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[Assessment and management of western Mediterranean small-scale fisheries](#)

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Abstract: Nearly 75% of European fishing vessels belongs to small-scale fisheries (SSF). However, SSF have received little attention compared to industrial fisheries. In the Mediterranean Sea, where the SSF traditionally had a high socio-economic relevance, there is a widespread interest in securing its sustainable exploitation and viability. Here we analyze the SSF from Mallorca (Balearic Islands) using fishery statistics from the last 25 years (1990–2014). Although fleet size declined markedly (–55%), landings remained constant which might be related to different, not mutually exclusive explanations such as a decrease in unreported catches, stagnant and closed market or technological creeping. Multivariate analysis revealed eight different fishing tactics corresponding to the main target species. Aggregated, these eight species accounted for 52% and 71% of SSF landings weight and value, respectively. The fishery of these species is markedly seasonal and the landings of most of them showed important fluctuations but no clear trends. In contrast with the claims of SSF having lower impact on the natural resources than other fisheries, surplus production models revealed a generalized overexploitation of these target stocks, especially for the most high-valued species. Simulations with a bioeconomic model showed that fishing effort reductions of 38% would improve the health of fish stocks while increasing the economic profits to as much as 15% from current profits. If all stocks were kept below their MSY level, the reduction in fishing effort would have to be of 53% from current values. If the economic yield from the fishery was to be maximized (MEY), fishing effort would need to be reduced by 28%. Owing to important quantities of unreported catches in the most high-valued species, output values of the stock status indicators and the bioeconomic modelling should be taken with care beyond tracking trends in the fishery.

Keywords: Small-scale fishery, Fishing tactics, Surplus production model, Bioeconomic model, Maximum sustainable yield (MSY), Mediterranean