Gender matters

Women's participation in small-scale fisheries management results in positive outcomes for both the local community and the social-ecological system

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Despite women making up about 50 percent of the fisheries workforce worldwide, their contribution to the sector has long been under-estimated with implications for fisheries management and food security. This is because, in many countries, fisheries definitions are narrow and tend to focus on the production node of the value chain whereas women are mostly involved in fish processing and marketing. Gender-biased approaches in fisheries research have also contributed to mask the important role played by women in fisheries economies. In this context, this study sought to assess women's participation in small-scale fisheries (SSF) management and the related socio-cultural, environmental, and economic impacts.

To do so, we reviewed the existing literature on the topic using two search engines: Web of Science (WoS) Core Collection and Scopus. Our review included 124 case studies from 51 countries which examined women's participation in SSF and discussed management issues (Fig.2). We defined three main levels of participation in SSF management: excluded, limited, and active participation. Based on this categorization, we assessed women's participation level in each of the reviewed case study. Further, we examined the impacts derived from women's participation in such processes and classified them as socio-cultural, environmental, or economic. We also considered the scale of each impact to determine whether it affected only individuals, the community, or the whole social-ecological system.

The most striking finding of this study is that women were not actively participating in SSF management in 80 percent of the reviewed cases that gave enough information to assess women's participation. In most cases, authors reported that women were not formally excluded from SSF management, but they faced barriers to actually participate, highlighting the importance of gender norms and stereotypes. Women would usually attend management meetings but would keep quiet and not contribute meaningfully to the discussions.

Moreover, our findings show that women's exclusion from SSF management was associated with negative outcomes. The most common negative impact was adverse consequences on women's livelihoods derived from their lack of participation in SSF management. As an illustration, research work done by Rohe and colleagues in 2018 in the Solomon Islands examined the consequences of a marine

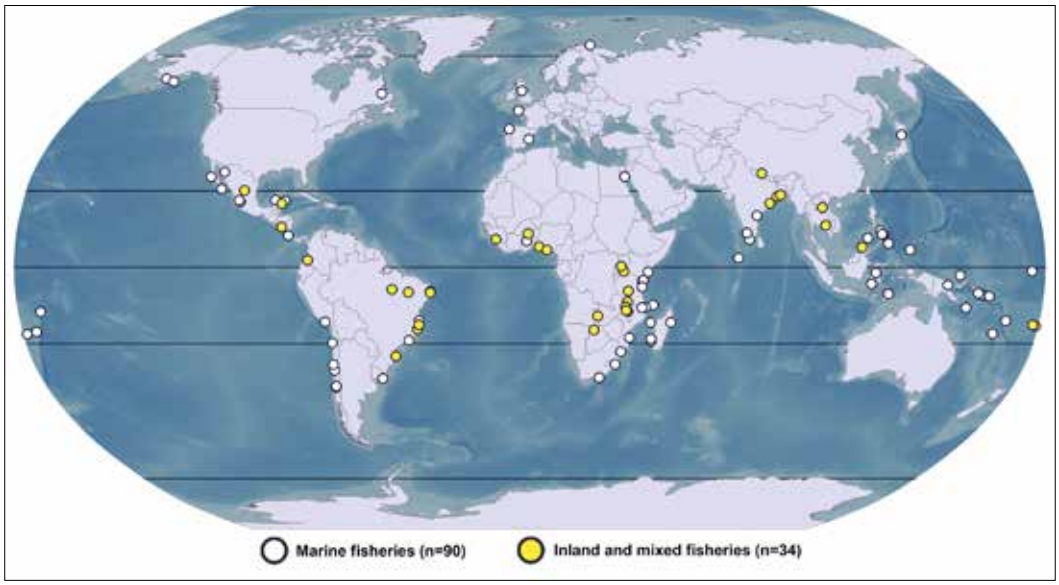

Figure 1- Geographical location of the 124 case studies, per fisheries type. The map was built under QGIS 3.22.7, using bathymetric data from General Bathymetric Chart of the Oceans (gebco.net)

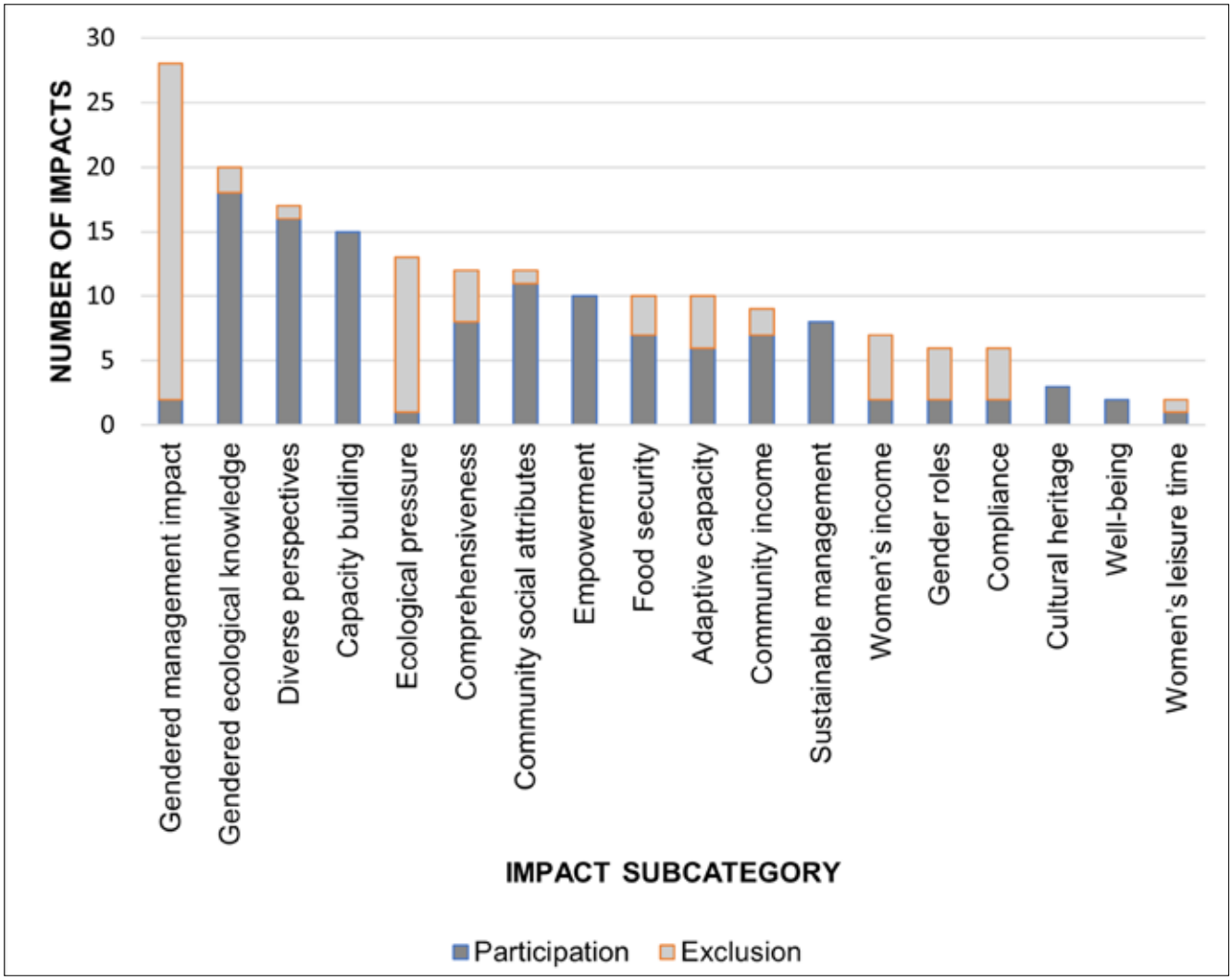

Figure 2 - Number of impacts per subcategory (n=190). The impacts displayed in dark grey are associated to cases where women participate in SSF management (i.e., limited or active participation) whereas impacts in light grey are those associated to women's exclusion cases

closure designation overlaying with women's fishing grounds and found out that it had severe implications on local food security. However, our study also highlighted that when women were able to participate actively in SSF management, it resulted in positive socio-cultural, environmental, and economic impacts not only for local communities but also for the entire social-ecological system.

As an example, a study by Rivera and colleagues in 2017 in Costa Rican SSF communities documented how the active participation of women in a fisheries cooperative led to positive individuals impacts. Located on the Pacific coast of Costa Rica, the community of Tárcoles highly relies on SSF activities for its local economy and nutritional needs, but faces several challenges such as pollution, declining fish stocks and mass tourism. To address these issues, governmental support combined with the adoption of a fisheries co-management approach led to the establishment of the CoopeTárcoles R.L cooperative in the 1980s. Since then, this SSF cooperative has become one of the most successful fisheries cooperatives of the country, promoting sustainable fisheries management and supporting women's participation in management and governance. Although women did not own boats, which was an initial criterion for joining the cooperative, the recognition of their important role in pre-production and fishing activities gave them access to the cooperative membership. As the researchers stated: "*Slowly, CoopeTárcoles R.L has been expanding beliefs on the role of women, promoting the fact women can and do play an active role and contribute on a daily basis to the community's economic, social, and cultural life*". Overtime, women gained more power within the cooperative by holding notable leadership positions such as members of the Administrative Council, the Board of Directors and Vice-President. Through their experience in the CoopeTárcoles R.L cooperative, women built in capacity, gained leadership and business skills, and improved their confidence.

Another example is the story of women's participation in fisheries co-management in the

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Biobio region, south-central Chile, documented by Franco-Meléndez and colleagues in 2021, which provided positive benefits to SSF workers and the environment. In Chile, the main fisheries co-management approach is embodied in the Management and Exploitation Areas for Benthic Resources-MEABR system. It is perceived as an efficient approach for promoting both sustainable use of fisheries resources and the participation of local resource-users. Owing to their engagement in fishing and seaweed harvesting, women acquired important rights in participating to the MEABR system despite the long-lasting view that fishing as a male domain. Specifically, in Coliumo Bay, women's participation in the MEABR system enhanced their empowerment. According to the researchers: "*The views of women have become more important in fishery management, for example, where women have increased their capacity, confidence, and engagement for good fishery practices*". In addition, the recognition of women's perspectives in SSF management has notably favoured ecological outcomes in management decisions and the conservation of natural resources. To quote the researchers once more: "*MEABR's that are run by women also have an ecological focus with a reorientation to seaweed collection*".

These are only a few illustrations from our study suggesting that women's participation in SSF management contributes to positive outcomes for the social-ecological system. Overall, our study highlighted the critical need to address women's exclusion from SSF management and decision-making processes and tackle the lack of gender-disaggregated data in fisheries research. We concluded by providing key recommendations towards a better inclusion of gender considerations in fisheries data collection methods, SSF management, and ecological research on SSF. This study is relevant for academics, practitioners, and policy makers in the field of sustainable development, fisheries, and food systems. *To read the full paper, please visit: https://link.springer.com/article/10.1007/s11160-023-09806-2*