MINOUW — Result In Brief

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Minimising bycatch in European commercial fisheries

The modern, versatile methods now used to catch fish compound an age-old problem — the unintentional catching and killing of unwanted marine species. An EU-funded project has demonstrated enhanced technologies and practices that help reduce amount of unwanted catch.

According to certain estimates, over 7 million tonnes of fish are discarded at sea every year. While the practice has been discouraged by EU Member States, it was not until major reforms to the CFP were secured that a ban was formalised. As of 2019, the discard ban (LO) will end once and for all the commercial fishery practice of throwing non-target and undersized species back overboard.

The Horizon 2020 MINOUW (Science, technology, and society initiative to minimize unwanted catches in European fisheries) project addressed the complexity in implementing the landing obligation in south European fisheries. The project provided policy recommendations that aim to incentivise selective fishing and the best use of unwanted catches brought on land. It also demonstrated several new technical solutions for reducing preharvest mortality and post-harvest discards, while avoiding damage to sensitive marine species and habitats.

Gearing up for change

Despite the incremental introduction of the landing obligation over the last four years, fisheries remain relatively underprepared for its implementation. "The lack of incentives to gradually progress to more rational exploitation of fishery resources and the limited means of EU control make it difficult for [fishers] to fully comply," explains project coordinator Francesc Maynou.

Researchers identified the improvement of gear selectivity as a viable option for making the fishing industry less reluctant to change its practices. The new practical and affordable solutions not only help fishers prevent unwanted catches in the first place, but also increase the survival rate of the released organisms.

To improve selectivity in bottom trawling, project partners tested extension pieces such as square-mesh and T90-mesh nets. Both net configurations create an escape panel in an existing diamond mesh cod-end for non-target or undersized target species. "Results from field-trial tests in Catalonia were positive: the T90 panel allowed more than 50 % of small hakes and red mullets to escape," reports Maynou.

Modifying trammel nets by incorporating a guarding net between the footrope and the trammel was another innovative solution that proved successful in reducing bycatch by 50 % in small-scale coastal fisheries. This type of sorting grid is
specifically designed for Mediterranean trawls and reduces handling time and net damage.

Results from using a modified slipping technique during purse seine operations in Portugal demonstrated very high survival rates for slipped pelagic fish. “Our 'early-slipping' procedure helped survival rates for discarded small sardines to increase from 20 % to 70 %,” adds Maynou. A newly developed ‘juvenile-excluding device' helped cut down unwanted bycatch of hake, red mullet, deep-water rose shrimp and horse mackerel by 50 % to 70 %, depending on the species.

Fishing monitoring

Precise understanding of the spatial footprint of fisheries increases the ability to quantify the negative impact of fishing and better protect certain sea areas.

MINOUW’s new geographic information system is an invaluable tool for marine researchers and represents a major step towards more sustainable fisheries. It reduces unwanted catches and discards using satellite data, maps and observations. The software combines maps of potential high-density discard areas with ‘fisheries footprint' spatial information. This spatial selectivity assists marine planning by establishing temporary closed areas where fishing is not allowed for a certain period of time.

The portfolio of innovative technical solutions delivered by MINOUW offers the possibility for Europe to end the controversial practice of discarding fish, while remaining attractive to fishers, fishery managers, policymakers and industry.

Keywords

MINOUW, fisheries, bycatch, discards, landing obligation, guarding net, geographic information system

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