

## From Halifax to the White House

by *Ussif Rashid Sumaila*

**A**cademics are generally known to travel more often than the average citizen. The story I am about to tell confirms this in my case. This story began in January 2005 with my trip to Halifax, Nova Scotia, and ended at the Office of Management and Budget, Executive Office of the President of the United States on March 31, 2005.

In Halifax, a group of multidisciplinary fisheries scientists and managers met to participate in a workshop and Public Forum on "Creating a Positive Future for Fisheries and Coastal Communities". The key goal of the meeting ([law.dal.ca/law\\_6433.html](http://law.dal.ca/law_6433.html)), was to provide insights into how to create a positive future for fisheries, which, as we have learnt from recent studies, are in overcapitalized, overfished and, in some cases, depleted states. Instead of attempting to define what is meant by a positive future for fisheries, participants generally agreed that declining biomass of fish species targeted by a fishery over time *does not* signal a sustainable and

therefore a positive future for fisheries. Workshop participants agreed generally that global fisheries are currently in bad shape, and that some drastic measures need to be taken in order to turn things around and create a positive future for fisheries. Keys for creating a positive future for fisheries identified included

(i) developing methodologies for determining the total value of fisheries to society; (ii) engaging the public through educational and outreach programs; (iii) getting business involved; and (iv) linking science to policy.

From the winter of Halifax – I missed one of the famous Halifax winter storms on arrival to the city and escaped another one by flying out a few hours before it hit the city – I moved on to Cape Town, South Africa – an African city, which is home to the famous Table Mountain. Cape Town is affectionately compared to Vancouver by its many lovers, in terms of its

beauty and natural surroundings, with mountains, ocean views and much else. The city was host to the Southern African Development Cooperation (SADC) - European Union (EU) Monitoring Control and Surveillance (MCS) Conference in February, which was why I found



*Inspectors about to board a fishing vessel in Tanzania. Photo courtesy of C. Palin, SADC EU MCS Programme.*

myself there ([www.mcs-sadc.org/Welcome%20page.htm](http://www.mcs-sadc.org/Welcome%20page.htm)). The choice of Cape Town as host of a conference on MCS in the region underscores the pressure being felt by fisheries scientists and managers in South Africa from chronic illegal fishing by both foreign and local-based pirate vessels active in the country's waters. A case in point is a recent case of illegal fishing by the Hout Bay Fishing Company ... the

*Continued on page 2 - Sumaila*

**The Sea Around Us Project Newsletter**

**Issue 28 – March/April 2005**

**Sumaila - Continued from page 1**

company is believed to have illegally caught the equivalent of about 50% of the total quota for the South Coast rock lobster for over 10 years before it was caught.

*As an applied game theorist, it was great to come to the home of the man who set game theory free by proving the Nash equilibrium concept*

I focused my talk on the economics of MCS, emphasizing (i) the need to understand the economic drivers of illegal fishing; and (ii) the cost-effectiveness of MCS systems and the financing of MCS activities. MCS is necessary because illegal fishing is currently widespread globally, making stock assessments inaccurate; endangering the sustainability of resources; causing economic waste; and putting fishers who play by the rules in a disadvantaged position. Without MCS, illegal fishing would increase, resulting in the loss of economic, social and ecological benefits. Cost-benefit analysis of

16 cases of incriminated vessels fishing illegally around the world showed that the penalty they faced needed to be increased 25-fold in order for the penalties to serve as adequate deterrents to illegal fishing (Sumaila *et al.* 2004). Part of the reason penalty levels are low is, in general, that judges do not see why they should penalize fishers harshly 'just for fishing'. South Africa is on the way to providing a solution to this problem by constituting environmental courts to deal with serious cases of illegal fishing and other environmental crimes.

My next port of call was Princeton University, back in the U.S., where the game theorist, John Nash of the *Beautiful Mind* movie fame, made his mark and still resides. As an applied game theorist, it was great to come to the home of the man who set game theory free by proving the Nash equilibrium concept. I went to Princeton on the invitation of Sara Curran to participate in a conference entitled "Trading Morsels" ([www.princeton.edu/~piirs/trading\\_morsels/conference.html](http://www.princeton.edu/~piirs/trading_morsels/conference.html)). The conference is part of a larger project at Princeton, which seeks, through systematic assessments and comparisons of food-based commodity chains, to explore how these chains affect the economic development and environmental consequences in both producing and consuming nations. In my contribution, I demonstrated how the trading of

fishing access rights between West African countries and the European Union is leading to a situation where fishing communities are left dry – with 'no fish and no dollars' – thereby impacting negatively on their food security (Atta-Mills *et al.* 2004 and Alder and Sumaila 2004).

Many readers may know about Cancun, the big Mexican tourist trap where the 2003 WTO Conference took place and which, incidentally, I attended. Well, my next port of call, Loreto, Mexico, is not nearly as big and popular with tourists yet, but it seems to me that this is only a matter of time! I went to Loreto on the invitation of the North American Marine Protected Areas Network (NAMPAN) to give a keynote address on the 'Challenges to estimating the benefits of marine protected areas'. The Commission for Environmental Cooperation (CEC) of North America ([www.cec.org/programs\\_projects/index.cfm?varlan=english](http://www.cec.org/programs_projects/index.cfm?varlan=english)) coordinates NAMPAN, in collaboration with the North American Marine Working Group of IUCN/World Commission on Protected Areas. The aim of NAMPAN is to enhance and strengthen the conservation of marine biodiversity in critical marine habitats throughout North America by creating functional linkages and information exchanges among existing and planned marine protected areas. I

*Continued on page 3 - Sumaila*

The **Sea Around Us** project newsletter is published by the Fisheries Centre at the University of British Columbia. Included with the Fisheries Centre's newsletter *FishBytes*, six issues of this newsletter are published annually. Subscriptions are free of charge.



Our mailing address is: UBC Fisheries Centre, Lower Mall Research Station, 2259 Lower Mall, Vancouver, British Columbia, Canada, V6T 1Z4. Our fax number is (604) 822-8934, and our email address is [SeaNotes@fisheries.ubc.ca](mailto:SeaNotes@fisheries.ubc.ca). All queries (including reprint requests), subscription requests, and address changes should be addressed to Robyn Forrest, *Sea Around Us* Newsletter Editor.

The *Sea Around Us* website may be found at [saup.fisheries.ubc.ca](http://saup.fisheries.ubc.ca) and contains up-to-date information on the project.

**T**he *Sea Around Us* project is a Fisheries Centre partnership with the Pew Charitable Trusts of Philadelphia, USA. The Trusts support nonprofit activities in the areas of culture, education, the environment, health and human services, public policy and religion. Based in Philadelphia, the Trusts make strategic investments to help organisations and citizens develop practical solutions to difficult problems. In 2000, with approximately \$4.8 billion in assets, the Trusts committed over \$235 million to 302 nonprofit organisations.

*Sumaila - Continued from page 2*

used the opportunity to stress the need to capture the total values from marine ecosystems in general, and marine protected areas in particular, in economic valuations (see Sumaila and Walters, 2005). A correct computation of the values of marine protected areas needs to include how their creation will affect the quality and quantity of the use, non-use, option, bequest and existence values that the ecosystem is able to provide. I also took the opportunity to introduce the new *Sea Around Us* Global MPA database ([www.seaaroundus.org](http://www.seaaroundus.org)) and solicit data from participants to enrich the database.

My next trip was to Thessaloniki, the Greek city which is home to Aristotle University. I took the opportunity to give a lecture on the valuation of marine ecosystem goods and services at the university. However, the primary reason for my visit was to give a keynote address at the annual meeting of the European Association of Fisheries Economists ([www.eafe-fish.org/](http://www.eafe-fish.org/)), on the invitation of the President of the Association. The topic of my talk was fisheries subsidies, a topic that is of interest in Europe because of the popularity of buyback or decommissioning subsidies in the European Union. In general, fisheries subsidies are topical today for two reasons. First, someone has to pay for them – usually the taxpayer. Second, it is generally accepted that most fisheries subsidies are detrimental to the sustainable use of fishery resources. A key question I addressed in my presentation is whether buyback schemes are green subsidies, that is: do they reduce fishing pressure on fish stocks? I argued that because fishing capacity tends to seep back into the fishery after a

buyback scheme (Milazzo 1998), and that fishers are rational and therefore would incorporate rational expectations into their investment decisions (Clark *et al.* in press), buyback schemes are likely to contribute little, if anything, to reducing fishing pressure in a fishery. If buybacks are anticipated, the tendency is for fishers to invest in more vessels than they would otherwise, thus resulting in worse outcomes than the open access equilibrium outcome in some cases (Munro and Sumaila 2002; and Clark *et al.* in press).

A few participants in the conference tried to argue that European buyback (decommissioning) schemes have worked pretty well, and therefore seem to be an exception to my argument. However, even before I could react to this assertion, others in the audience provided counter arguments, making the point that European decommissioning schemes are indeed no exception and have not been as successful as claimed.

Finally, a unique experience for me - a visit and a presentation at the powerful White House Office of Management and Budget (OMB: [www.whitehouse.gov/omb/](http://www.whitehouse.gov/omb/)). Making a presentation close to the famous Rose Garden ([www.whitehouse.gov/history/grounds/garden/](http://www.whitehouse.gov/history/grounds/garden/)) was simply awesome. What is interesting about my visit to the White House is that I went there to present arguments against proposed revisions to the regulations implementing National Standard 1 of the Magnuson-Stevens Act, which deals with the rebuilding of federally managed overfished stocks. The regulation in question stipulates that if a stock



of fish is declared overfished by the National Marine Fisheries Service and if it is possible to biologically restore the stock in ten years, then all must be done to restore the stock within this period. The proposed revisions want to relax this regulation to allow the management councils “more flexibility” in restoring overfished stocks. Based on recent work at the Fisheries Centre (Sumaila 2004; Sumaila and Walters 2005; and Ainsworth and Sumaila in press), I demonstrated that relaxing the regulation amounts to postponing investment in the future of U.S. fisheries. It amounts to putting too much weight on the current cost of taking action compared to the potential future benefits from restored fished stocks. In general, my message was well-received by the participants at the meeting, which included staff members at the OMB, the National Marine Fisheries Service, the Environmental Protection Agency of the U.S. and representatives of environmental NGOs. It seems to me that the political time horizon of 4 years (that is, from one election to the next) is a problem. It makes the pressure to postpone action now very high due to pressure from interested parties. The only way to counter this pressure is for the public to be provided good information to help them push their representatives in the other direction, if that is what they want.

*I went [to the White House] to present arguments against proposed revisions to the regulations implementing National Standard 1 of the Magnuson-Stevens Act*

# Catch reconstruction and ecosystem science workshop: U.S. Western Pacific - Part II

by Dirk Zeller

*... according to a senior Council staff member, the Fisheries Centre participation in and contribution to the workshop was a success ...*

In Issue 23 of this newsletter (May/June 2004), I reported on a research agreement between the *Sea Around Us* project and the Western Pacific Regional Fisheries Management Council (WPRFMC) in Hawaii, to undertake a catch reconstruction exercise for the U.S. associated islands in the Western Pacific (American Samoa, Guam, the Northern Mariana Islands and Hawaii). This project is now reaching its final stage, with a draft final report being reviewed by the Council. Here, I would like to give a brief update on the project, whose findings I presented at the Ecosystem Science and Management Planning Workshop that was held in April 2005 by the WPRFMC in Honolulu. Fisheries Centre faculty members Carl Walters, Villy Christensen and Steve Martell also attended the workshop, which was expertly hosted by the Council Executive Director Kitty Simonds, and well organized and coordinated by the Council's Senior Scientist Paul Dalzell.

Without pre-empting the final revisions of the catch reconstruction, it is fair to say that the results I presented caused some surprise and concern among the participants of the workshop. Based on the reconstruction, all coastal fisheries catches (coral reef-, bottom- and reef-associated pelagic species) appear to have declined substantially between 1950 and the present, with overall declines possibly as high as 70-

80%. This trend is in contrast to that observed if one considers only those data that form the officially reported catch statistics (i.e., are missing subsistence and other non-commercial fisheries catches), which suggest a slight increase in catches over the same time period. Furthermore, the missing fisheries sectors (subsistence and other non-commercial) may account for several times the reported catches, in terms of tonnage, over the time period considered here. Thus, our perspective of historic fisheries development in these islands over the last half century will have to change significantly, and so do management approaches.

Furthermore, this project clearly demonstrates the need for the responsible local, national and regional agencies to fully account for catches from ALL fisheries sectors, i.e., account for TOTAL extractions of living marine resources in their national accounting schemes. It should be noted that not all of the likely decline in catches can be attributed directly to excess fishing, as dietary preferences have changed in many Pacific Islands with the growing establishment of cash economies, and near-shore habitats have also been extensively modified and often degraded due to coastal developments, thus likely reducing stock productivity. Nevertheless, overfishing of coastal resources is a major

concern for most of the main islands of the U.S. associated Pacific region, as has already been documented prior to the present project (e.g., Green, 1997). However, the presentation of complete time series of reconstructed catch estimates, despite high data source uncertainty, serves as a powerful visualization of the scale and magnitude of the likely decline in catches.

As a final note, according to a senior Council staff member, the Fisheries Centre participation in and contribution to the workshop was a success, and it is hoped that this will mark the beginning of a long and fruitful collaboration. We concur, and look forward to future collaborations. On the casual side, it was suggested that the social engagements of the Fisheries Centre contingent during the workshop has also left a lasting impression, and not only for the sinking of large volumes of wine, for which a certain member of the Fisheries Centre delegation (who shall remain anonymous) was significantly responsible! Enough said.

## References

Green, A. 1997. An assessment of the status of the coral reef resources, and their patterns of use, in the U.S. Pacific Islands. Western Pacific Regional Fisheries Management Council, NOAA Award Report NA67AC0940, Honolulu, 281 pp.



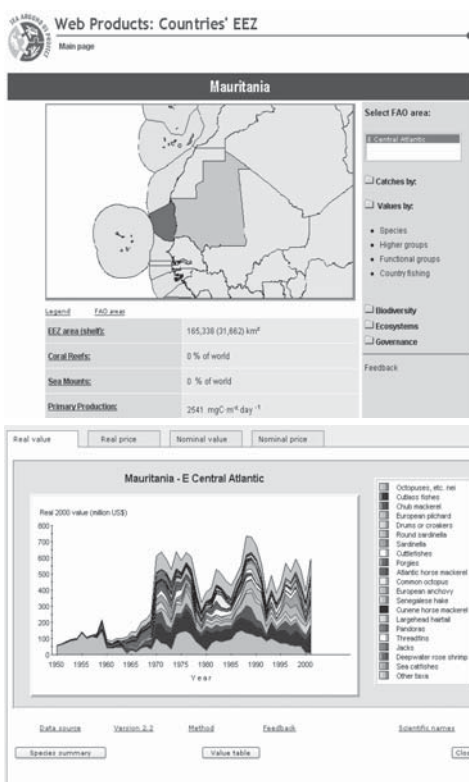
# A global ex-vessel fish price database is born!

by *Ussif Rashid Sumaila*

A new feature has been added to the *Sea Around Us* project's website ([www.seaaroundus.org](http://www.seaaroundus.org)): a database that provides real and nominal ex-vessel fish prices, and the corresponding landed values of fish caught from the exclusive economic zone (EEZ) of each coastal country of the world.

Ex-vessel fish prices are an essential piece of information needed to help manage fishery resources. This is because the financial value that is obtainable from catch is one of the primary motivators for fishers to go fishing. This is the first time that a global ex-vessel price database has been created and made available in this way, where interested members of the public, researchers and managers can easily obtain the prices of fish of all of the world's major commercial fish species. The United Nations Food and Agricultural Organisation (FAO) compiles product and processed fish prices, but not ex-vessel prices.

Ex-vessel price data for the world's commercial species were compiled from a number of sources, the aim being to add value by taking the data, already available but widely scattered, to a higher level that would permit more policy-relevant ecological and economic analysis of fisheries. We<sup>1</sup> concentrated, in the first instance, on data for the major fishing countries in each



continent. In this way, we collected data that covered the major fisheries of the world, while putting in place a database structure that would allow further inclusion of data for more countries over time.

The database runs from 1950 to the present (2001, currently). It should be noted that 1950 was the year the FAO started collecting and compiling global fish catch data. Hence, many analyses of global fisheries begin in 1950.

We searched all available sources of ex-vessel price data, including the FAO, the statistics office of the OECD, the European Commission, Fisheries and Oceans Canada, the US

National Marine Fisheries Service, Statistics Norway, Southeast Asia Fisheries Development Centre and FAO-Globefish, plus the web and the published literature (e.g., Anon. 2002a,b, 2003a,b and 2004). We also worked through our partners from all over the world to help us search for local data.

As would be expected, a substantial portion of the data matrix could not be completed with available data. Therefore, an assignment procedure was implemented courtesy of Reg Watson to fill the gaps. Thus, the price data we collected from published sources were used in an interpolation process to

ensure that all catch records from the *Sea Around Us* project's global catch database, regardless of taxon, country, region and year, would have prices assigned to them. Given that prices for much of the world's catch were available directly from the price collected, it was possible to use a structured interpolation process to fill in missing cases. The general process of interpolation was one of replacing general prices with more specific ones. This process assumes that the affinities of an animal (i.e., its place in the taxonomic classification) was the primary determinant of the price. Following this, in order of importance, were the country

*Ex-vessel fish prices are an essential piece of information needed to help manage fishery resources*

*Continued on page 6 - Prices*

**Prices - Continued from page 5**

fishing and the year when the catches were reported. At each step in the interpolation process, the level of specificity in the documentation was recorded. If a more specific price for a catch record occurred in a subsequent step in the process, then the old price, and its record of specificity, was overwritten with the new price. In this way, all catch records in the global database were matched with the most specific and relevant prices recorded in the price database or weighted averages of these (weighted by their individual specificity) when several were available. A measure of the price specificity/applicability is computed for each taxon for which a landed value is presented. These measures will be used to guide the priorities in further price data research.

With the launch of our ex-vessel price database, we hope that the community of fisheries scientists, managers, the fishing industry, NGOs and all interested parties in the world's fishery resources will help us improve the current version of the database for the benefit of all. Please explore the database, scrutinize it and send us your feedback on how best to improve it. And, of course, we would appreciate you sending

Please explore the database, scrutinize it and send us your feedback on how best to improve it

us any price data you may have that you believe would be helpful to the effort (Contact: r.sumaila@fisheries.ubc.ca).

**References**

- Anon. 2004. *Statistical Services, Fisheries and Oceans Canada. Commercial Sea fisheries Landings*. Fisheries and Oceans Canada, Ottawa, Canada.
- Anon. 2003a. *Statistics on fisheries for the years 1995 to 2001*. Organization for Economic Cooperation and Development (OECD), Paris, France.
- Anon. 2003b. *National Fisheries Services Database*. National Fisheries Services, Valparaíso, Chile.
- Anon. 2002a. *Price Data*. Chioggia Fish Market, Venice, Italy.
- Anon. 2002b. *Annual Commercial Landings Statistics*. Fisheries Statistics and Economics Division, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Silver Spring, Maryland, USA.

**Footnotes**

1. By 'we' I mean all those who contributed to making this database a reality, in particular: Reg Watson and his team, Dale Marsden and Daniel Pauly.

**Sumaila - Continued from page 3****References**

- Alder, J. and Sumaila, U.R. 2004. *Journal of Environment and Development* 13(2): 156-178.
- Atta-Mills, J., Alder, J. and U.R. Sumaila. 2004. *Natural Resources Forum* 28:13-21.
- Ainsworth, C.H. and U.R. Sumaila. In press. Intergenerational valuation of fisheries resources can justify long-term conservation: a case study in Atlantic cod (*Gadus morhua*). *CIFAS*.
- Clark, C.W., G. Munro and U.R. Sumaila. In press. Subsidies, Buybacks, and Sustainable Fisheries. *Journal of Environmental Economics and Management*.
- Milazzo, M.J. 1998. *Subsidies in World Fisheries: A Re-examination*. World Bank Technical Paper, No. 406, Fisheries Series, Washington.
- Munro, G. and U.R. Sumaila. 2002. *Fish and Fisheries* 3, 233-290.
- Sumaila, U.R. 2005. *Economic valuation and the reconciliation of fisheries to conservation*. Paper presented at the Fourth World Fisheries Congress, Vancouver, May 2004.
- Sumaila, U.R., Alder, J., Heather, K. 2004. The cost of being apprehended for fishing illegally: Empirical evidence and policy implications. In: Organisation for Economic Co-operation and Development (Ed.), *Fish Piracy: Combating illegal, unreported and unregulated fishing*. OECD, Paris pp. 201-230.
- Sumaila, U.R. 2004. *Fish and Fisheries* 5: 329-343.
- Sumaila, U.R. and C. Walters. 2005. *Ecological Economics* 52: 135-142.

## Upcoming publication

In a soon to be released issue of *Fish and Fisheries* ([www.blackwellpublishing.com](http://www.blackwellpublishing.com)) Dirk Zeller and Daniel Pauly present a paper on global discard estimates, entitled "Good news, bad news: global fisheries discards are declining, but so are total catches". In this paper, they combine the latest discard analysis undertaken by FAO with previous global discard estimates and global landings data for the 1975-2000 time period. Reducing wastage in fisheries, as indicated by the lower discard rates reported in the latest FAO analysis is good news indeed, and to be applauded and encouraged. Nevertheless, if one considers this decline in discards in conjunction with the reported decline in global landings over the last decade (see Watson & Pauly, 2001, *Nature* 414), it becomes evident that total global catches (being landings plus discards) might have declined at a steeper rate than previously thought. This could be bad news, if it is indicative of declining total availability of fish, rather than only the result of better fishing practices.