

Overexploitation of marine resources in professional and recreational fishing: addressing main issues and technological innovations for sustainable fisheries

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Marine fisheries worldwide are faced with major sustainability issues. Commercial fisheries have reached impressively high catch efficiency, often harvesting more fish than the stocks can afford without compromising themselves. In the Mediterranean Sea, more than 90% of fish stocks studied are overexploited. Furthermore, many of the organisms caught are discarded for a variety of reasons—too small, damaged, inedible, of little or no commercial value or under the legal size. Stocks overexploitation and discards are issues also of recreational fisheries, since around 9 million anglers operate in European waters, removing a significant fraction of fish, which is hardly monitored and addressed in stock assessments.

The activity 1.1, inserted in the National Recovery and Resilience Plan (NRRP – Spoke 2), is addressing the impact of both commercial and recreational fisheries, and investigating the potential of specific technical solutions to promote more sustainable exploitation. In commercial fisheries, we are testing bycatch reduction devices (size sorting grids in bottom trawl, line setter in longline, acoustic deterrents in set nets) and alternative gear (automatic jigging machines) to reduce the impact on stocks and the incidental catch of vulnerable species (sea turtles, sea birds, cetaceans). In recreational fisheries, we are testing novel technologies to estimate fishing effort in Italian Seas (shore and boat anglers) including remote cameras, drones, smartphone apps for citizen science, and onsite surveys. Also, we are conducting tagging programs on fish caught by recreational fishers in both inshore and offshore areas to study fish survivability after release (in Catch & Release practices), fish movements and behaviour.