

Healing small-scale fisheries by facilitating complex socio-ecological systems

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Abstract

The current global fisheries crises have immense implications for the health and viability of animal populations, as well as the ecosystems and habitats that support this biodiversity. These crises have provoked a wide variety of management solutions and alternatives that are closely aligned with other small-scale resource extraction conservation approaches, but have been analyzed separately from the common-pool resource management literature. We summarize findings from an analysis of progressive small-scale fisheries worldwide and find that solutions arise from a historical trial and error management process as problems become dire. We find high success in the social organization and regulation of resources among these progressive fisheries but poor evidence for improved ecosystems. Based on evidence provided by the most progressive fisheries, we suggest a change in policy towards the management of small-scale fisheries. This change includes four major avenues of problem solving that focus on facilitating socio-ecological processes rather than primarily promoting a high level of quantitative science and implementing findings, technological concepts, or tools. Adoption is often culturally and context specific and, therefore, the above often have poor success when not socially integrated. We encourage facilitating and catalyzing local-level adoption of rules that create limits to appropriation and technology, since it is increasingly recognized that such limits are key solutions to the threats. This will be achieved if policy and actions (1) encourage professionalism (formation of “societies”, setting standards, certification, self-policing, appropriate technology, etc.), (2) create forums where all opinions about solutions, the status of targeted species, and environmental requirements are represented, (3) promote social rules that consider the realities and limits of the households and local social economy, and (4) craft solutions tailored to the specific and agreed upon diagnoses. We predict that as this socio-ecological process matures, it will also increase the inclusiveness of resource management goals to include non-use factors, such as biodiversity and other ecosystem services, which are still poorly evaluated and managed in even the most progressive small-scale fisheries.

Keywords

Common-pool resources, Fisheries crises, Forums, Marine conservation, Ecological benefits