Banking on Cod

Exploring economic incentives for recovering Grand Banks and North Sea cod fisheries

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Atlantic cod, Bergen, Norway. © Rudolf Svenson / WWF-Canon

Introduction

In the aftermath of the global financial crises, we're now suffering the consequences because simply put, we borrowed more than we can repay. Nature is no different. Demand for fish is increasing at the same time as stocks are decreasing. Extract and exploit too much, over-extend into debt and the system collapses. It's clear that just as we need a massive overhaul of global financial and regulatory markets, we also need radical improvements in fisheries management to create healthy fish populations and secure long term profits.

North Atlantic cod is an iconic fish made famous by its once prolific stocks but now infamous for its depletion. Following closure of much of Atlantic Canada's cod fishery in the 1990s, local fishing communities, especially those in Newfoundland and Labrador suffered greatly and the financial cost to the Canadian tax payers was approximately CAD$3.9 billion. In the North Sea, cod landings have dropped from 60,965 tonnes in 1963, to 12,541 tonnes in 2007. Now, continued European demand has to be largely satisfied by importing cod caught from non-European Union waters, such as Russia, Norway, and Iceland.

Cod is Cash

Despite current losses, projections indicate that future recovered cod fisheries could have great value:

Region	Potential Monetary Value
Atlantic Canada	Estimated to be losing an estimated CAD$820 million a year of potential earnings that would accrue from a sustainable fishery[1], of which cod would be an important contributor.
Atlantic U.S.	In 2000, the total value of the north-east groundfish fishery landings amounted to USD$105 million. Yet if the fishery was completely rebuilt, this value could quadruple to around USD$425 million[2] with cod, again, playing an important role.
North Sea	For North Sea cod, the net benefit of a comprehensive new control regime over the period 2010-2019 would be more than €2.8 billion[3].

But cod have another less obvious value in terms of the role they play in healthy marine ecosystems. Consequently, over time it is likely that cod depletion will continue to erode ecosystem diversity and, by extension, the long-term profitability of all related fisheries.

But can cod recover?

Yes – but only if fishing practices are reformed. Cod are often caught before they reach full maturity. This creates problems for the health of the stock as we lose the old cod which are more fecund, producing greater numbers of fish that are healthier and stronger than those produced by their younger counterparts. Yet if we allow cod to grow large, projections indicate the same catch tonnage can be achieved by catching less fish, whilst simultaneously doubling the amount of spawning cod[4].

With fewer cod, crustaceans, released from cod predation, have proliferated and expanded their range - creating valuable new fisheries characterised in Newfoundland and Labrador by northern shrimp and snow crab and in the North Sea by Nephrops (commonly referred to as scampi). With crustaceans now a dominant presence in these ecosystems, their occupation of cod's former ecological 'niche' may contribute to preventing cod recovery. However, there is no unequivocal evidence to suggest crustaceans are impeding cod recovery and the failure of cod to recover has more to do with fishing practices causing high cod mortality. Moreover, these prolific crustacean fisheries unfortunately indicate an ecosystem that is out of kilter. Consequently, the current business model relies on the services of ecosystems that are severely perturbed, with only a limited suite of commercial species that are themselves vulnerable to over fishing. A crustacean collapse could thus cause an economic crisis that rivals or even exceeds that associated with the cod collapse some 15 years ago.

Examples of success

With foresight and political backing, Norway and Iceland have, historically, instigated effective and necessary fisheries management measures that effected healthy cod stocks, some of which are MSC (Marine Stewardship Council) certified. These included protecting young and immature fish; closing spawning areas to fishing; enacting quick remedial measures if catches are too high; enforcing effective control; limiting bycatch and discarding; and introducing the responsible allocation of fishing rights. One of the most encouraging lessons to take from these good examples is they managed to do this without incurring excessive costs.

Financing the transition

Assuming, then, that cod can recover, there remains a major hurdle: who will pay for the management costs incurred during the difficult transition period between depleted and recovered fisheries? There is great scepticism that this period cannot be bridged without incurring social and economic hardships that are politically and socially unacceptable. However, success is clearly possible and, while the means of achieving it may differ by region, the potential results, both economic and environmental, are difficult to refute.

There are estimates that some fishers in the North Sea (for example) will experience a loss of earnings of between 10 to 21 percent as a result of recovery measures[5]. Such costs do pose a challenge and highlight the need to think creatively about financing mechanisms. One potential way is to enable fishers, with political support, to take out loans secured against the projected value of future fish stocks in order to finance a transitional fund[6]. Additionally, the future price of virtually every commodity (e.g. grain, crops and oil) has long been the subject of contracts that guarantee future prices. With seafood, fishermen could sell forward contracts of a portion of their catch to investors. This scheme, developed by George Sugihara, reduces the risk to fishermen and promotes conservation by having prices set well in

Atlantic cod, Finnmark, Norway. © Erling Svensen / WWF-Canon

Atlantic cod, Bergen, Norway. © Rudolf Svenson / WWF-Canon

advance. If the stock declines, then the incentive to over-fish is reduced because the fisher is only obliged to sell a fraction of the quota. Value does not increase when fish are rare because the price is moderated in advance[7].

A further option is to move away from fishing to the maximum sustainable yield (MSY) to one focused on maximising the economic yield (MEY). Although MSY fishing results in bigger catches, profits are lower because the cost of harvesting becomes more expensive as fishers reach the limit of the allowable catch, making it increasingly costly to first find and then catch less fish. Profits in the MEY model, on the other hand, can actually be higher, despite lower catches, because the cost of fishing decreases as stock levels increase, thus creating a win-win situation for both fishers and fish[6].

There are a number of ways in which investments could further unleash the potential value of a future sustainable cod fishery. These include researching new selective gear technologies; engaging in stock assessments whilst collecting other oceanographic data that could also inform sustainable fisheries management; investigating ways to reduce carbon footprint, simultaneously reducing costs; investing in local rather than distant markets; improving fish quality; establishing marine protected areas (MPAs) with fishers involved in the management of the area; and investing and becoming custodians of alternative and sustainable ocean-based industries, such as offshore wind-energy with these areas potentially acting as MPAs by default due to necessary no-fishing zones.

Increased revenue may also come by way of securing sustainable seafood certification, such as that offered by the MSC. There are also possibilities for fisheries to command high prices by creating niche markets for cod caught by low impact fishing methods, such as traps, pots, or hook-and-line. This would require a concerted marketing effort, but other niche fisheries have demonstrated the potential profitability of such initiatives.

Fisher led reform

In recognising that curtailing fishing effort is central to industry opposition to change, awarding 'rights' in the fishery, to those who invest in recovery and responsibly steward the resource, can create a healthy fishery over time. The investment will be reflected in the higher value of the fishery for which they 'own' a share[8] while the shares themselves can increase in value as the fishery becomes better managed[9].

Rights-based management (RBM) approaches can lead to more robust fisheries since its basic principle discourages fishers to over-fish as doing so would devalue their share. Given there is now compelling evidence to support RBM approaches, consistent adoption of RBM must first address issues of unequal distribution of wealth and must ensure individual benefit from involvement in any conservation measures they play a role in.

Key Points

- **Cod can recover, but it is essential to temper harvesting at the first sign of recovery in favour of longer term targets. The transitional recovery period, in whatever form that takes, must also be adequately funded to run its full course so as to avoid pressures to reopen the fishery prematurely.**
- There are unrealized economic benefits that could accrue from healthy cod fisheries, combined with the associated advantages of reducing economic uncertainty.

Cods and haddocks, North Atlantic, © Mike R. Jackson / WWF-Canon

- Potential financial incentives could serve to focus business and political commitments towards the renewal of cod fisheries that will promote best practices for long-term sustainability.
- Other countries, such as Norway and Iceland, have proven that sustainable and profitable cod fisheries are possible.
- There will be important issues to address, especially who should bear the short-term economic costs and who will benefit from a stronger and more profitable seafood industry.
- A clear focus on investment models and a fair and equitable rights-based policy, when tailored to local situations, is a necessary next step towards cod recovery.

Conclusion

Ecological sustainability and effective ocean management need not be a utopian vision. While we may never be able to 'turn back the cod-clock' there are significant opportunities for the Grand Banks and North Sea cod stocks. Fortunately, both regions remain great engines of biological productivity. If the political will exists to recover cod, supported by industry uptake, larger stocks will yield profits in the future that could more than compensate for any immediate short term financial losses.

Failure to take the steps necessary for cod recovery now will prolong and exacerbate economic and social consequences in the future. As we undergo an overhaul of the global financial and regulatory markets, it's opportune to underpin this with changes in fisheries management to secure long term profits and healthy fish populations.

Restoring North Atlantic cod stocks would be an achievement of great global significance, showing that if it's possible here, it's possible for any fishery. The challenge is big, but so are the rewards. Rebuilt cod fisheries would restore a vital component of the ecosystem and, if accompanied by an effective and long-term fisheries management structure, would provide healthy, biologically diverse and resilient ecosystems, allowing us to once again – bank on cod.

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