

Participatory and multidisciplinary strategies for sustainable fisheries and marine conservation

Marine conservation and fisheries management efforts require multi-disciplinary efforts and multi-sectoral participation to ensure sustainability. Since 2007, Planeta Océano engages coastal communities to sustainably manage their marine environments by promoting citizen science, marine education and sustainable development initiatives. Local volunteers investigate local ecosystems, species and fisheries to guide policy and management; Ocean Literacy is incorporated and institutionalized within schools and communities; and market-based approaches to conservation and sustainable entrepreneurship are incubated. These comprehensive and collaborative efforts enable a fundamental shift in the approach towards resource management, showcasing citizens as primary players and connecting multiple stakeholders.

Examples of these approaches include, for example, marine turtle conservation efforts, in which small-scale fishermen, academia, government institutions, youth and the private sector assessed bycatch and stranding of these threatened species. Similarly, young professionals and students contributed with researching fishers' traditional knowledge to understand the occurrence of the critically endangeredargetooth sawfish (*Pristis pristis*) and help guide legal protection for this species. Elasmobranch fisheries have been assessed through fisheries landings and on-board data collection. And efforts to address giant manta ray (*Mobula birostris*) bycatch and mortality have included participatory monitoring, spatial ecology, fostering policy, understanding the socio-economic impacts of manta ray entanglements, working with communities to develop management considerations, and enhancing community ownership in conservation, for example through community-based ecotourism. In addition to environmental benefits, this work fosters socio-economic opportunities such as entrepreneurial skills, additional income streams and professional development.

Key elements in Planeta Océano's model include (i) co-creation with local communities, (ii) horizontal knowledge exchange, (iii) identification and investment in local leaders, and (iv) promotion of multiplier effects. By connecting diverse sectors and a wide array of approaches - ranging from fisheries, biological and social science, to technology deployment and youth capacity building, among others- this collaborative model provides the basis for sustainable fisheries and conservation.