

SOCIOEC

Improvements in Impact Assessment

Symposium – Brussels,
17-19 February 2015
Loretta Malvarosa, NISEA, Italy
SOCIOEC WP5 leader



Objectives of SOCIOEC WP5

WHAT
Determine social and economic effects of those management measures able to create the right incentives to tackle the main structural failings of the CFP

HOW
Impact Assessment (IA) analysis of measures to be applied in the new CFP. Basically an ex-ante evaluation, a) in terms of effects for already agreed measures, e.g. discard ban; b) in terms of policy decisions, for proposed measures, e.g. effort quota). Dual approach: qualitative and quantitative. Effects of uncertainties and externalities (e.g. oil price, interest rates).

MAIN RESULTS
Ranking (rating) of policy options based on the general evaluation criteria of effectiveness, efficiency and coherence (EU guidelines)

WHY?
Create a standard procedure for IA that could represent a useful and practical analytical tool to be used in future evaluations of fisheries management plans at EU level (e.g. STECF and ICES context)

SOCIO ECONOMIC EFFECTS OF MANAGEMENT MEASURES OF THE FUTURE CFP

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IA has been carried out in a number of case studies, covering different geographical areas, fisheries and management measures;

- all the EU regions (Baltic, North Sea, WW, Med) and non EU (Island);**
- different fisheries, from small scale to long-distant water, from demersal fisheries to pelagic;**
- different management measures: already implemented (but subject to change) , to be implemented but not still know as far as the effects (e.g. landing obligations), proposal of brand new options (e.g. effort quota in the Med).**

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the economic cost of regulation (17). The project findings highlighted the main factors - administrative cultures, institutional routines, political settings etc. - limiting the ability of IA to realise its full potential but also identified many practical ways of improving the practice of IA in relation to issues such as methodology, quality assurance, and integration.

The recent improvements and development around the IA methodologies go more and more toward the concept of a Sustainability Impact Assessment (SIA). An SIA has two main functions: a) it is a methodological soft policy instrument for developing integrated policies which take full account of the three sustainability development dimensions and which include cross-cutting, intangible and long-term considerations; and b) a process for assessing the likely economic, social and environmental effect of policies, strategies, plans and programmes *before* they have been formulated (*ex ante*) (16).

The SIA should be based on some key principles, of which the most important are:

- The three sustainable dimensions integrated into the analysis; considering short and long-term effects; considering the spatial impacts and possible conflict among global, regional and local objectives;
- Considering also "soft" forms of analysis (risk that "hard" methodologies, i.e. cost-benefits and other quantitative form of analysis, prevail on qualitative forms, especially when taking into account environmental and social considerations);
- Stakeholder involvement: increases awareness of the wider implications of policies and counterbalance the methodological limits of monetising impacts.

The most integrated SIA system is, at now, that proposed by the European Commission (10), the result of a public consultation held in 2008. The final result is the current system of EU impact assessment guidelines of 15 January 2009 (4). The EU IA system is

- *focus group* (stakeholder involvement in the different steps: definition of the nature and the scale of the problem, definition of main objectives, identification of potential policy measures able to reach those objectives)
- incentives analysis
- pre-screening of potential effects inputs for quantitative analyses (main features of scenario, potential externalities, etc.....)



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- Participatory tools: tools that provide broad input by stakeholders and outside experts (e.g. Delphi surveys, focus groups, etc.)
- Scenario tools: tools that develop alternative visions of the future developments or trends (e.g. trends analysis, simulations, foresight exercise, etc.)
- Multi-criteria analysis (MCA): tools that allow joint consideration of criteria based on different measurements units (e.g. analytic hierarchy process, preference rankings, weighted summation, etc.)
- Cost-benefit analysis (CBA): tools that assess financial and economic parameters in comparing costs and benefits (e.g. cost-benefit analysis, cost-effectiveness analysis – CEA)
- Accounting tools: tools that present physical as well as economic and other attributes (e.g. indicator sets, measure of well-being, ecological footprints, etc.)
- Models: tools that simulate real-world processes (e.g. general equilibrium models, demographic models, climate models, bio-economic models, etc..).

The selection of the assessment tools should be based on: 1) the stage of the assessment; 2) the depth of the assessment; 3) the tasks to be completed; 4) the tool group most suited to the task; and 5) the available resources. Often combinations of tools are needed for an integrated assessment (10).

- definition of the analysis set by sub-CS (objectives, indicators, TRP or LRP, models to be used)

What if?

- simulations by mean of a scenario approach
- sensitivity analysis (main external factors, e.g. fuel price, interest rate, etc....)



Case study region	Sub-case study fishery	Innovative management measure to be evaluated	Dimension of objectives	Objectives in relation to the measure (ecological, economic, social).	Indicators in relation to the objectives (ecological, economic, social)	Reference levels	Limit (LRP) or target reference point (TRP)	Tool / Model Used for simulations
Mediterranean and Black Sea	Demersal trawler fishery in GSA 17 (IT)	Effort Quota	Ecological	MSY for main target species	F	Fmsy	TRP	HDA models
			Economic	Economic viability	EBIT	>=0	LRP	
Social	Sector attractiveness	RoFTA		>=long-term government bonds rate	LRP			
		Social stability (wage level)	Average crew remuneration	>=average wage	LRP			
		Demersal trawl fisheries in GSA 22 (GR)	Discard reduction, spatiotemporal shifts in Effort; Effort Quota					BEMMTOOL
Baltic	All Danish western Baltic Fishery (potentially German fishery) for vessels above 12 m	Closures according to EU Directives: Windmill farms (energy-directive), fishery closures (CFP), Nat2000 (MSFD)						DISPLACE
	German fisheries around the island of Fehmarn (mostly below 15m)	Closures due to environmental causes, management based on effort alone (no quota restriction) for small vessels						None
North Sea	Regional demersal fisheries	catch quota/landings quota/discards ban; mixed fisheries HCR						FCUBE
	Flatfish fishery	Co-management in relation to ITQ						FISHRENT
	North Sea mixed demersal fisheries	Discard ban, effort management, capacity assessment						FISHRENT
	Bay of Biscay sole fisheries (FR)	Management plan towards MSY, TAC/HCR scenarios with co-management, IQ or ITQ and various scenarios of initial allocation of quotas						IAM
Western waters	Basque trawlers in ICES Areas VI, VII and VIIIabde	ITQ, DISCARDS = 0, SELF MANAGEMENT (quota allocation) within the PO umbrella, TAC increase, DECOMMISSIONING SCHEMES (SCRAPPING SUBSIDIES)						FISHRENT
	Basque purse seiners in the Bay of Biscay	IQ (Bluefin tuna), INDIVIDUAL DAILY LIMITS (anchovy), LABELS/CERTIFICATION (Anchovy and Albacore), PELAGIC RAC and SWWRAC (Anchovy long term management plan)						FISHRENT
	Eastern channel flatfish mixed fisheries (FR)	TAC+HCR; ITQs; Discard restrictions (+incentives)						ISIS-FISH
Pelagic	North East Atlantic (supra-area 27, area 2a, 4a, 4b, 4c, 6a, 7b, 7j).The Danish, British, Irish, Norwegian and Icelandic pelagic fisheries for mackerel and herring	An ITQ system across countries						IMPSEL
	Mackerel Fishery in BoB	Daily limits, Landings control (of daily limits)						Econometric model and/or FISHRENT
Non-EU fisheries	Icelandic inshore handline fishery	Effort restriction (days at sea); overall TAC and open acces, and quota restrictions (ITQs)						ICEFISH



External factors	Factors 0	Factors 1			Factor n
Alternatives					
Alternative 0	Scenario 0.0 (baseline scenario)	Scenario 0.2	.....	.....	.....
Alternative 1	.....	.....	.....	.....	.....
.....
Alternative n	.....	.....	.....	.....	Scenario $n.n$

MAIN RESULTS

Ranking (rating) of policy options based on the general evaluation criteria of effectiveness, efficiency and coherence (EU guidelines)

WHY?

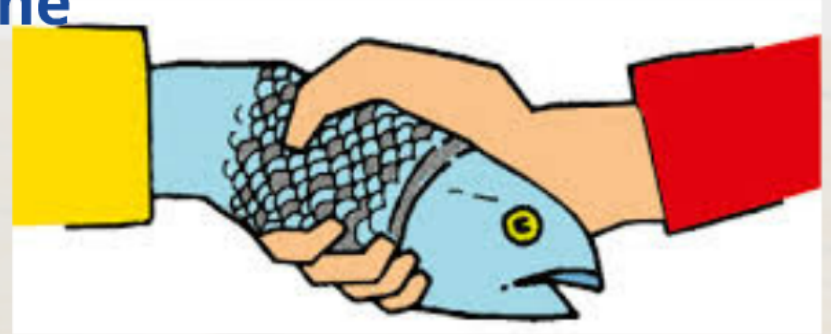
Create a star

EU guidelines (2009) on IA suggest that policy options, potentially able to achieve the same objectives, should be (ex-ante) evaluated and compared in order to rate, rank them and choose the most appropriate option. The guidelines on IA suggest:

- to evaluate policy options against the main criteria of *Effectiveness, Efficiency and Coherence* (and explain how they have been applied) and, in case of regulatory instruments, also in terms of *Acceptability/Compliance*;
- compare the options against the baseline scenario
- present a summary overview for the options that have been analyzed.

The aim of the SOCIOEC project has been to provide policy makers with a user-friendly procedure able to give them the necessary information to evaluate (*rate*) the different management measures proposed: ranking (selection of the best one) it's up to policy makers.

Acceptability/Compliance: the extent to which key stakeholders are likely to accept the management measures and for fishermen also the extent to which they could comply with them.









- Without acceptance and compliance, it is likely that objectives will not be achieved.
- Evaluation to be carried out with stakeholders involvement and by taking into account results from simulations (i.e. impact on wages can potentially reduce compliance of fishermen)
- No specific methodology developed: criterion inserted last minute in the analysis. Conclusions left to personal expertise, desk reviews, feedback from key stakeholders and from main results of simulations.

Effectiveness: the extent to which the main specific objectives set by policy makers (in consultation with stakeholders) in terms of resources', economic and social sustainability are achieved



- development of indicators measuring the entity of the objectives' achievement
- indicators differing according to the use of TRP or LRP
- measuring achievement of objectives in all the domains (biological, economic and social)

Formula for TEI (example for F)	Value of TEI	TRP<current value	TRP>current value	Graphical visualisation
		Meaning		
$TEI = \frac{(F - F_{curr})}{(F_{msy} - F_{curr})}$	TEI≤0	Results deriving from the (simulation of the) implementation of the new measure is worse or equal to the baseline scenario and worse than the TRP (result≥ current>TRP)	Results deriving from the (simulation of the) implementation of the new measure is worse or equal to the baseline scenario and worse than the TRP (results current<TRP)	
	0<TEI<1	Result deriving from the (simulation of the) implementation of the new measure is better than the current value even if the target has not been already achieved (TRP<result<current)	Result deriving from the (simulation of the) implementation of the new measure is better than the current value even if the target has not been already achieved (current<result<TRP)	
	TEI≥1	Result deriving from the (simulation of the) implementation of the new measure is better than or equal to the target and better than the current, hence objective has been largely achieved (results TRP< current)	Result deriving from the (simulation of the) implementation of the new measure is better than or equal to the target and better than the current, hence objective has been largely achieved (current<TRP≤ result)	
Formula for LEI (example for EBIT)	Value of LEI	Meaning		Graphical visualisation
<p>1) A: IF (Result >= LRP) then "1" ELSE "-1"</p> <p>2) B: IF (Result >= EBIT curr) then "1", ELSE "-1"</p> <p>3) LEI: IF A = 1, then "1", ELSE IF B = 1, then "0", ELSE "-1".</p>	LEI=-1	Result deriving from the (simulation of the) implementation of the new measure is worse than the current value and worse than the LRP (Result <LRP and Result < current)		
	LEI=0	Result deriving from the (simulation of the) implementation of the new measure is higher than the current value even if still lower than the LRP. This reflect a still negative situation (LRP has not yet been overcome) even if characterised by a positive trend (Result <LRP and Result >= current)		
	LEI=1	Results deriving from the (simulation of the) implementation of the new measure is higher or equal to the LRP. This reflect a completely positive situation as LRP has been overcome (Result >= LRP and Result >= current or Result <EBIT curr)		

Efficiency: the extent to which objectives can be achieved for a given level of resources/at least cost, i.e. the best relationship between resources employed and results achieved

- Cost-Benefit analysis;
- industry perspective (cost and benefits for the sector)
- NPV of gross profit or EBIT;
- medium and long-term time horizon (according to case studies)



Coherence: the extent to which management options are coherent with the overarching objectives of EU policy and other existing measures, *and the extent to which they are likely to limit trade-offs* across the economic, social, and environmental domains

- what makes fisheries management so difficult, most of the time, is the existence of conflicting objectives;
- the political task of fisheries managers is to come up with a set of management measures to achieve an agreed, *optimal balance of objectives*
- in an ex-ante IA effectiveness evaluation as a preliminary step to coherence evaluation



Presenting results: the Comparison and Decision table

- "information should be presented clearly and in an easily understandable manner. One of the more useful ways in which information can be presented to facilitate **comparison and decision-making is in a decision table** (Cochrane and Garcia, 2009)"
- "A well-structured and complete decision table will not only summarise and present key results from the analyses, but can also serve **to remind the decision-makers of their operational objectives and how different management strategies perform against each of them**"

Policy Options	Acceptability	Effectiveness	Efficiency	Coherence
Management option 0 – Status Quo	Low compliance with	Negative biological indicators and positive social indicators. Far from economic targets but above the economic minimum levels.	The NPV of the profit is positive.	Bad balance of positive impacts (reduction of overcapacity) and negative impacts (compliance with the regulation, biological indicators).
Management option 1. External factor 0.	Improvement of the compliance with	Positive social and biological impacts but negative impact on the economic dimension.	Similar NPV than in the Status Quo.	Bad balance of positive impacts (compliance with the regulation, biological indicators) and negative impacts (economic and social dimensions)

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Main outcomes of SOCIOEC WP5

- **definition of a best practice, step by step, in line with EU formal requirements;**
- **importance of stakeholders involvement in the different steps, from the identification of the problem to the evaluation of results from simulation;**
- **IA essential for policy development: more focus on the ex-ante evaluation, needed for an appropriate fishery management;**
 - **simulations serving effectiveness and coherence evaluation;**
- **coherence evaluation essential for reducing trade-off after implementation;**
- **acceptability evaluation essential to avoid lack of compliance and hence non achievement of objectives**

Thank you for the attention

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BERMIO

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