

Market and Government Failure: The Cutting Edge

Jonathan Mace and Kay Moxon

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Kay Moxon

Economics Department, Tonbridge School

Jonathan Mace

Economics Department, Malvern College

The tragedy of the fishers



“Forget diamonds, forget gold: in terms of importance and worth to over a billion people worldwide, fish are infinitely more valuable.”

WWF website

Fishing is central to the livelihood and food security of 200 million people, especially in the developing world, and one in five people on the planet depends on fish as the primary source of protein. However, arguably even more is at stake than a primary food source and the economic security of millions: entire ecosystems are at risk on a scale that could spell global tragedy. Over 70% of the globe is covered by water and 97% of all water on earth is oceans.

“How inappropriate to call this planet Earth, when clearly it is Ocean.”

Arthur C. Clarke, The Ghost from The Grand Banks, (1990)

The ocean is a necessity to life as we know it, providing things such as:

- Most of the oxygen we need to breath
- A reservoir for soaking up almost half of the globe’s gaseous carbon pollutants
- A food source that is vital to a large section of the global population
- The ingredients for many of today’s and tomorrow’s medicines
- Weather patterns
- An essential part of the global economy.

Thus, whilst here we will concentrate on the immediate consequence of declining fish stocks, we must bear in mind that the long term consequences of upsetting the delicate ecosystems of the oceans might be much more serious!

The Problem: Overfishing

Fish are a **renewable resource** (a resource that is replenished through natural processes). However fish become a non-renewable resource if *over-exploited* (used at a greater rate than nature’s capacity to replenish them). And all of the evidence suggests that fish have been overexploited globally at a rate that is now unsustainable.

Overfishing occurs when fishing activities reduce fish stocks below an acceptable level. What this ‘acceptable level’ constitutes is often interpreted differently by biologists and by economists:

- **Biological overfishing** occurs when fish are been taken out of the water so quickly that the replenishment of stock by breeding slows down. If the replenishment continues to slow down for long enough, replenishment will go into reverse and the population will decrease.

- **Economic overfishing** occurs when fish are being taken out of the water so quickly that the growth in the profitability of fishing slows down. If this continues then profitability will eventually decrease.

The two definitions are clearly linked, and overfishing is undoubtedly occurring on a global scale whichever measure is used. We will be concentrating here mainly on biological overfishing.

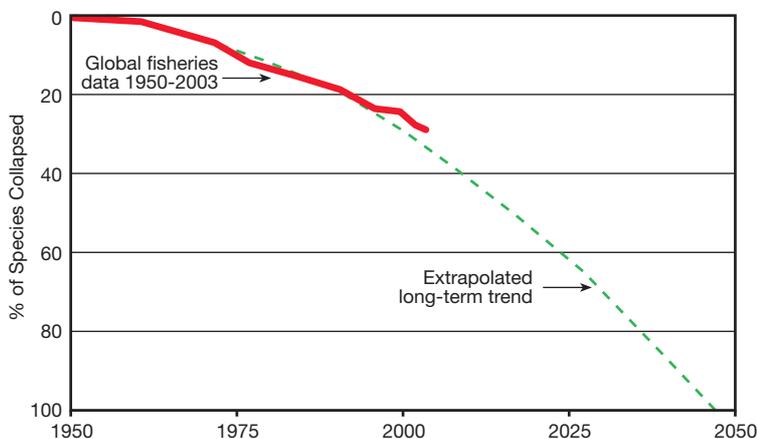
The Scale of the Problem

Scientists at the UN Food and Agriculture Organisation (FAO) publish a two-yearly report called SOFIA (The State of World Fisheries and Aquaculture) on the state of the world's fisheries and aquaculture (fish farming). The 2006 report revealed the following grim statistics:

- 52% of fish stocks are fully exploited, i.e. on the point of 'collapse': where species can no longer automatically replenish.
- 20% are moderately exploited.
- 17% are over exploited. That is the population is falling since fish stocks have 'collapsed'.
- 7% are depleted, i.e. sufficient reduction in fish stocks to put survival of the species at risk.
- 1% is recovering from depletion.

Thus a total of almost 80% of the world's fisheries are either in, or verging on, a state of collapse. Worldwide about 90% of the stocks of large predatory fish are already gone and, as Figure 1 demonstrates, the FAO predicts that current trends suggest that by about 2048, all species currently fished for food will have collapsed. In fact, in spite of national and international efforts to tackle the scale of overfishing, oceans are now being cleared at twice the rate of forests.

Figure 1: Global loss of seafood species



Source: Science/FAO

In the UK, we are perhaps most familiar with the problem of overfishing with respect to North Sea cod. Scientists from Ices (The International Council for the Exploration of the Sea) reported in 2005 that North Sea stocks had shrunk to about one tenth of 1970 levels and advised a complete halt to fishing there. This advice was not acted upon, and if British consumers – who eat more than 80% of all North Sea cod, mostly battered with chips – want to understand the potential consequences of continued cod fishing, they have a prime example in Newfoundland, Canada. In 1992, the once-thriving cod fishing industry of the Grand Banks off the coast of Canada came to a sudden full stop when at the start of the fishing season no cod appeared. The Canadian government imposed an indefinite moratorium on fishing in the