

The Skimmer: Missing half the story: How considering gender can improve ocean conservation and management

"If we only think of fishing as men in boats pulling nets out of the water, we're missing half the story. When we only tell half the story we're in danger of underestimating how many animals are being caught, what types of animals are being caught, and why types of habitats are important for fishing. Not only that, we're missing how families feed themselves, how they pay for school or health care, or how they share with their neighbors. When we miss half the story we are more likely to make fishing and conservation management decisions that don't work."

--- Dr. Danika Kleiber

"Engaging women in conservation and development doesn't mean excluding men, it means not excluding anyone."

---New Course ([gender-based conservation and development organization](#))

Editor's note: Over the past few months, MEAM has been digging into the incredibly fascinating literature on how gender interacts with ocean conservation and management. What we found are a lot of compelling arguments that understanding – and addressing – gender dynamics is essential for developing effective ocean governance and fostering the sustainable use of ocean resources. Here's a synthesis of what we learned, with a focus on recent research and guidance.^[1]

Why incorporating gender perspectives into ocean conservation and management isn't just the right thing to do for gender equity – it's the right thing to do for ocean conservation and management

- One of the primary reasons that it is critical to consider gender in ocean conservation and management is that, in most societies, men and women use coastal and ocean spaces very differently
 - A typical pattern (in many developing countries as well as developed countries) is that men "fish" coastal and offshore areas for species to be sold at market while women extract diverse marine resources (crabs, shellfish, octopus, other invertebrates, seaweed, etc.) from nearshore areas ("gathering", "gleaning", "farming") for household consumption.
 - An example of this pattern comes from a recent study that used interviews, diaries, and seascape transects to examine the role of gender in coastal resource use and management in Zanzibar, Tanzania. Researchers found a highly gendered division of labor with men using the whole seascape (coastal forest, mangroves, seagrass beds, corals, and deep sea) for their fishing and other activities, and women remaining in coastal and nearshore areas (coastal forest, mangroves, seagrass beds) for their gleaning and seaweed farming activities. Women remain close to the home so that they can continue their childcare and other household responsibilities, and because they lack boat transport, swimming skills, and fishing gear.
 - Of course, the generalizations above do not always hold true because there are as many different scenarios for marine resource use as there are households, communities, and societies. In a number of countries such as Benin, Cambodia, Congo, Mali, Nigeria, Papua New Guinea, Solomon Islands, Tanzania, and Thailand, women do actually fish from their own boats. And in other countries, such as Uganda, women do not ordinarily fish from their own boats, but they own boats and hire men to crew them.
 - Fortunately for diversity – and unfortunately for ease of marine resource management – gender often needs to be examined at a site-specific level to be relevant. In some areas of Mozambique, women have minimal involvement in fisheries, while in other areas of the nation, women are the primary fish traders because so many men are employed in South African mines.
- In addition to the use of ocean space, other aspects of marine resource usage/fisheries are also highly gendered. Seafood processing worldwide is conducted predominantly by women. For example, women comprise more than 80% of seafood processing factory workers in Vietnam and canning and prawn processing factory workers in Malaysia and more than 60% of fish processing plant workers in South Africa. Small-scale fish markets are also often dominated by women. In the Congo, for example, more than 80% of fish traders are women. In Europe, more than 100,000 women worked in the fisheries sector, primarily in aquaculture (specifically shellfish gathering on foot) and seafood processing rather than "fishing" or work related to fishing boats.
- Taken together, available data suggest that, despite fisheries being viewed as a male arena, women actually comprise half of the total fisheries workforce worldwide. And this doesn't account for the "invisible", unpaid work of women constructing and fixing fishing gear, collecting bait, sorting and handling fish, and handling finances and logistics for fishers (often husbands, fathers, and sons) in their household.^[2] It is estimated that this unpaid labor, as well as women's income from other activities, enables men to continue to fish even as it becomes unprofitable due to declining stocks and/or rising costs.

- So why does who is doing the work matter so much to ocean conservation and management? It matters because ocean conservation and fisheries management have historically ignored women and focused on “fishing” by men rather than the full range of marine resource extraction by men and women. This has led to a substantial underestimation of catch, as well as the underestimation of diversity of species and habitats targeted by fishers.
- Moreover, not only does failing to consider gender skew our understanding of marine resource use, failing to understand the behavior of a large portion of resource users (generally women) results in management strategies that do not work and are even counterproductive. Failing to properly account for gender effects has led to decreased economic and livelihood opportunities for communities; reduced access to and control over resources for women; increased gender inequalities and tensions; increased workload for women; and increased social stratification (particularly in cases where opportunities are only available to higher status women such as wives of male community leaders).
- These problems can lead to a lack of broad support for conservation and management efforts (such as marine protected areas [MPAs]) and undermines their long-term success. In a case in the Solomon Islands, women – who were negatively affected by a marine closure in their fishing area and did not feel included in local marine management decisions – were inclined to break local marine management rules.

More women → Better management?

- And to go a step farther, not only does failing to consider gender lead to faulty understanding of existing marine resource use and the potential for management strategies that do not work and/or exacerbate societal problems, it also means that ocean conservation and management efforts by management agencies and conservation organizations do not take advantage of the full range of resources available to them. There is evidence to suggest that giving women a greater role in decision-making may result in more sustainable approaches to marine resource management.
- For starters, women often think differently than men, and they contribute different ideas, knowledge, and perspectives to conservation and management.
 - For example, recent studies have found gender-based differences in perceptions of risk from coastal hazards and threats to marine resources, perceptions of marine species, and willingness to pay to prevent coastal resources from degrading.
 - Due to their caregiver roles, women are often more aware of household needs related to food security and wellbeing. This enables them to better represent these interests in policy decision making.
 - Women are also likely to be more aware of the state and use patterns around many natural resources, such as nearshore reefs that they glean, due to their work in these areas.
 - Having women involved in corporate management may also make businesses more environmentally responsible. A recent study found that fewer environmentally-focused lawsuits were filed against companies that had more women on their corporate board. Possible reasons for this include that women are socialized to be more aware of and considerate of others’ needs; diversity increases wise decision making; and women are more likely to seek out expert advice when dealing with highly specialized matters.
- And ocean conservation and management don’t just need women’s voices, they need women’s actions.
 - Women spend over 70% of consumer dollars worldwide and make over 80% of all purchases in the developing world, making their consumer decisions, making their consumer decisions (e.g., use of single-use plastics, purchase of seafood) critical for many aspects of ocean health.
 - Studies of several fisheries – abalone fisheries in Mexico, multi-species artisanal fisheries in Columbia, small-scale artisanal fisheries in Brazil – have found that women exhibit more environmentally sustainable behaviors than men.
 - A study in Mexico found that women show greater aptitude than men at changing their resource extraction behavior in response to regulations, sanctions, or social scolding.
 - A study of turtle egg harvesting in Costa Rica found that women are more likely to follow rules for community conservation projects.
 - Women through their dual roles as fishers and primary caregivers for children are key agents in changing individual community members’ behaviors, attitudes, and actions towards fisheries sustainability and environmental protection.

A dramatic example of this type of dynamic can be seen at the Burgos Birds and Fish Sanctuary MPA in the Philippines where women voluntarily patrol the MPA, often accompanied by their children, to ensure food security for their families and future generations.

But has anyone really, really proved that incorporating gender perspectives into ocean conservation and management is critical to effective outcomes?

- Not yet unfortunately. A review of the conservation literature found that: 1) less than 1% of peer-reviewed conservation literature incorporates a gender dimension and 2) most of the literature that does incorporate a gender dimension looks at development rather than conservation outcomes (even though the two are likely to be closely linked). In the words of the reviewers, “What we are left with is a sense that an awareness of gender does matter, or at least that it ought to matter... However, we are still a long way from having a sound empirical understanding of precisely the mechanisms involved.” A few areas where gender has been explicitly linked to conservation outcomes include the conservation and restoration of mangrove forests and the use of public health messaging to promote the use of birth control to reduce local population pressures on threatened ecological resources.
- In addition, although gender is likely to be important to conservation and management outcomes in both the developing and developed world, most studies that consider gender in resource management focus on developing countries (particularly in Asia and Africa and to a lesser extent Latin America) because the studies are conducted in conjunction with development work.

Also, gender analysis isn’t just about understanding women

- It is also important to stress that incorporating gender considerations into ocean conservation and management work isn’t just about understanding women – it is also about better understanding men, social relations between men and women, and the social and cultural norms that create these relations. Some critical considerations:
 - Many men are attracted to fishing because of the riskiness, adventure, and companionship with other crew members. Many men also express pride in their identity as “fishermen”. These associations can lead to the men staying in the industry and/or the failure of alternative income projects, even in cases where fishing is unprofitable.

- Fisheries management is dependent on both men and women complying with rules and regulations..
- Men in fisheries are often portrayed as problematic (e.g., promiscuous, alcoholic/drug-addicted), without fully understanding and acknowledging these behaviors as coping strategies for often socially and politically marginalized circumstances.
- And, of course, gender is one of many characteristics (e.g., social status, ethnicity, age, migration status, etc.) that influence who has access to and control over natural resources and needs to be examined in this wider context.

How climate change and globalization are changing gender roles

- Global-scale changes such as climate change and globalization are fundamentally altering the structure and function of ocean ecosystems as well as many aspects of ocean resource use, including traditional gender roles.
 - For example, in Tanzania, octopus was traditionally caught by women for household consumption and local markets. When an international market for octopus developed, prices rose, and men started fishing for octopus, including in offshore areas where women were not allowed to fish and during traditional “off-seasons” that had allowed octopus populations to regenerate. Women were displaced from the industry, and profits from the fishery fell due to increased fuel costs and decreased catch per unit effort.
 - In the Maldives, modernization of the fishing industry has led to fishermen increasing catch and selling directly to exporters – reducing women’s participation in the industry (through fish processing) from 50 to 19%.
 - In Asia, many women who traditionally gleaned shorelines and reefs are migrating to other countries to work as laborers, and more women are becoming involved in fish farming.
 - And in Oceania, more women are fishing offshore from boats using nets and lines, a traditional men’s activity, and women’s roles are increasingly moving from nearshore subsistence activities (e.g., gathering and gleaning) to market-based activities as male-dominated fisheries become increasingly unprofitable.

A few other ways in which gender interacts with ocean conservation and management

- Differentiated gender roles are prevalent in many marine industries although they are better researched in fisheries than in other sectors such as aquaculture, marine tourism, and marine conservation and management. The International Maritime Organization (IMO) does provide some high-level data about the international shipping industry, however. According to the IMO, women seafarers comprised 1-2% of the total seafaring workforce in 1992, and this percentage has not changed significantly since that time. In addition, few women fill other maritime industry positions such as port operator, surveyor, and port state control officer. To encourage women to pursue careers in the maritime and ocean sectors and address the gender gap, the IMO has made the theme of the 2019 World Maritime Day “Empowering Women in the Maritime Community”.
- While there is not full gender parity in the ocean sciences, a recent report on global ocean science found that 38% of ocean researchers are female – 10% more than in science overall. Oceanography, like most sciences, is characterized by a “leaky pipeline” in which the percentage of women decreases with each stage in a typical career progression, often due to childcare responsibilities. For example, in 2014, women made up roughly half of the student bodies of major oceanographic graduate schools in the US but less than a quarter of the full/senior professors in those schools. This represents a significant improvement over the situation over a decade earlier, however, and ocean science disciplines are taking a close look at ways to stem this “intellectual and economic loss”.
- Women are also moving into leadership positions in ocean conservation and management. A prominent ocean conservationist (and founder of Ocean Collectiv – a group of experts that supports clients in advancing ocean sustainability ... and happens to be entirely women) saw new leadership from women and young people as one of the few bright spots for ocean conservation in 2018.
- Finally, another critical intersection between gender and ocean conservation and management is the unique and heightened vulnerability of women (in both the developed and developing worlds) to a number of risks associated with the marine environment, including exposure to mercury in seafood and coastal hazards.
 - In particular, women are more at risk from sudden onset hazards (e.g., tsunamis, floods, cyclones, mud slides) due to not having been taught to swim, responsibilities for carrying children and the elderly to safety, clothing that limits their mobility, inability to leave the home without a male companion, and not having access to warnings. These factors led to substantially higher mortality of women than men during the 2004 tsunami in Indonesia and highlight the need for gender-sensitive risk assessment, early warning systems, and risk awareness education.
 - Women are also uniquely vulnerable to degradation of the marine environment, including fisheries collapses, because they bear the primary responsibility for food and water security in many parts of the world and use coastal resources for household needs such as fuel and medicine.

What should practitioners do next? Recommendations from the literature

- So how do ocean conservation and management practitioners make sure that they get the “full story” and make conservation and management decisions that do work? Expert recommendations focus on a number of areas.
 - **Collect gender-disaggregated data.** Lumping numbers for women and men together hides disparities in both status and outcomes. Organizations should move to collecting gender-disaggregated data to better understand existing differences in the way women and men interact with marine resources and to monitor the effects of management and conservation actions. The impacts of conservation and management actions are likely to be different for women and men, and gender-disaggregated monitoring and evaluation is needed to show if management actions are actually effective, if actions are benefiting the groups they are intended to benefit, and if actions are having negative consequences for social equity.
 - **Work to understand local contexts from the beginning.** Women and men have different knowledge, skills, needs, and responsibilities relative to coastal and marine resources. Practitioners should start their work with gender-sensitive baseline studies, stakeholder mapping, and grassroots-level participatory consultation to understand local gender roles and relations, learn who has access to and control over what resources, and learn the full range of concerns of stakeholders.
 - **Include women in decision-making processes.** Every management process needs to be context-specific to be effective and avoid creating new problems and exacerbating existing problems. Some practical strategies that have worked in different areas include:
 - Bringing women into historically male fisher organizations, including through quotas for women. For example, fisherwomen’s organizations (such as the professional organization for female shellfish gatherers in Galicia, Spain) are starting to become part of male-dominated umbrella fisheries organizations and

have representation on regional advisory councils for fisheries management.

- Specifically recruiting women for positions that have historically been held by men.
- Creating and training Gender Focal Persons to raise awareness and understanding of gender-related issues.
- Working with grassroots women's groups to boost their leadership and networking skills so they can better disseminate information and advocate for their members.

Additional successful examples of and resources for mainstreaming gender in coastal and marine management can be found [here](#), [here](#), [here](#), and [here](#). Teaming up with sociologists and anthropologists working an area can help conservation and management practitioners better understand and account for relevant gender issues.

[1] Gender refers to the social roles associated with a person's biological sex (i.e., male or female) as well as a person's self-identification of their gender (i.e., gender identity, which is not limited to male and female). For the purposes of this article, we will be focusing on the first use of gender – the diverse social roles, behaviors, activities, and attributes – associated with men and women.

[2] Some European countries (France and, to a lesser degree, Spain, Portugal, and Finland) are now attempting to recognize this "invisible" work by providing formal recognition and legal status for "collaborative spouses" (EU Directive 86/613). Collaborative spouse status gives women access to social benefits such as maternity leave coverage, social security, old age pensions, training, etc. as well as the opportunity to join historically male fishers' organizations and access professional training.

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#1 - Traditional harvester of mangrove oysters, Sine Saloum region, woman of Soucoutra village, Senegal. [Julien Saison](#). Used under [CC BY-SA 4.0](#)

#2 - Women removing the shell from mangrove mudshells in Malaita, Solomon Islands. [Wade Fairley, 2012](#). Used under [CC BY-NC-ND 2.0](#).

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#4 - Woman setting up a fish net, Bangladesh. [WorldFish, 2006](#). Used under [CC BY-NC-ND 2.0](#).

#5 - A local women sells fish at the Bor Fish Market in Joglei, 2017. [UNMISS](#). Used under [CC BY-NC-ND 2.0](#).

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