

# COST-BENEFIT ANALYSIS OF USING REUSABLE AND RECYCLABLE BOXES FOR THE TRANSPORT OF FISH

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## BACKGROUND



Polystyrene foam (EPS) is extensively used in the fishing sector



Key components of marine litter at sea and beached along coasts



Threat to marine life and potentially dangerous for humans, through microplastics



Switch to reusable polypropylene boxes is promising in environmental terms.

## QUESTIONS



Can economic benefits drive the shift from polystyrene to polypropylene boxes while cutting down the environmental footprint of fish transport?

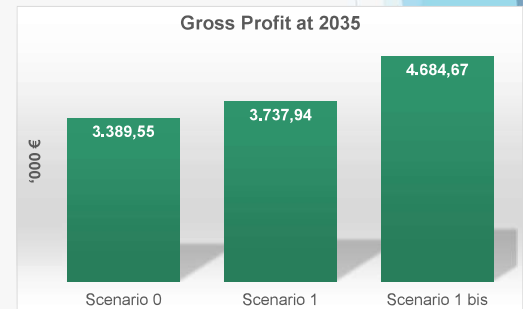
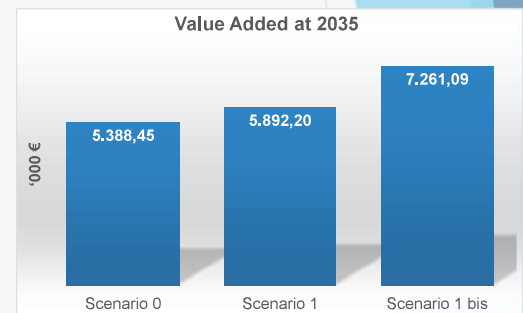
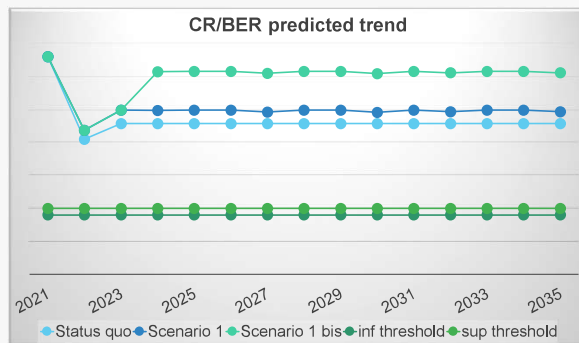


## RESULTS

### BEAM TRAWLERS VL18-40 ADRIATIC (GSAs 17&18)

- Scenario 0: status quo
- Scenario 1: replacement of boxes + purchase of washing machine at vessel's level (=higher costs year 1 for initial investments)
- Scenario 1 bis: Scenario 1+ premium price/sustainability labelling (= higher costs year 1 for initial investments+ higher incomes for expected higher prices)

**Profitability analysis:** the ratio between current revenue and break-even revenue (CR/BER) calculated for Scenario 1 and 1-bis is higher than that calculated for status quo level (=Scenario 0)



**Cost benefit Analysis:** the discounted value of Value Added and Gross Profit projected to 2035 for Scenario 1 and 1-bis are higher than those calculated for the status quo level (=Scenario 0)

## METHODS



Cost benefit-analysis simulated for multiple scenarios



The simulation model predicts trends in socio-economic variables and key profitability indicators.



Adapted from STECF (AER), BEMTOOL and MEPHISTO approaches.



Fleet-segments based simulations

## CONCLUSIONS

### Economic Benefits

- Decrease of operating costs in the long run
- The adoption of sustainable practices can lead to an increase in fish prices, as consumers are willing to pay more for sustainable products.

### Environmental Benefits

- Gradual elimination of disposable boxes with reusable and recyclable ones (avoiding the release of microplastics).

### Time for the system to be fully implemented

- The system requires time to come into full operation: need to implement a closed loop process for the boxes to come back to the "base" after use.
- The "base" will be determined by commercial decisions and existing practices (at local level)
- It is crucial to identify dedicated centers (the "bases") that handle logistics, including purchasing, washing, recovery, and transferring eco-boxes to producers and distributors.

### Key role of POs

- Aggregating supply and services becomes crucial to gain efficiency, in a context of generalised crisis for the sector
- POs can centralize logistical operations, achieving economies of scale that can reduce costs and improve efficiency.

### Opportunities from Funding Sources

- Availability of funding opportunities through FEAMPA to fund projects aimed at reducing the environmental foot-print of the fishing sector.

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