

A yawning gender gap

Research on the interaction between humans and the marine environment is incomplete without the significant role of women as fishers

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The inclusion of gender research is necessary for rigorous social and ecological approaches to small-scale fisheries. Within specific sectors it is recognized that women fish, but there is still a real need to include gender analysis in small-scale fisheries research and management. A gender approach to small-scale fisheries fits well with emerging ecosystem approaches that intentionally work at the intersection of social and ecological systems. Ecosystem approaches move away from a single stock assessment model of management towards a more complex understanding of the effects of multiple and interacting fisheries on the marine ecosystem.

The path of gender and fisheries research has been heavily influenced and guided by both the gender and development approach and the sustainable development approach. Over time the focus has shifted away from women-only approaches towards gender approaches that not only make up for a lack of information on women but also help examine the role gender plays in the interactions between women and men and the natural resources they rely on. While early work focused on the gendered division of labour in fisheries, the emphasis is now on livelihood approaches that pay attention to women's pre- and post-fishing activities as part of the fisheries economic

value chain, and also includes issues of poverty, food security, and human rights.

Over 25 years ago, Margaret Chapman wrote a groundbreaking review of the gender division of fishing labour in Oceania. Chapman's review detailed the social and cultural contexts that shaped the diverse ways in which women and men engage in fishing, but first and foremost she pointed out that women do fish. Chapman's work described the gender division of labour in fishing, with women's fishing primarily occurring in intertidal habitats, and men's fishing in deeper water habitats. Because women and men were found to use different fishing methods and fished in different habitats, their role in the marine ecosystem would also be distinct. Therefore, to understand the role of humans in the marine ecosystem it is necessary to include the fishing of both women and men.

To examine the different ecological roles of women and men in the marine environment, we reviewed the small-scale fishing practices of women and men from around the world. We limited our review to research from the past 20 years—the period 1992 to 2012. Important sources of information of women's engagement in the fisheries include serial publications such as *Yemaya*, and the SPC Women and Fisheries Information Bulletin. Other important sources include the Global Symposia on Gender and Fisheries, and on Women in Fisheries, which have emerged as part of the Asian Fisheries Forums. Using these resources, as well as other peer reviewed publications we were able to identify 106 case studies that had included women in their characterization of small-scale fisheries.

The case studies we reviewed often described the fishing methods, the types of animals that made up the catch, and the marine habitats that women and men used while fishing. These descriptions can be very helpful in illustrating how women and men interact with the marine ecosystem. Another pattern we found was that while fishing was often described, it was less likely to be counted. Counting how many people fish, how much they catch, and how much they fish (a measure of hours spent fishing or the number of hooks and traps or size of nets used), is an important part of fisheries science and allows researchers and managers to understand the how much or how little pressure human fishing is putting on the marine ecosystem. Because women's fishing is less likely to be counted, the contribution of women to fisheries and the potential impacts

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of their fishing on the marine environment are essentially invisible. Women's fishing may be less likely to be counted because it is assumed to be small in terms of overall human pressure on the marine ecosystem.

In many of the case studies we looked at we found that women were described as mostly participating in gleaning in the intertidal habitats such as mangroves, rocky shores, and seagrass beds, while men mostly used other fishing methods in sub-tidal habitats such as reefs and open water. However this was not found in every case and it is important not to assume that this pattern is universal. There were examples of women fishing in boats just as often as men, and of men gleaning. It's also important to note that fishing practices can often change over time and that includes gender differences in fishing practices.

In most of the case studies we examined, women and men caught both fish and invertebrates although women's catch tended to consist mostly of shells and other invertebrates, while men's catch was mostly fish. The researcher S.V. Siar's observation that 'Shells are for women, fish are for men' is common in the Pacific but we also found similar examples from other places in the world such as South Africa, Egypt, Spain, and the United States.

While we were interested in the ways that women and men fish, we understood the importance of recognizing that these differences are driven by the social and cultural context rather than by biological and physical differences. Women are not physically limited from non-gleaning fishing methods as demonstrated by their participation in diving, hook and line fishing, net fishing, and trap fishing in many different places around the world. Rather it is their concurrent social obligations that often limit the types of fishing women participate in. In the words of the researcher M. Tekanene describing women's fishing in Kiribati: "Gleaning shellfish is women's major fishing activity because it can be performed close to home, takes relatively little time, require no costly fishing equipment and may be performed in the company of children." Thus, the obligations of domestic work and childcare that are traditionally performed by women forms a cultural backdrop in which the type of fishing that women engage in is shaped by their larger role in society. The social context that shapes women's fishing also shapes men's fishing.

By examining women's fishing as well as men's fishing, the importance of intertidal habitats in understanding the ecological impact of small-scale fisheries becomes apparent. While mangroves, seagrasses, and other near

shore habitats have been identified as serving the ecological function of protecting juvenile fish for offshore fisheries, in many cases gleaners also use these habitats as fishing grounds. This can lead to tension between different fisheries. In El Salvador and the Comoros Islands, the intertidal fishing that women participated in was viewed as having a negative effect on men's offshore fisheries because it was felt that women's fishing threatened the juvenile fish and their habitats.

The inclusion of women's fishing also emphasizes the importance of shells. Shells and other marine invertebrates are not as well studied as fish. Similarly, the impact of common management measures such as marine protected areas (MPAs) is more often studied in fish. MPAs as a fisheries management tool may work differently for fish as compared to many invertebrates. For example as fish abundance increases within MPAs there is often a spill over effect where adult fish leave the MPA and may be caught by fishers. For certain shells that don't move, or move very little, the spill over of adults will not occur, but instead the benefit may come from the MPA acting as a breeding ground that may source juveniles to unprotected areas. While there are many studies of the spill over effect of fish in MPAs, the use of MPAs as a source of invertebrate juveniles is not as well studied or understood. By including women's fisheries the data gaps that exist in our understanding of marine ecology and ecosystem scale fisheries management are highlighted.

Women fish, and so the key question is why there are so few case studies that include women's fishing. Definitions of fisher and fishing often leave out part time fishers, subsistence fishers and gleaners. Because women are often heavily represented in all three of these categories, these narrow definitions lead to women's participation in fishing being overlooked. Furthermore data gathering methods that limit the respondents to men, or define "head of household" or "community leader" to be only men are also more likely to overlook women's fishing.

The exclusion of women's fishing from small-scale fisheries assessment leads to data gaps in the role of humans in the marine ecosystem, and often perpetuates inaccurate assumptions about the gender division of labour in fishing. To include women it may be necessary to change the way in which the very words "fishing" and "fishers" are defined, and how small-scale fisheries data are collected. An understanding of women and men's fishing is necessary for ecosystem approaches to fisheries management. ❏

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