



## Overfishing and under-reporting of catches in region under scrutiny

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For hundreds of years, fishing and pearl diving were vital to the people who lived around the Arabian Gulf.

Along with trade, it was these two activities that allowed communities to flourish in the days before the discovery of oil.

While pearl diving is largely a thing of the past, fishing remains a major industry – perhaps too major.

Like many other seas, the Arabian Gulf is often considered to be over-fished, and stocks of some species are thought to be dwindling.

Among those who have brought this issue to light is Dr Dalal Al Abdulrazzak and her co-researchers at the University of British Columbia in Canada, including Professor Daniel Pauly, Dr Dirk Zeller, Dr Dyhia Belhabib and Dr Dawit Tesfamichael.

A study by these scientists indicated that, between 1950 and 2010, the amount of fish caught in the Gulf was about double the official figures reported by the United Nations' Food and Agriculture Organisation (FAO).

Official statistics are compiled from those submitted by individual countries and Dr Al Abdulrazzak says that "time and again" the researchers have shown that catches reported to the FAO are under-reported.

A key finding is that the impact of small-scale fishing for local markets is underestimated.

"There is an inaccurate perception that small-scale fishers do not have an impact on fisheries and therefore are insignificant and not worth monitoring closely," says Dr Al Abdulrazzak.

"But we have found is that collectively all these small-scale fisheries are significant, not just in terms of catches, but also because they employ many more people than industrial fishers and that the majority of these economic benefits are captured locally."

The overfishing picture in the Gulf is far from unique. The environmental organisation the World Wide Fund for Nature says that 85 per cent of the world's fisheries have been fished at or beyond sustainable levels.

There are cautionary tales that illustrate the consequences of pushing nature too far. Among the most notable was the collapse in 1992 of cod stocks in Newfoundland, Canada, in 1992, something blamed for the loss of 40,000 jobs.

The world's seas are still being put under severe pressure, with FAO figures indicating that 93.4 million tonnes of fish were caught in 2014.

Few understand the global impact on stocks better than Chris Costello, professor of environmental and resource economics at the University of California, Santa Barbara's Bren School of Environmental Science and Management.

Prof Costello was a co-author of a 2009 study that indicated that 63 per cent of the world's fish stocks worldwide required rebuilding. Restrictions on catches, modifications to fishing gear (such as so that immature fish can escape or that non-target species are not caught) and closed areas without fishing were among the key measures highlighted that could to prevent over-exploitation.

Locally, the Environment Agency Abu Dhabi has introduced, for example, "effort limitations", which are limits on the number of fishing vessels and equipment in certain areas.

"Effort limitations are the most important management measure to control the level of overfishing in the Arabian Gulf, given that fisheries are overcapitalised (too many boats for too few fish)," says Dr Shaikah Al Dhaheri, executive director of the Environment Agency Abu Dhabi's terrestrial and marine biodiversity sector.

Other important measures locally include modifying fishing gear, for example with minimum mesh size limits for nets and escape panels in traps for juvenile fish. Fishermen have opposed some measures.

In 2015, Prof Costello and a number of other scientists published a paper that updated the story globally and offered, for some locations, a more optimistic picture.

"In a nutshell, the story now is that there's been a divergence between countries that have ... monitoring systems [and] good fishery management institutions – North America, Europe, Australia, New Zealand — that have, by and large, got a pretty good handle on fishing management and their fish stocks are not collapsing," he says.

"[In] many parts of Africa, Asia and some parts of South America, the story is one of continued decline, especially for the small-scale fisheries, the ones that have thousands of men going out each day in small boats."

Although considerable efforts have been made by the UAE authorities to measure fish stocks – one such initiative is due to report later this year – and to control fishing and prevent over-exploitation, the Arabian Gulf remains an area where over-exploitation is acknowledged to be happening.

"Combined, unregulated fishing practices and population pressure suggest that 'Malthusian overfishing' occurs in the region, a situation where declining yield coupled with lack of alternative employment drive fishers to over-exploit and destroy their resources," says Dr Al Abdulrazzak and her co-authors in their paper looking at fishing rates from 1950 to 2010.

So what is the solution?

Globally, there is no "one-size-fits-all approach", according to Prof Costello. A large fishery in one area will probably require a different management strategy to a much smaller one in another area. But there is, he said, a broad approach that is widely applicable.

"The idea is that you give fishermen a stake in the fate of the resource," he says.

"It's great to have strong monitoring systems and good regulations, but if fishermen aren't part of the process, they're going to battle against the regulations; they're not going to undertake any of the self enforcement that you need to make it a viable business."

In practice, this means giving local communities rights to fish in the waters near where they live, while those from outside are kept out. The resource is then managed and regulated by the community itself.

With major fisheries, where the fish are highly mobile and travel between areas, this approach needs to be changed.

"In that case ... a group might get the right to catch five per cent and another group to catch five per cent. It's a range of different institutional approaches," says Prof Castello.

"The common feature is that they provide some incentive or stake in maintaining the health of the fishery for their own future livelihood."

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