Salonicco, 04 June 2019

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Socio-economic Indicators

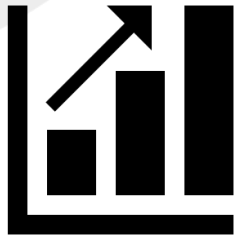
Overview of Indicators assessed in the last GFCM and STECF meetings on MAPs

Analysis of economic impacts of alternative management measures

FROM realistic short-term goals
to be carried out **before the 2020 SRC-AS**

- Shortlist of objectives by country

Additional data requirements



- Propose a methodology to carry out post-hoc economic analyses based on the outcomes of the existing biological MSE (i.e. estimated catch and SSB)

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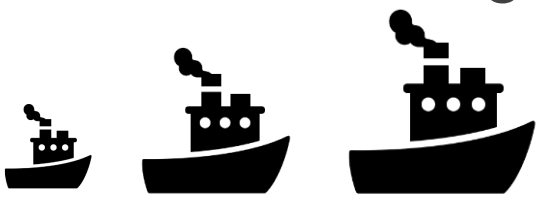
Analysis of economic impacts of alternative management measures – Adriatic Sea

TOWARDS more ambitious medium term ones
to be carried out **before the 2021 SRC-AS**

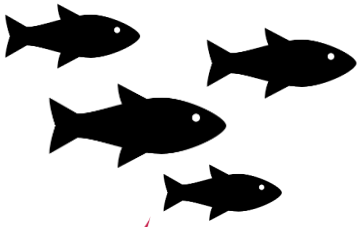
- ✓ Perform a case study analysis on a selected fleet (or part of a fleet) by country using available data,
need to integrate these results to the MSE (at stock level)

- ✓ Identify different fleets meaningful for the management of small pelagics in each country,
fleet characterization matrix at subregional level in the Med.

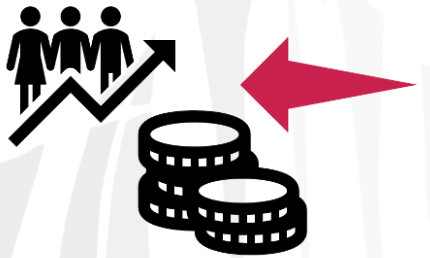


GFCM WKMSE, Small Pelagics

MINIMUM REQUIREMENT
OUTCOMES OF BIOLOGICAL MSE FRAMEWORK



ECONOMIC IMPACT
post-hoc assessment



Possible future integration of an economic component

ADVANCES - Parallel country-specific studies including:

- Market analyses e.g. on the fluctuations over time of maximum price by fleet
- Social analyses (e.g. employment)
- Identification of potential fleet units useful for management and to be included in the MSE (availability of the data)

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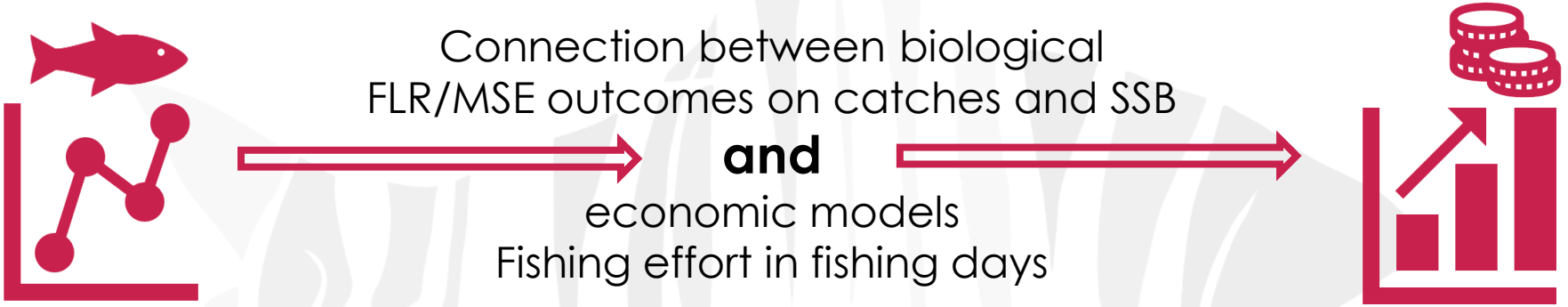
GFCM 2018 post-hoc analyses

Simulation of future changes in economic variables

- ✓ Main driver: change in catch quotas



For each fleet segment

- ✓ Maximum amount of days at sea/fishing vessel capped at **180 days**

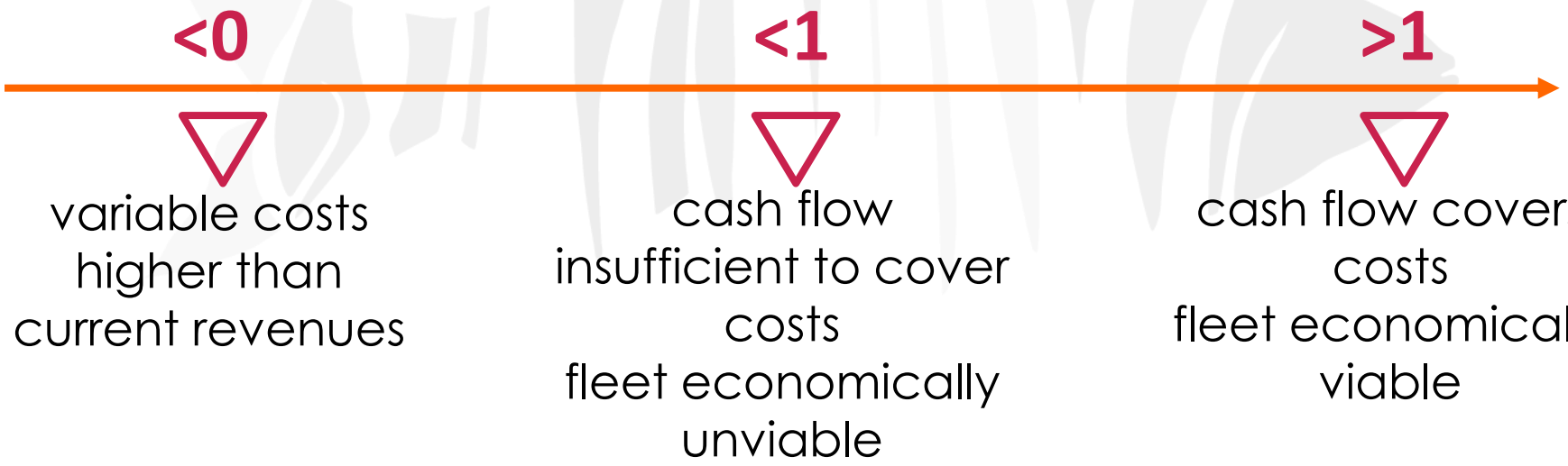
- ✓ Changes in fishing effort converted into changes in variable costs

GFCM 2018 post-hoc analyses

Indicator of the economic sustainability of a fleet

$$\frac{\text{Current Revenue (CR)}}{\text{Break-even Revenue (BER)}}$$

BER = revenues needed to cover both fixed and variable costs



Indication of the economic sustainability of the fishing fleet in the short-term (Rossetto M. et al. 2015).

GFCM 2018 post-hoc analyses

Net Profit Margin (NPM) indicator of profitability

$$\frac{\text{net profit}}{\text{revenues}}$$

Quota of revenues converted into profits.

The coincidence between vessel owners and crew (SSF) may impair a correct estimation of labour cost and of net profit (Rossetto M. et al. 2015).

GFCM 2018 post-hoc analyses

Return on Fixed Tangible Assets (ROFTA) and ROI (Return on Investment)

Measures of the efficiency of an investment

These indicators are estimated by **comparing net profits to the capital invested**:

- tangible assets: vessels, fishing gears and other equipment
- intangible assets: generally referred to the fishing rights

In the Mediterranean fishing sectors, where fishing rights exist just in few fisheries, ROI and ROFTA are generally equivalent

The low level of investments in Mediterranean fleets can produce unrealistic estimates of return of investment (Rossetto M. et al. 2015).

GFCM 2018 post-hoc analyses

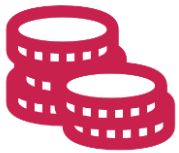
Social Indicators

Full-Time Equivalent (FTE)

Measure of employment: each unit is equivalent to a person working full time.

This indicator is preferred to the number of employees because most of the simulated scenarios are expected to impact on the number of working day rather than the number of vessels.

Average salary per employee



$$\frac{\text{Labour cost}}{\text{Number of employees}}$$

The level of salary is generally used as the **main social indicator** in the fishing sector

Economic Indicators

Economic dependency on the stocks

$$\frac{\text{Sum}_{\text{species of MAP}}\ (\text{weight} * \text{price})}{\text{Total revenues}}$$

1 = Full Dependency

0 = Not landed

Dependency is computed as the share in percentage of all MAP's stocks combined in the total value of each fleets' landing.

Fleets' contributions to total landings

$$\frac{\text{Weight}_{\text{stock}}}{\text{Total weight of stock}}$$

% of the total landings weight reported by Countries caught by the fleet.

Indicators about how management measures will affect vessel groups in terms of their economy and what effect these will have on managed stocks

STECF 19-02 MAP Demersals Adriatic

The economic component of the NIMED model was used to simulate the effects of the baseline scenario for the Adriatic Sea demersal fisheries.

Inputs to the model are the
total catches and
fishing mortality for each stock
(estimated through the a4a MSE tool).

Bio-economic simulation model (NIMED): GVA and salary

- ✓ **Gross Value Added** (GVA) represents the added value that the fishery contributes to the economy. GVA can be interpreted as a measure of the long-term profitability of the sector.

- ✓ **Salary**

A full mixed fisheries bio-economics set of tests were not possible to carry out: preliminary analyses.

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STECF Comments and WKMSE workplan Pelagics and Demersals Adriatic

GFCM WKMSE-AS discussed the work carried out by the STECF-19-02 expert group on Multiannual Plan for the fisheries exploiting demersal stocks in the Adriatic Sea

STECF considers that:

- ✓ **further work based on mixed fishery bioeconomic modelling** and
- ✓ **consultation with stakeholders**

would be needed to better understand the socio-economic implications of the proposed Multiannual Plan.

During GFCM Working Group on Management Strategy Evaluation MEDAC opinion has been requested on socio-economic indicators of management measures

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Questions to debate

What are your priorities?

What questions would you like answered?

What are your aims?

What indicators do you want to see estimated?

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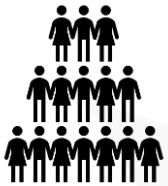
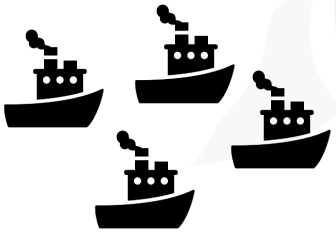
Towards assessing the potential socio-economic impact

Socio-economic impacts to be considered in the evaluation of management measures (opinion by some MEDAC members on small pelagics measures):



- On number of enterprises and workers:
trend of active enterprises/vessels/N° of workers (employees and self-employed), etc

- On profitability of enterprises
(trend of turnover, etc.) by fishery;



- On the fleet
(N° of inactive vessels, i.e. purse seiners and midwater trawlers for small pelagics, etc)

- On other activities
related to small pelagic fishery (processing etc.)

- On certain traditional activities

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Any other suggestion?

Indicators	Brief description
Indicator of the economic sustainability	Current Revenue (CR) /Break-even Revenue (BER)
Net Profit Margin (NPM) indicator of profitability	net profit / revenues
Return on Fixed Tangible Assets (ROFTA) and ROI (Return on Investment)	Measures of the efficiency of an investment estimated by comparing net profits to the capital invested
Economic dependency on the stocks	$Sum_{species\ of\ MAP}$ (weight * price) / Total revenues
Fleets' contributions to total landings	$Weight_{stock}$ / Total weight of stock
Gross Value Added	Added value that the fishery contributes to the economy
Social Indicators - FTE	Full-Time Equivalent (FTE)
Social Indicators - Average salary per employee	Labour cost / Number of employees
…	…

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Thanks for your attention!

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