Early Warning on Emerging Environmental Threats
“Ovefishing”

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Early Warning on Emerging Environmental Threats Briefs
This poster is an extract from the wider Early Warning on Emerging Environmental Threats briefs. In a deliberately journalistic style but based on cutting-edge scientific information, the briefs are aiming at explaining the causes and the consequences of a wide range of problems threatening global to local ecosystems and the human environment. The content of the publications will be based as much as possible on GRID-Geneva products (map, graphs, analyses), but also refer to competent institutions in the relevant domain.

1. General
In 2002, 72% of the world's marine fish stocks were being harvested faster than they could reproduce. Fishing activities have various negative impacts on marine ecosystems. The greatest concern is the rapid depletion of fish population due to extensive commercial fishing. A full one-fourth of the total catch (27 million tonnes in 2003) is not those targeted, and most often are lost.

2. Background
Overfishing occurs when fish are caught faster than they can reproduce, and for many scientists it has become one of the greatest impacts of human activity on oceans. Overfishing increases the vulnerability of ocean ecosystems and may contribute to the decline of other marine species including birds and mammals.

The deterioration of global fisheries is raising significant concern, mainly because an estimated one billion people, mostly in low-income countries, depend on fish as their primary source of food. On the average, fish supply 16% of animal protein consumed by humans. The fishing industry, ranging from subsistence fishermen to

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large-scale mechanised fishing vessels, directly or indirectly employs some 200 million people worldwide. The economic sector depending on fisheries is therefore a crucial element for the development of a large number of countries.

2.1 Causes of the decline

- Technology
  Today's fishing technology is highly elaborate. Fishing lines can reach as much as 120 km, furnished with thousands of hooks. Some trawlers reach 170 metres in length and can take on board the volume equivalent of 12 jumbo jets, and drift-nets can exceed 60 km in length. Fishing vessels cover large distances at high speed, from coastal zone to high seas. They fish at great depth, stay at sea for several months, while fish are often prepared for the markets on board.

- Open access and over-capacity
  Over-capacity is the presence of too many vessels in a growing number of fisheries. Fish stocks have generally been considered common property, open to exploitation by anyone with a boat and gear as long as they were used outside a country's 200 Mile Exclusive Economic Zone. If enough fish are caught to cover operating costs, there is little economic incentive to stop fishing once a vessel is built.

- Bycatch
  The word "bycatch" refers to the portion of marine life caught that was not targeted. It may include low-value species but also vast tonnage of young or undersized fish of valuable commercial species. Almost 25% of all the fish pulled from the sea never make it to the market. An average of 27 million tonnes of unwanted fish are thrown back each year, and a large portion does not survive.

Examples

- Subsidies and jobs
  Large economic losses have plagued the global fisheries sector for more than a decade. However, national governments have traditionally heavily subsidised the fishing industry, since it is an important source of employment, food and export earnings.

- Aquaculture
  The decline in marine fish catch has been largely offset by increased aquaculture production, which grew from 2 million tonnes in 1980 to nearly 16 million tonnes in 2002. In view of its evident success and declining wild stocks, policymakers and fisheries managers often see it as an alternative to marine fishing, as
it has the potential to take pressure off wild stocks and also provide economic development opportunities.

- **Destructive fishing**
  Cyanide fishing is a popular method to capture live reef fish for the seafood and aquarium markets. It is widely practiced in South-eastern Asia and the South Pacific and is now spreading to other parts of the world. Fishing with explosives, also known as "blast fishing", has probably been in existence for centuries and is apparently spreading. Explosions can produce fairly large craters, devastating 10 to 20 m² of sea-bottom.

### 2.3 Actions / Solutions

Although a growing number of countries have adopted fleet reduction programmes, over-capacity has been recognised as a serious problem by most fishing nations. Around 120 countries have discussed issues such as overfishing of the world's major marine fishery resources, destructive and wasteful fishing practices and excess capacity, and adopted an "International Plan of Action for the Management of Fishing Capacity".

The best way to reduce bycatch would be to lower the total fishing effort as much as possible, and develop selective technologies, better regulations and stronger enforcement.