Systems in action: Modelling a muddle
Part 5

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GINA LANDOR: The whole situation appears to be as understandable as the way the auction is conducted.

AUCTIONEER: Anybody with 88? 87. Number 78, foreman. Number 78, foreman.

GINA LANDOR: Efforts to create a sustainable fishing future have focused on the fish themselves. Is this a trap? Is there another way of looking at the problem?

JOHN CASEY: The approach that we're taking is to look at fisheries management in a completely different way. Traditionally, assessments are carried out from the standpoint of what is happening to the stocks. What we're trying to do is to look at the effects of various management scenarios on the landings of fish to the different fleets, which are participating in the fishery.

You can imagine a situation where you have an area of sea which is being exploited by a variety of fishing vessels, long lining vessels, or to trawlers. Now, each of these vessel groups will exert a different exploitation pattern. They will catch fish of different size, composition, of each of the species.

GINA LANDOR: Otter trawlers tow a bag like net. Assisted by sonar, which scans the sea, the bag can be positioned to catch the whole shoal of fish, which is a mixture of young and mature. Once netted, even the smaller fish are trapped.

Long line trawlers cast what can be described as enormous tennis nets, which simply hang still in the sea behind the boat. They tend to catch larger fish. So the size of each of these fleets will make a difference to the fishery.

JOHN CASEY: If for example, we simulate the transfer of fishing effort, in other words, we shift a number of vessels from the otter trawl fleet to the long line fleet. What we see is an immediate reduction in the landings to the otter trawl fleet and an immediate increase in the landings to the long line fleet because of the shift in fishing effort.

In the long term however, the effects of doing this effort transfer aren't immediately apparent. But what we do see is an increase in the long term landings to both fleets because otter trawl fleets tend to catch fish of a small size. The long liners catch fish of a large size. So by reducing the fishing mortality in the otter trawl fleet, we're allowing more young fish to grow to a larger size, which has benefits to both fleets.

GINA LANDOR: A different perspective and a different model providing different solutions to the same problem. So in 10 years' time, will fish be caught on a quota regime based on fishing gear rather than fish? Will there be any fish left to catch? Whatever the future, one thing is certain - some type of model will be used to help define the system and indicate when and how to intervene to best meet the participants various objectives.