainable management have been unsuccessful in many parts of the world and a global response is urgently needed. An ecosystem approach to fisheries is called for, protecting and conserving ecosystems while providing food, income, and livelihoods from fisheries in a sustainable manner. A combination of measures has been proposed within this framework, including banning some fishing practices, setting up marine protected areas, and constraining access rights.

3.4 The products of inland fisheries provide an essential part of the diet of many people around the globe, especially in developing countries yet they are difficult to assess consistently or comprehensively. Human impacts on ecosystems – in the form of invasive alien species, pollution, habitat fragmentation and changes in the flood cycle – reduce the ability of fish stocks to recover from fishing pressure. Fishery management should take these threats into account in order to safeguard and enhance existing inland fisheries that provide food security for millions of people.

4. How are fishery products used?

Source: FAO


Fish utilization in developed and developing countries
[see Annex 1, p. 6]

More than three-quarters of the world's fish production is consumed by humans. Most of the remaining portion is fed to animals, particularly in the form of fishmeal.

Almost half of the fish is consumed fresh by humans while the remainder undergoes some processing. When fish is processed, it is often frozen, but it can also be canned, cured, dried, salted, smoked, etc.

In developed countries, priority is given to convenience and variety, and most of the fish for human consumption is processed. In developing countries, fish is mostly consumed fresh and processing focuses on less sophisticated methods like salting or drying. However, fish processing is increasing in many developing countries to meet the demands of domestic markets or the requirements of exportations.

Fish also plays an important role in the production of animal feeds, and in the production of compounds for the pharmaceutical industry.

5. What is the amount of fishery products traded?

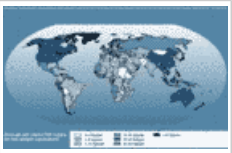
5.1 Fifty-four million tonnes of fish and other fishery products were traded on international markets in 2006 for US $85.9 billion. The value of traded goods continued to rise in 2007 along with the global increase in prices, but demand seems to have weakened in 2008 as the financial crisis was starting to take hold. Since 2002, China is the world's largest exporter of fish and fishery products, a position strengthened both by China's growing fishery production and expanding processing industry. The largest importers, by far, are Japan and the United States of America.

5.2 Developing countries play a major role in the fishery industry. They account for more than three quarters of the world's fishery production and for almost half of the world's exports. A large part of exports from developing countries is aimed at developed countries that have a growing demand but tend to have stagnant domestic fishery productions. Several developing countries import raw materials and re-export processed fish products.

5.3 Species and fishery products of high value on world markets include shrimp, salmon, tuna, groundfish, squid and octopus, as well as fishmeal and fish oil. However, relatively low-value species traded in large quantities, such as tilapia from aquaculture, have also gained increasing importance on world markets.

Because fish is highly perishable, more than 90% of internationally traded fish is in processed form. However, improvements in technology and logistics have allowed an increase in the trade of live fish.

6. How much fish is consumed worldwide?


Fish supply for food
[see Annex 3, p. 7]

Fish consumption has undergone major changes in the past four decades. Overall, consumption per person per year has been increasing steadily, from an average 9.9 kg in the 1960s to 16.4 kg in 2005. In the last years, China has accounted for most of the global growth in fish consumption, and the Chinese per capita fish supply was about 26.1 kg in 2005. Fish and seafood consumption varies greatly between different regions of the world, with local averages ranging from 1 kg to more than 100 kg per person per year.

The global increase in fish consumption reflects trends in food consumption in general, with per capita food consumption rising in the last few decades. Still, people in many countries continue to face food shortages and nutrient inadequacies, and major inequalities exist in access to food. Fish contributes to food security in many regions of the world, providing a valuable supplement for diversified and nutritious diets. Many populations depend on it as part of their daily diets.

Aquaculture production is playing an increasing role in meeting the demand for fish and other fishery products. In 2006, it supplied nearly half of all fishery products for human consumption. Further growth in the availability of fish for human consumption is expected to come mainly from aquaculture.

The current trends in fish consumption are expected to continue for the foreseeable future. In developing countries, a shift in diets towards more animal products will increase demand and, in industrialized countries, issues such as food safety and quality, environmental concerns, and animal welfare will probably be more important than price and income changes.

7. How are fisheries regulated?

Long-Term productivity of fisheries needs to be ensured
Source & ©: Jan Willem Geertsma

7.1 The world's oceans support economic activities on a vast scale, and their fishery resources need to be rehabilitated and protected to ensure their long-term productivity. Sound fishery governance and the capacity to implement management measures are necessary in both developing and developed countries.

7.2 Regional fisheries management organizations (RFMOs), are responsible for managing fish stocks on the high seas and fish stocks which migrate through the waters of more than just a single state in a given region. Their effectiveness is still impaired by an apparent inability or reluctance of Member States to take practical management decisions and implement them in a timely manner.

7.3 Combating illegal, unreported and unregulated fishing as well as related activities is a major global objective. It constitutes a threat to fish stocks and marine habitats, but also to food security and the economies of developing countries.

7.4 Other pressing policy issues currently being discussed internationally include the management of deep-sea fisheries in the high seas, highly migratory species and fish stocks distributed in waters of more than one State, as well as the problem of unwanted species accidentally caught or "bycatch".

7.5 Governments are increasingly playing a proactive role in aquaculture development. Many countries, both developed and developing, have enacted – or are in the process of drafting – national aquaculture regulations that govern the licensing, monitoring and control of aquaculture.

7.6 New rules governing the use of subsidies in the fishery sector are being negotiated in the World Trade Organization. A broad ban on subsidies that contribute to overfishing and an overcapacity of the fishing fleet has been proposed. A number of trade agreements entered into force over the last few years, but their full impact remains to be seen.

8. Conclusion

Source & ©: Biju Joshi

The State of World Fisheries and Aquaculture 2008 concludes that developments in world fisheries and aquaculture during recent years have continued to follow the trends that were already becoming apparent at the end of the 1990s: capture fisheries production is stagnating and aquaculture output is expanding faster than any other animal-based food sector.

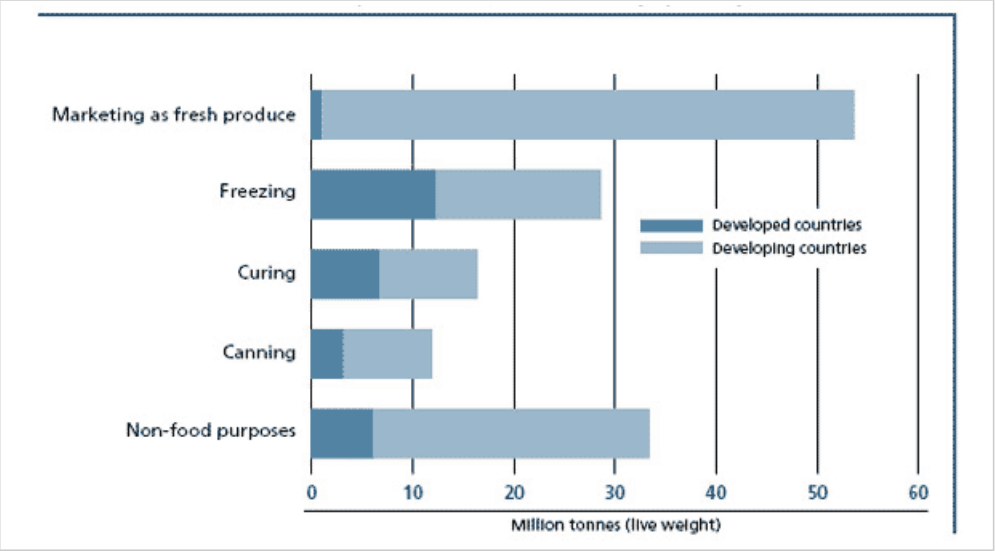
There are growing concerns with regard to safeguarding the livelihoods of fishers as well as the sustainability of both commercial catches and the aquatic ecosystem from which they are extracted.

About three quarters of monitored marine stocks are now fully exploited, overexploited, or even depleted. Therefore, there seems to be no further potential for increasing marine catches and the current state of fishery resources and their ecosystems allows little room for delay in actions for better management of fish stocks that should have been taken in the last three decades.

Annex

Annex 1:

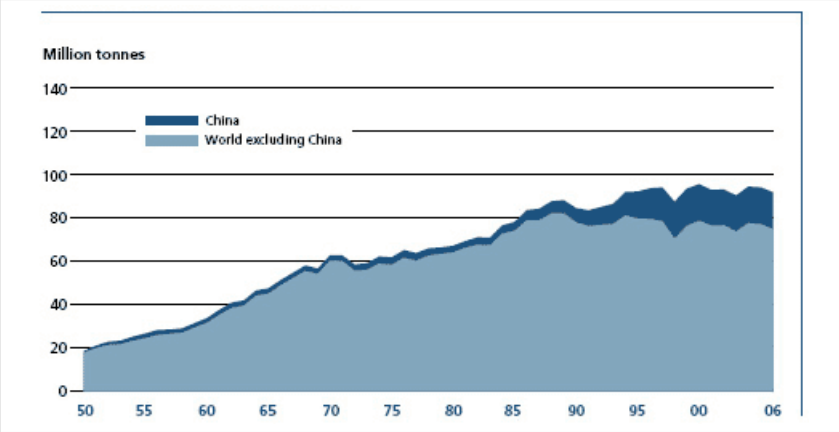
Figure 29: Utilization of world fisheries production (breakdown by quantity), 2006



Source: FAO Fisheries – The State of World Fisheries and Aquaculture, 2008
PART 1:World review of fisheries and aquaculture, p. 44

Annex 2:

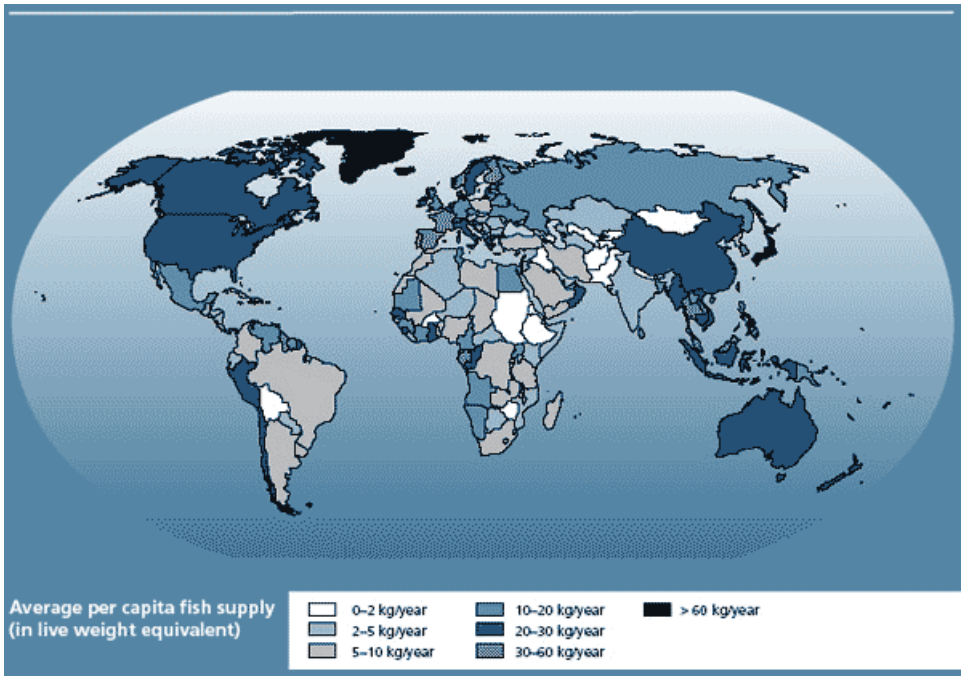
Figure 3: World capture fisheries production



Source: FAO Fisheries – The State of World Fisheries and Aquaculture, 2008
PART 1:World review of fisheries and aquaculture, p. 6

Annex 3:

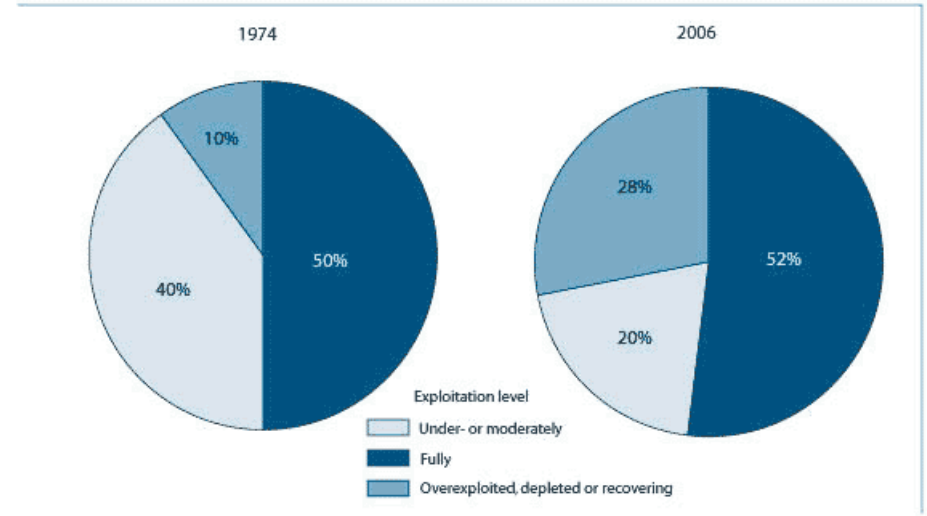
Figure 41: Fish as food: per capita supply (average 2003-2005)



Source: FAO Fisheries – The State of World Fisheries and Aquaculture, 2008
PART 1:World review of fisheries and aquaculture, p. 58

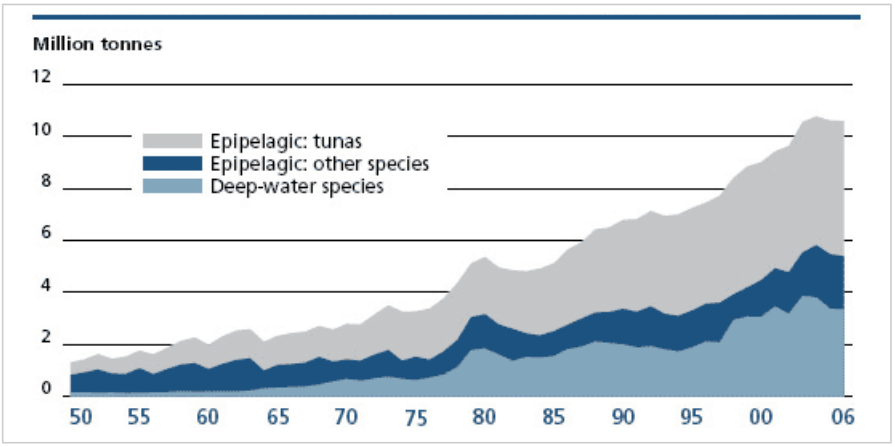
Annex 4:

State of the world marine fish stocks



Source: GreenFacts

Annex 5:
World catches of oceanic species occurring principally in high seas areas



Source: FAO Fisheries – The State of World Fisheries and Aquaculture, 2008
PART 1:World review of fisheries and aquaculture, p. 14

Partner for this publication

The Level 1 of this Digest is a summary of "State of Fisheries and Aquaculture 2008", a report published by the **Food and Agriculture Organization of the United Nations** (FAO).
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