Sea Around Us

On bycatch or How W.H.L. Allsopp coined a new word and created new insights

by Daniel Pauly

An old friend of mine, and often a role model, Dr. W.H.L. 'Bertie' Allsopp recently turned 80, and wrote me that at the celebration, his brother, the author of the Oxford Dictionary of Caribbean English Usage (Allsopp 1996) asked him for a reference attesting the earliest introduction of the word 'bycatch'. Bertie, who was for many years a senior official at the Canadian International Development Research Centre (IDRC; Allsopp 1989) provided me with the background in two e-mails, whose substance, slightly edited, was as follows:

"The use of the term 'bycatch' originated in British Guiana in 1950 when I was first shown the large discards of catfishes (which were called 'skinfish'), caught incidentally by local fishermen in their nets and abandoned as unmarketable. We started, from 1950-1955, an 'Eat-More-Skinfish Campaign' with the full participation of the Governor and other high colonial officials, fish-feasts on St Peter's day, recipe book, calypsos, etc.

Figure 1. Sample of publications dealing with bycatch.

When a trawling survey, conducted off Guyana in 1957, found large resources of penaeid prawns, the situation became much worse. Soon, over 200 US, Japanese, and other Guyana-based trawlers started jettisoned their bycatch. However, the FAO declined to help. They hired me, however, to work for them in West Africa from a base in Togo. There, I saw the same pattern of discarding by shrimp trawlers, again considered by FAO a normal industrial practice.

It was only when I resigned from FAO, and started the IDRC fisheries program in 1972, that there was hesitant approval to undertake a bycatch utilization project in Guyana (Allsopp 1982). My new word – 'bycatch' - was first questioned, but eventually accepted as replacement for 'trash fish'. It also beat cute ('bye-catch') and boring ('non-target species') alternatives. The publication division of IDRC also identified similar terms

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for translation into its French, Spanish and Arabic publications. IDRC made a film on the topic, which had a great impact on policy makers, though we also got lots of resistance, especially from the USA and Japan. The word bycatch was then adopted by European environmentalists, by the Inter-American Development Bank, UNEP, and finally by FAO, which made the reduction of bycatch a good thing under their Code of Conduct for Responsible Fisheries. In fact, they just published the second edition of a 'Guide to Bycatch Reduction in Tropical Shrimp-Trawl Fisheries' (Eayrs 2007; see Fig. 1).

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I think there is an opportunity for the *Sea Around Us* project to advocate the wider development of bycatch-based products for human consumption. This was admirably done, for example, in Singapore, where they modified standard Japanese fish processing machines to handle smaller bycatch species, and trained fish technologists to start a new industry with the latest machinery. This is now a billion dollar seafood industry. The new products that are available for direct human consumption are marketed at greater value than the customary shrimp and fish. Looking up a Google search for 'bycatch from shrimp trawling', I find that there are over 120,000 hits [see Figure 1 for a sample]. All of this started with our humble advocacy from Guyana in the 1950s."

Simply put, Bertie Allsopp saw bycatch when others saw trashfish. I wonder how many new worlds lurk in words not yet invented.

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On volunteering for the *Sea Around Us*

by Lou Frotté

The Sea Around Us project regularly employs volunteers to assist with its work. This mutually beneficial arrangement provides young scientists with an opportunity to gain experience and to network while furthering the work of the project. Our most recent volunteer, Lou Frotté, joins us from France.

My first aim when I volunteered as an intern with the *Sea Around Us* was to gain professional experience in fisheries research, whilst at the same time improving my English. My second ambition was to enjoy my time here and discover the landscape and culture of British Columbia.

My work here has focused on the French territories in the South Pacific Ocean - that is to say French Polynesia, New Caledonia and Wallis and Futuna islands. I have collected a large amount of data about catches from commercial and subsistence fisheries between 1950 and 2005, using published sources. Processing these data has allowed me to estimate annual catches and match these data with those published by FAO. In most cases, FAO's numbers were lower than my estimates. Currently, I am taking the same approach for the French Antilles (Martinique and Guadeloupe) and French Guiana.

I have enjoyed my time at the Fisheries Centre - with both researchers and students. I have achieved my professional aims and have also discovered a beautiful country with an ubiquitous, wild nature and friendly people.

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The *Sea Around Us* website may be found at www.seaaroundus.org and contains up-to-date information on the project.

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The untapped treasure of local fishers' knowledge

by Dawit Tesfamichael

Clockwise from top left:

1. A fish landing site in Hodeidah, Yemen;

2. A fisherman with his son being interviewed in Hodeidah, Yemen. Net-mending time is one of the best time to do interviews;

3. Catch ready for sale in Port Sudan, Sudan

Photos by D. Tesfamichael

Many people who have been to a fish landing site and spent a few hours talking to fishers and observing the busy and non-stop movements of different kinds of people will agree that a lot can be learned about fish and fisheries right there. Fishers have a great deal of knowledge, accumulated over their years of experience. In many tropical fisheries, which are dominated by small scale traditional fishing methods, "lack of data" is always mentioned as a problem. Actually, over my few years in the Fisheries Centre, I have heard many researchers from the relatively "data rich" temperate countries also complaining about it.

As part of my PhD research, I went to countries bordering the Red Sea to obtain data for my thesis. I looked not only in the usual places, such as ministries, research institutes and universities, but also at fish landing sites, on the boats and in fishing villages. The objective was to interview fishers in order to obtain historical background and time series information for Red Sea fisheries. The work was done mainly by interviewing fishers of different age groups.

In the absence of data records, it is not uncommon for researchers to depend on information gained from people knowledgeable about the system and the issue being investigated. For example, oral traditions (a.k.a. Local Environmental Knowledge, LEK, or Traditional Environmental Knowledge, TEK) have been a valuable source of information about historical events in fisheries (e.g. Neis *et al.* 1999, Sáenz-Arroyo *et al.* 2005). Pauly (1995) argues that anecdotes e.g., about occurrence of species, can be 'as factual as temperature records'. Sometimes the only information available is expert or traditional knowledge and not using it may mean putting the fisheries at risk (Johannes *et al.* 2000). A good example of using information from fishers is in estimating unreported catch, which as the name indicates, is not found in any reports (Tesfamichael and Pitcher, 2007). Hence, in the situations of many countries where good, long-term data-recording systems do not exist, every effort should be made to collect information from the fishers themselves.

It goes without saying that including fishers, or users of other resources, in the assessment and management of

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Oral traditions [...] have been a valuable source of information about historical events in fisheries

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resources has many advantages. Their knowledge of the system is usually quite extensive and is an important guide for starting any kind of survey. Fishers' knowledge may also be complementary to existing knowledge of the resources. Understanding the motivations, concerns and operations of fishers is also an important part of ecosystem-based management, for isn't ecosystem-based management about taking a holistic approach - and what is the whole without the human element? From a practical point of view, the participation of resource users in decision-making may also increase the odds for successful sustainable use of resources. This issue was highlighted in the 8th Larkin lecture by Dr Ray Hilborn titled "Managing fish is managing people" (see Hilborn 2007) and also in many publications.

Many fishers told me stories of encounters with marine creatures that were sometimes bigger than their small boats

I had many opportunities to talk to old and young fishers. More than 400 fishers were interviewed from 3 countries: Sudan, Eritrea and Yemen. Questions were organized systematically so that the historical knowledge or 'data' in the fishers' memories were captured. For example, fishers of different ages were asked what was their best ever catch and when it occurred. They were also asked where they go fishing frequently. This will give an idea of as to what is happening to the resources in time and space. Fishers were also very good at providing information about changes in species and size composition of their catches over a long period of time. The main outputs of my work will be indices showing the status of each fishery and an evaluation of the available statistical data.

An additional treat was the amazing stories the interviewees were willing to share with me. Two of my interviewees were fishers who survived for three days in the sea after their boats were wrecked in stormy seas. Sadly, all of their colleagues were killed in the accident. Many fishers told me stories of encounters with marine creatures that were sometimes bigger than their small boats, although such encounters appear to be less common in recent years. I wonder what other insights will be attained once the interviews are analyzed quantitatively.

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