

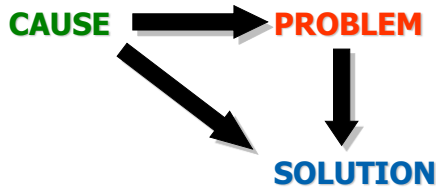
Socio-economic aspects of fisheries management

Presentation to the Pelagic RAC
Sébastien Metz
Leiden, 20 April 2009

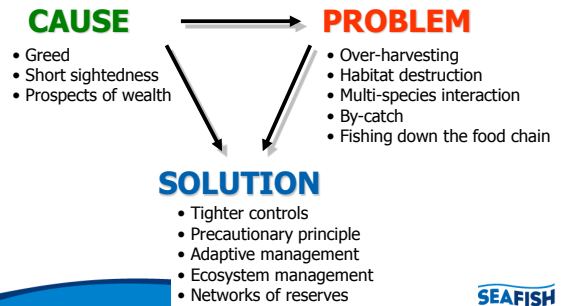
Fisheries science versus Fisheries economics

- Fisheries science - "How do we fish?"
 - Mortality
 - Mesh size
 - Catch rate
 - Landings
- Fisheries economics - "Why do we fish?"
 - Market value of catch
 - Profit
 - Because "this is our life"
 - One of the central questions: **what is the objective of fishing?**
Why do we regulate fisheries?

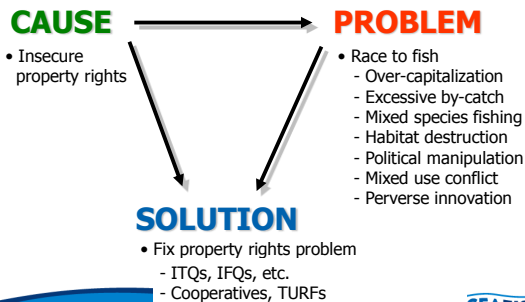
The fisheries problem (from Wilen 2005)



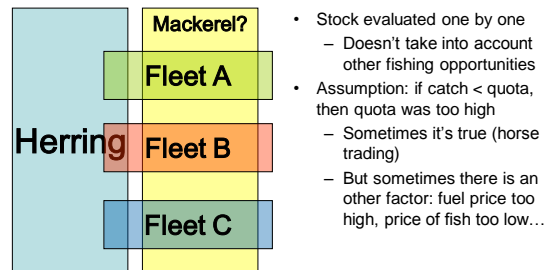
How does **fisheries science** characterise the fisheries policy problem?



How does **economics** characterise the fisheries policy problem?

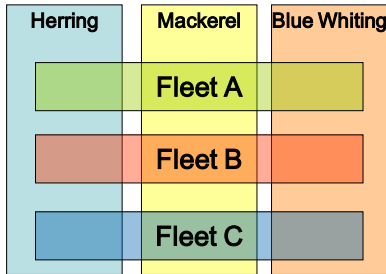


Current evaluation process



- Stock evaluated one by one
 - Doesn't take into account other fishing opportunities
- Assumption: if catch < quota, then quota was too high
 - Sometimes it's true (horse trading)
 - But sometimes there is an other factor: fuel price too high, price of fish too low...

A better (and more complicated) approach could be...



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What is the objective?

- Is it about communities (employment, local businesses...)?
 - Maximise employment?
- Is it about food harvesting?
 - Maximise catch (MSY)?
- Is it about business management?
 - Level of profit?
 - Return on investment?
 - Constant supply vs variable supply?



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Reply from EC to P-RAC

Based on ICES biological assessments and stochastic future time-streams of TACs and fishing effort, STECF is requested to evaluate probable future trends in :

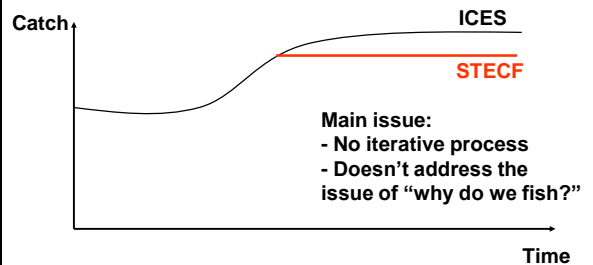
- catches and the value of those catches;
- fishing effort in terms of vessel numbers, activity and kWh deployed, and the costs (both fixed and variable) of deploying such effort;
- employment associated with this activity
- net revenue from the resource
- if possible, additional incidental impacts on populations of other marine organisms.

Such trends should be contrasted with the probable consequences of continuing to fish the stock according to rates of fishing mortality as recently experienced, or according to ICES advice according to the precautionary approach.



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What does this mean?



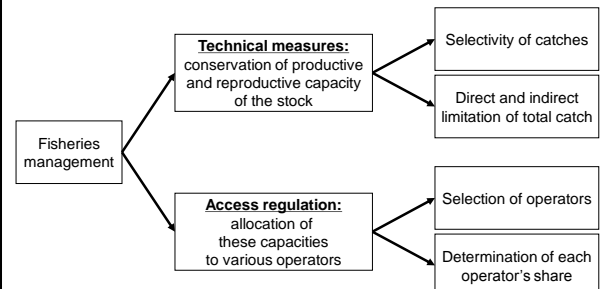
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Input – Output study: impacts of removing the sea fishing and fish processing sectors

Source: SEAFISH, "The economic impacts of the UK sea fishing and fish processing sectors: an input-output analysis"

		GDP change (£m)	%change in GDP	Employment (FTEs)
Sea fishing	Demersal	-319.2	-0.04%	-12,939
	Shellfish	-217.5	-0.02%	-13,106
	Pelagic	-136.2	-0.01%	-2,654
Fish processing	Demersal	-2,630.4	-0.29%	-82,985
	Shellfish	-1,435.9	-0.16%	-48,263
	Pelagic	-284.9	-0.03%	-6,624
All fishing sectors		-672.7	-0.07%	-28,691
All fish processing		-3,891.1	-0.43%	-118,320
All sea fishing and fish processing sectors		-4,342.2	-0.48%	-137,601

Fisheries management (from Boncoeur & al 2003)



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Objective	Control Method	Control Variable	
		Effort	Catch
Maintaining productive & reproductive capacity of stocks	Administrative regulation	- Mesh size	- Size and sex selectivity
		- Size/amount of gear	-TAC
Regulation Access	Administrative regulation	- Individual non-transferable effort quota	- IQ
		- TURFs	- Community based quota
	Economic market-based	- Transferable licence	-ITQ
		- Individual transferable effort quota (ITE)	
Economic non market based	- Input tax	- Landing tax	
	- Subsidy	- Subsidy	