Something fishy about the figures

Dr William Reville

When we think of world food supply we tend to think primarily of grains and animals for meat. The harvest of the sea doesn't spring to mind as quickly, but worldwide, fish accounts for about 20 per cent of animal protein in the human diet. About one billion people rely on fish as their primary protein source and the production of fish products is far greater than global production of poultry, beef or pork.

Despite growing pressure on fishing grounds, official UN figures for annual global catch have been showing a gradual increase. However, according to a study by Reg Watson and Daniel Pauly, published in Nature on November 29th, 2001, the official growth figures are explained by a misrepresentation of annual fish catch by a number of countries, principally China. When corrections are applied to the statistics, annual global fish catch is seen to be in decline since 1988.

The UN Food and Agriculture Organisation (FAO) is the only body maintaining global fisheries statistics. FAO is unable to verify the figures reported by the member countries, even when they are suspected of being wrong.

The past 30 years have seen great increases in the exploitation of world fisheries, with new fishing areas opening up and more fish species being marketed. This pressure is devouring fish stocks. Scientists predicted the global catch would plateau at about 80 million tonnes, but catches reported by FAO generally increased during the 1990s, largely driven by catch reports from China.

These figures puzzled Watson and Pauly, two researchers from the University of British Columbia in Vancouver. They took the FAO's fish catch statistics since 1950 and built a model relating fish catch and oceanographic and environmental factors such as ocean depth, latitude, ice-cover, surface temperature and distance from shore.

After showing their model could predict the highest catch regions, they drew a global map showing the differences between modelled catches and reported catches. This revealed one glaring discrepancy. The model predicted a catch of 5.5 million tonnes for China in 1999, but the reported catch was 10.1 million tonnes.

MANY countries over- or under-represented their fish catches, but none had as big an impact as China. Although Chinese waters account for only 1 per cent of the global water surface, Chinese returns account for 40 per cent of the deviation between reported annual global and corrected catch.

When Watson and Pauly replaced the official statistics with the model estimates, the global catch showed a downward trend, shrinking annually by 350,000 tonnes since 1988. When they removed the catch of a single species, the Peruvian anchoveta, which fluctuates wildly since that fishery collapsed in 1972, the data revealed a consistent downturn of 660,000 tonnes per year.

Why are the Chinese figures so unreliable? Watson and Pauly attribute this to China's socialist economy in which the state entities that monitor the economy are also given

the task of increasing output. Also, until recently, Chinese officials at all levels were promoted on the basis of production increases from their own areas.

It is clear global over-fishing is more serious than was believed. It is not just a Chinese problem and raises serious concerns about the supply of fish and world food supply, and its ability to keep up with a rising world population.

Some governments believe aquaculture is the solution, but Watson and Pauly don't agree. They point out aquaculture cannot replace wild seafood because so much farmed seafood relies on wild fish for fish meal. Currently, one third of all wild fish landed is converted into fish meal and oil and half of this is used for aquaculture.

This fraction is rising rapidly because fish meal is used to raise carnivorous fish, such as salmon. If aquaculture is going to help the situation you would have to raise vegetarian fish, such as carp.

Any shortfall in fish supplies will affect developing more than developed countries. As demand and fish prices rise, exports of fish products from developing nations will tend to rise as well, leaving fewer fish for local consumption and putting fish protein increasingly out of reach of low-income families.

Employment in the fisheries sector is also likely to change significantly, especially for small-scale operators who fish for the local market or for subsistence. These fishers number 10 million worldwide and have been losing ground to competition from commercial vessels.

The fishing industry has been using FAO figures for years to justify putting out more boats and building bigger trawlers. This will clearly have to stop. Over-fishing must be brought under control so that fish stocks can recover.

FAO estimates the global fish catch could rise by about nine million tonnes if fishing pressures were reduced. Substantial increases in catch can appear within two years in tropical waters as a result of better management. However, such quick improvements are unlikely in colder waters.

Unilever, a major fish processor and marketer in Europe and North America, has pledged to purchase fish only from sustainably managed fish stocks by 2005. Unilever has joined with the World Wide Fund for Nature to establish principles for sustainable fishing. Fish harvested according to these standards will be eligible for eco-labelling that will increase consumer appeal.

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