How long can we carry on fishing?

Year in, year out, the press warns us about the dangers of overfishing. *The Washington Post* recently declared that the oceans will be fished to extinction in 2050. But the latest reports on herring and plaice stocks are positive. Six questions for fisheries experts inside and outside Wageningen UR.

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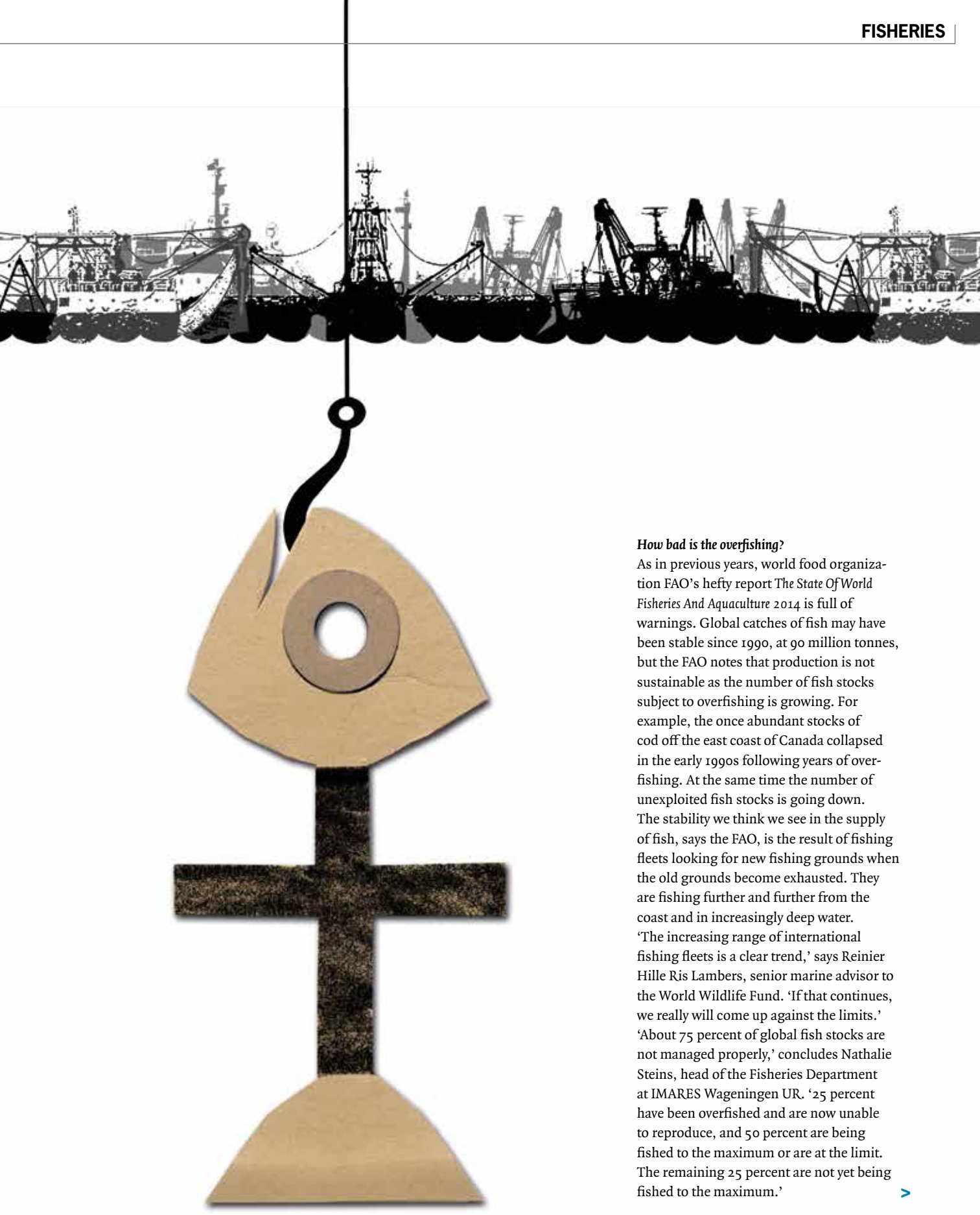
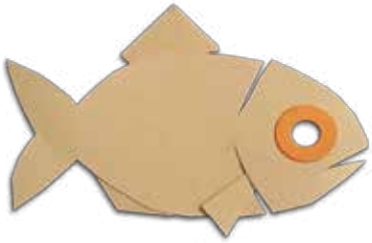


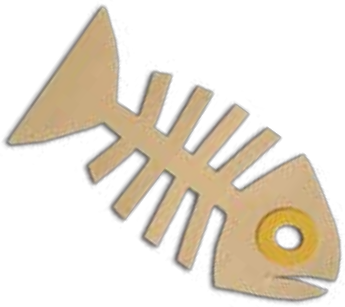
How bad is the overfishing?

As in previous years, world food organization FAO's hefty report *The State Of World Fisheries And Aquaculture 2014* is full of warnings. Global catches of fish may have been stable since 1990, at 90 million tonnes, but the FAO notes that production is not sustainable as the number of fish stocks subject to overfishing is growing. For example, the once abundant stocks of cod off the east coast of Canada collapsed in the early 1990s following years of overfishing. At the same time the number of unexploited fish stocks is going down. The stability we think we see in the supply of fish, says the FAO, is the result of fishing fleets looking for new fishing grounds when the old grounds become exhausted. They are fishing further and further from the coast and in increasingly deep water.

'The increasing range of international fishing fleets is a clear trend,' says Reinier Hille Ris Lambers, senior marine advisor to the World Wildlife Fund. 'If that continues, we really will come up against the limits.'

'About 75 percent of global fish stocks are not managed properly,' concludes Nathalie Steins, head of the Fisheries Department at IMARES Wageningen UR. '25 percent have been overfished and are now unable to reproduce, and 50 percent are being fished to the maximum or are at the limit. The remaining 25 percent are not yet being fished to the maximum.' >





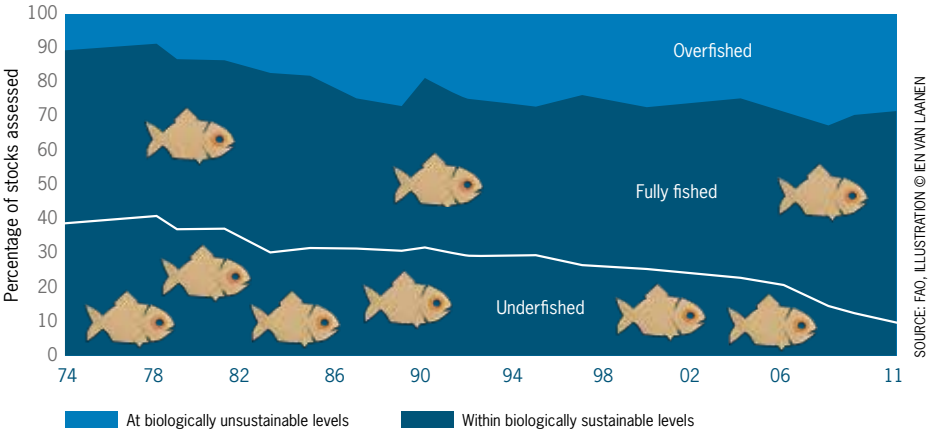
Is there only bad news to report?
It depends on what you look at and what you want to emphasize: general trends or positive exceptions. Researchers, fishers and nature organizations often have different opinions about this. In the Mediterranean for example, the outlook is bleak: 96 percent of the fish that live on the ocean floor, such as sole, are overfished, and 71 percent of the species that live in open waters, such as anchovies and sardines, are overfished. Elsewhere, the situation is more encouraging. Many fish stocks in the North Atlantic region – including the North Sea and the Baltic – are showing signs of recovery. In 2009, 30 of the 35 fish stocks investigated were overfished; that figure has fallen to 19. The herring, for instance, is doing fine. And the volume of plaice in the North Sea is estimated at more than 670,000 tonnes for 2014, the highest level since estimates were first made in 1957. A stock of even 230,000 tonnes is seen as a healthy level for plaice in the North Sea.
This positive development is partly due to the European fishing plans that have been drawn up since 2008. Fishers and nature organizations were also involved in this. Steins: 'These plans specify the permitted fishing pressure for the next few years; the aim is to keep the size of a given fish stock big enough to justify talking in terms of responsible fisheries. The plans also specify a maximum for the percentage year-on-year change in catch quotas. This approach has helped put an end to the annual wheeling and dealing by politicians about the fishing quotas for sole, plaice and herring, for example. That has made the situation a lot more stable.'

What makes fisheries sustainable?
Steins says fishing can be compared to banking. If you manage a large capital sum (a healthy fish stock), you will get more interest in the form of annual catches. If you start eating into the capital on top of the interest (by increasing the fishing pressure), you will increase yields in the short term. But if you do that year after year, you will eventually be bringing in less and less. In short, you can continue to fish sustainably by not fishing too much.
Yet this metaphor is not entirely appropriate. Proper stock management is only part of the solution, says Hille Ris Lambers. 'Fishing is not like arable farming, where you just harvest one species. You need to look after the entire sea. Nobody manages the tube worm, but that organism still affects the ecosystem.'
Christen Absil, fisheries programme manager at the North Sea Foundation, also warns against a too one-sided fixation on the commercially important species of fish. 'Sole and plaice are doing well at the moment but fishing for these species still leads to damage to the ocean floor and lots of bycatch, of dab for example. Sharks and rays also end up in the nets and we don't really know what effect that has. There is much less research on those fish species.'

Do labels offer a solution?
About seven percent of the fish sold worldwide has a label from the Marine Stewardship Council. These days, all Dutch supermarkets have several fish products on offer with a label of this kind. A fishery gets an MSC label if it manages the fish stock sustainably, limits the impact on the ecosystem and reduces catch volumes when necessary. The sale of certified fish has really taken off in recent years thanks to the book *De Goede Visgids* (The Good Fish Guide) and the VISwijzer website. They give information about the origin, fishing methods and sustainability of dozens of different species of fish.
According to Absil, the VISwijzer has made consumers aware of sustainability. Supermarkets have responded to this by purchasing more certified fish that had been caught sustainably. 'That then put pressure on food producers to process sustainable fish. This change among consumers and supermarkets was a sign to fishers that investing in certification would be worthwhile.' Even so, she does not think that fish guides and labels are a cure-all. They work well within Europe, but probably not elsewhere. Most fish on the European market comes from tropical and international waters where there is almost a complete lack of monitoring and checks.
Work has recently started on a fish guide for financial institutions. It will let banks assess the environmental impact of an investment in the fishery business. Low financial risk sometimes goes hand-in-hand with high ecological risk. Investing in 120-metre long freezer trawlers can give good yields as such ships run little commercial risk; they catch hundreds of tonnes of fish and are large enough to sail to the other side of the world

Most fish in Europe comes from seas that are hardly monitored at all

GLOBAL TRENDS IN THE STATE OF WORLD MARINE FISH STOCKS, 1974-2011



if a fishing ground becomes exhausted. That is one of the risk factors that the FAO warns about for overfishing.

Should fishers be fishing somewhere else?

Fishers prefer to catch their target species of fish, and in a size that will get them the best price back in port. Bycatches are a waste of time and fuel. Herring fishers in the North Sea are good at targeting their fishing because a school of herring is largely homogeneous, with very few other fish species in it. On the other hand, fishing for sole and plaice on the ocean floor with a small mesh catches many undersized fish, crabs and starfish. That could change with innovations in fishing equipment. Pulse fishing, in which fish are startled by an electric pulse into leaving the ocean floor, results in less bycatch and requires less fuel to trawl the nets.

'That is good,' says Mike Turenhout, a fishery researcher at LEI Wageningen UR. 'The Dutch fishers are having a hard time economically. Fishing costs are constantly increasing because of rising fuel prices. In 2003, one litre of diesel oil cost 20 cents; now prices have topped 60 cents. At the same time, average fish auction prices are low, especially for plaice. Fishers are suffering from competition from other, farmed species such as salmon and pangasius.

They will have to cope with another problem soon, too. Between 2015 and 2019, the EU will be introducing a new 'landing obligation'. Throwing overboard unwanted bycatches of undersized or commercially uninteresting fish – known as discards – will no longer be allowed; they will have to be brought into port. This rule was introduced to combat waste and encourage fishers to use fishing methods that result in less bycatch. Because the discards can only be used to produce animal feed, fishers receive a mere 15 to 30 cents per kilo, less than the landing costs. The LEI has calculated that this would mean an extra expense for Dutch fisheries of between 6 and 28 million euros. The new measure has sparked off a debate, including among fishery researchers. They feel the ecological impact of the landing obligation has not been properly investigated. Steins: 'They demand an environmental impact assessment for all kinds of ventures at sea, such as wind turbines and oil drilling, but this they just go ahead and implement. Let's say 30 percent of the discards that are landed could have survived in the ocean. What does that mean for the ecosystem? We know for example that certain seabird populations will decrease if no more fish is being thrown overboard but what about other species, and what about the long-term effects?'

Can sea reserves help both nature and fisheries?

Keeping fisheries separate from nature by designating certain areas closed to fishing has been a contentious issue for years. Important fishing grounds often overlap with parts of the North Sea that are of interest for their ecological values. 'If plaice is so easy to catch now, why should plaice fishers still be allowed to fish anywhere they like, including those few spots where some rare sea anemone can be found?' asks Absil. 'The discussions concerning closing off certain areas do not go smoothly. Fishers don't like giving up their freedom; closing off even a small percentage is a bridge too far.' According to Hille Ris Lambers of the World Wildlife Fund, closed areas help fish stocks recover *and* protect biodiversity. Fish grow and reproduce unimpeded in these nature reserves, resulting in more fish in the surrounding waters as well.

However, Steins at IMARES doubts whether closing off areas of the North Sea would lead to more fish. Research shows that many North Sea species do not stay in one area. 'What we do know works in the North Sea is to reduce the fishing pressure and *keep* it lower. The big challenge is how to manage the seas in a way that benefits both nature and the fisheries.' ■

www.wageningenur.nl/sustainablefishing