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Fisheries Centre at the World Trade Organization

by *Ussif Rashid Sumaila*

Fisheries subsidies are one of the key issues being currently negotiated at the World Trade Organisation (WTO) in the Doha Trade Round of Negotiations. On May 24 and 25, 2007, I had the privilege of presenting recent work by myself and colleagues on the re-estimation of fisheries subsidies at the 151-strong member country global institution. The two days spent at the WTO were packed with: (i) a meeting with WTO Director General Pascal Lamy; (ii)



*Rashid Sumaila, WTO Director General Pascal Lamy and Oceana CEO Andrew Sharpless.
Photo by WTO*

Andrew Sharpless described the current state of the world's fisheries and I followed with an explanation of how subsidies that enhance fishing capacity (or 'bad' subsidies according to Khan *et al.* 2006) contribute to the widely-reported declines in global fisheries. I also seized the opportunity to present a copy of our recent Fisheries Centre Research Report on subsidies (Sumaila and Pauly 2006) and a letter to the

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separate meetings with WTO ambassadors/delegations from Australia, Canada, China, the European Union, Japan, New Zealand, Pakistan, Uruguay and the USA; and (iii) my seminar that was attended by at least 35 other country delegates.

At the meeting with Pascal Lamy, Oceana CEO

Director General signed by more than 125 scientists from all over the world. The letter called on Pascal Lamy to use his leadership to guide the WTO to meet the global challenge of disciplining 'bad' subsidies worldwide and thus help the world avoid a potential environmental disaster - the decline of global fisheries.

Pascal Lamy was visibly appreciative of our research effort, stating that the world needed all the research it could get on the issues currently being negotiated at the WTO. This is because the availability of scientific information is a necessary, if not sufficient, condition for reaching good decisions in the interest of the global community.

From the discussion and feedback I received from the three events of my visit, a number of opportunities and challenges to WTO delegates in their negotiations on fisheries subsidies were identified, discussed and reported in Sumaila *et al.* (in press). One key obstacle worth mentioning here is that WTO member countries tend to form coalitions such as those calling for 'bottom-up' and

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'top-down' approaches to disciplining subsidies, and those who describe themselves as 'Friends of Fish' and 'Friends of Fishers'. The EU, Japan, Korea and Taiwan advocate a 'bottom-up' approach that would ban only specific types of subsidies (e.g., payments in support of the acquisition, modification or construction of fishing vessels) leaving others un-banned (e.g., fishing access agreements and vessel buyback programs). Other countries, including the US and New Zealand, want to ban all subsidies, barring some negotiated exceptions, and are arguing that a comprehensive 'top-down' approach is necessary.

Given the current state of global fisheries, the world clearly cannot afford to get trapped in the semantics of 'top-down' versus 'bottom-up'. The key issue is to ban 'bad' subsidies, and this ought to be the focus of the

negotiations. Also, it seems to me that it will be difficult to be a friend of fishers without first being a friend of fish, unless one is thinking short term.

Both WTO delegates and Director General Pascal Lamy left me with the impression that they recognize the unique position that the WTO is in with regard to this matter. It is the only institution that can help solve the problem of bad subsidies because it is multilateral in its scope and has the mechanisms in place to enforce its agreements. Also, they seem to recognize that failing to use the leverage the institution has in this matter will be a missed opportunity with significant implications. Given these impressions, I am hopeful that the WTO will seize this golden opportunity to show the world that it can indeed work to reconcile global trade with the long term sustainability of the natural environment.

References

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FERU at FAME workshop, Denmark

by Ahmed Khan and Dale Marsden

Three members of the Fisheries Centre's Fisheries Economics Research Unit (FERU) had the opportunity to attend a workshop organized by the Centre for Fisheries and Aquaculture Management and Economics (FAME) and the Nordic Network in Resource and Fisheries Economics and Management (NorFame) in June, 2007. The workshop, held at the University of Southern Denmark in Esbjerg, had as a theme "Social and Natural Scientific Advice in Marine Renewable Resources: Closing the Gap between Politics and Theoretical Ideals in Fisheries Management".

Four presentations were made by members of FERU. Rashid Sumaila gave two keynote lectures, which addressed a wide range of issues, including "the intersection of natural and social sciences as a source of innovative ideas for policy", dealing with the global commons, intergenerational equity and discounting, and fisheries subsidy reforms. He also shared his experiences dealing with policy-relevant research in collaboration with NGOs, the fishing industry and governments.

Given their strong teaching mandate, the workshop organizers encouraged students to present their graduate work at the meeting. Dale Marsden, a PhD student with FERU, presented his work on the bioeconomics of the sockeye salmon fisheries in the Fraser River. He presented results on the economic consequences of past fisheries management. Ahmed Khan, a recent MSc graduate from FERU, presented his work on subsidies to global marine fisheries. In his presentation, he defined subsidies and provided a framework for identifying, categorizing and estimating subsidies worldwide.

Other keynote presenters and guest lecturers at the workshop included: Laurence D. Mee (Professor, University of Plymouth); Poul Degnbol (Scientific Adviser, European Commission) and Niels Vestergaard (Professor, University of Southern Denmark). Degnbol's talk was on policy making on the basis of knowledge; Mee discussed the important effect of European lifestyles on marine ecosystems; and Vestergaard examined what issues biologists and economists could better address together than separately. The workshop schedule provided ample opportunities for Q&A, networking, and the initiation of research collaboration.

Of course, no workshop is all work. The first evening featured a barbeque hosted by Niels Vestergaard, the highlight of which was a soccer match between two teams made up of workshop participants. The last day of the workshop allowed FERU members a quick trip to the island of Fanø, led by one of our Danish hosts, Lars Ravn-Jonsen, who treated us to dinner and a lively discussion that made Ahmed Khan recall Daniel Pauly's reference to *Babette's Feast* in a recent edition of the *Sea Around Us* project newsletter (Issue 38).

Do EwE agree?

2005 Cecil and Kathleen Morrow Scholarship

by Robyn Forrest and Tony Pitcher

When two very different models come to the same conclusion, you are a little bit more certain that they may both be right. At a July workshop held in Cronulla, New South Wales, Australia, attended by this article's authors, an encouraging comparison between two types of ecosystem simulation models emerged. *Atlantis* is a spatially-explicit model based on 3-D habitat polygons where ocean fluxes are driven by complex biogeochemical fluxes of nutrients and energy and fish take part in size-structured food web dynamics. Ecopath with Ecosim (EwE) is a simpler food web model based on mass-balance and predator-prey dynamics.

Atlantis was represented by its developer, Beth Fulton, from CSIRO, Hobart, while an EwE model of New South Wales had been constructed by Robyn Forrest and Tony Pitcher, from the FERR group in the Fisheries Centre. The two models shared a common structure of New South Wales offshore functional groups and fisheries to facilitate comparisons.

The comparison came about as a result of two memoranda of agreement between Australia's Commonwealth Scientific and Research Organisation (CSIRO) and the Fisheries Centre with the New South Wales Department of Primary Industries (NSW DPI), which aimed to develop and compare the results of two structurally different ecosystem models. The comparison was also aided by funds from the 2005 Cecil and Kathleen Morrow Scholarship (awarded to Robyn Forrest), which funded her travel to CSIRO's laboratories in Hobart, Australia, where she spent a month improving the EwE model.

The models made use of data collected in two sets of surveys, twenty years apart, of the upper continental slope of New South Wales.

The surveys showed large changes in species composition between 1976 (when fishing on the continental slope first began) and 1996. Notably many species of shark and ray have undergone dramatic declines, with catch rates of some deepwater dogsharks three orders of magnitude lower in 1996 than in 1976 (Graham *et al.* 2001). This is a typical problem for multispecies fisheries, i.e., non-selective harvesting of different species with differing productivity depletes less productive stocks (such as sharks) rapidly whilst stocks of more productive stocks may remain healthy, thus encouraging continued fishing effort. Demersal longline and trawl fisheries are particularly prone to this problem and a major challenge facing managers mandated to demonstrate ecosystem-based fisheries management is to find a balance between harvest of valuable commercial species and protection of incidentally-caught, low-productivity species (such as sharks and rays).

Emphasis was placed on simulating trade-offs that might have been associated with hypothetical fishing policies aimed at achieving different management goals, had there been an opportunity to set such goals during development of the fishery in the 1970s. For example, we used Ecosim's optimal policy search to find fishing rates that would maximise the long-term dollar value of the total catch or, alternatively, ensure that no species (particularly low-productivity dogsharks) was overfished. Trade-offs were measured in terms of number of overfished/extinct species and also in terms of lost income. Not surprisingly, fishing to maximise the value of the catch resulted in rapid depletion of sharks and other species, whilst fishing with very low effort (to protect sharks from overfishing) had very high costs in terms of the value of the catch.

The results suggest that, if conservation of sharks or other vulnerable species is mandated, managers need to think clearly in terms of trade-offs and/or improve selectivity of fishing practices, either through the use of more selective fishing gear or through carefully-placed marine-protected areas.

The relative fishing mortality rates found by the Ecosim optimal policy search were fed into the *Atlantis* model, built by Marie Savina and Beth Fulton of CSIRO. There was remarkably good qualitative (i.e., direction of change) agreement between many *Atlantis* and EwE forecasts of biomass, catch and biodiversity for the outcomes of a range of scenarios.

The two types of model have different strengths: *Atlantis* represents ocean dynamics explicitly and can therefore include fine spatial detail such as point sources of nutrient enrichment or pollution, as well as complex hydrodynamics; however, a single *Atlantis* run can take a day to finish. The simulated biomass pool dynamics of Ecosim, on the other hand, runs very fast and is good at searching for fishery scenarios that maximize catches while preserving biodiversity, or systematically exploring a range of trade-off between ecological and fishery objectives.

The Cecil and Kathleen Morrow Scholarship was generously endowed to the Fisheries Centre by Cecil B. Morrow in honour of his parents, Cecil and Kathleen Morrow. See www.fisheries.ubc.ca/grad/morrow.php for other winners.

Reference

Graham, K. J., N. L. Andrew and K. E. Hodgson. 2001. Changes in relative abundance of sharks and rays on Australian South East Fishery trawl grounds after twenty years of fishing. *Marine & Freshwater Research* 52(4): 549-561.



News and Notes

Daniel Pauly ECI Prize Winner 2007

Please join us in congratulating Daniel Pauly, who has been elected by the International Ecology Institute (ECI) as the 2007 ECI Prize Winner. ECI laureates are elected by a jury composed of distinguished ECI members.

As an ECI laureate, Dr Pauly will write a book in the "Excellence in Ecology" series, edited by Otto Kinne and published by ECI. The "Excellence in Ecology" series presents books in a rotating pattern in the fields of marine, terrestrial or limnetic ecology, authored by ECI laureates. Previous laureates include Edward O. Wilson, Robert Paine, David Cushing and Paul Ehrlich. A full list of laureates and their achievements can be found at www.int-res.com/ecology-institute/eci-prize. For details about previous books in the "Excellence in Ecology" series, please visit www.int-res.com/book-series/excellence-in-ecology.

Welcome back

Nathan Taylor returns to the Fisheries Centre to work with Murdoch McAllister, studying Atlantic Bluefin tuna movement and mortality dynamics using satellite, archival and conventional tags. He also continues his work from his last post at the University of Washington on marine density-dependent growth and survival effects on Pacific salmon.

Following another 'sabbatical,' this time in London where he spent three years as an Operations Analyst for Nomura International, a Japanese securities house, **Wilf Swartz** has returned to the Fisheries Centre to join the *Sea Around Us* project for the third time. Over the next eight months, he will investigate the global distribution of fish consumption by industrialized nations with an aim of measuring the level of food resource competition between various countries and marine mammals.

Congratulations

Amanda Vincent, Canada Research Chair in Marine Conservation at the Fisheries Centre, took a joyous extended leave this year. She travelled to GuangXi Zhuang Autonomous Region in China to bring home her new daughter, now named Andaya Yulei Jane Vincent. Andaya, born in July 2006, is rapidly becoming enamoured with all things aquatic.



Former Fisheries Centre student **Kristin Kaschner** and partner **Frank Kuelzer** are the proud new parents of **Hannes Kaschner** (left), born August 30, 2007, weighing 2.8 kg.

And graduate student **Mike Hawkshaw** and his wife **Megan Nordquist** are the proud parents of **Eleanor Olivia Hawkshaw** (right), who was born August 31, 2007, weighing 4.2 kg.



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