

# MEFEPO

Making the European Fisheries Ecosystem Plan Operational (MEFEPO)

## DEVELOPING AND IMPLEMENTING FISHERIES ECOSYSTEM PLANS

MEFEPO Symposium  
Brussels October 2011

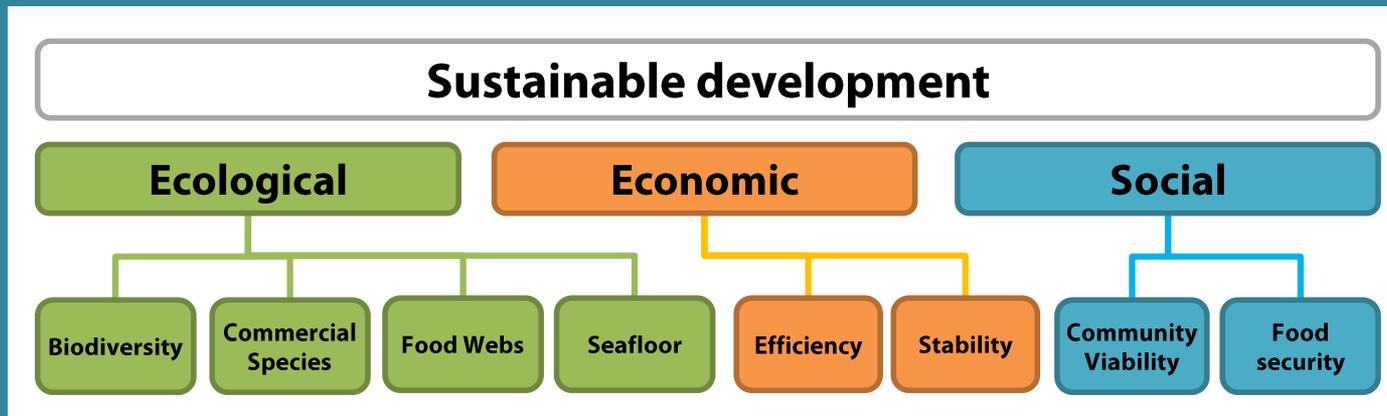
Helen Bloomfield and Chris Frid  
University of Liverpool

# OVERVIEW

- Practical steps in applying the management strategies matrix approach
- Building the management strategies matrices
- Introduction to the regional case studies
- Lessons learnt and next steps

# RECAP

- Approach to integrate and combine data on ecological, social and economic pillars
- Assist managers to simultaneously consider the ecological, economic and social implications of management decisions



# MANAGEMENT STRATEGIES MATRIX

Management Strategy	Ecological		Economic			Social		
	Biodiversity	Commercial Fish	Seafood Integrity	Food-web	Efficiency	Stability	Community Viability	Food Security
A. Strategy A								
B. Strategy B								
C. Strategy C								
D. Business as Usual								

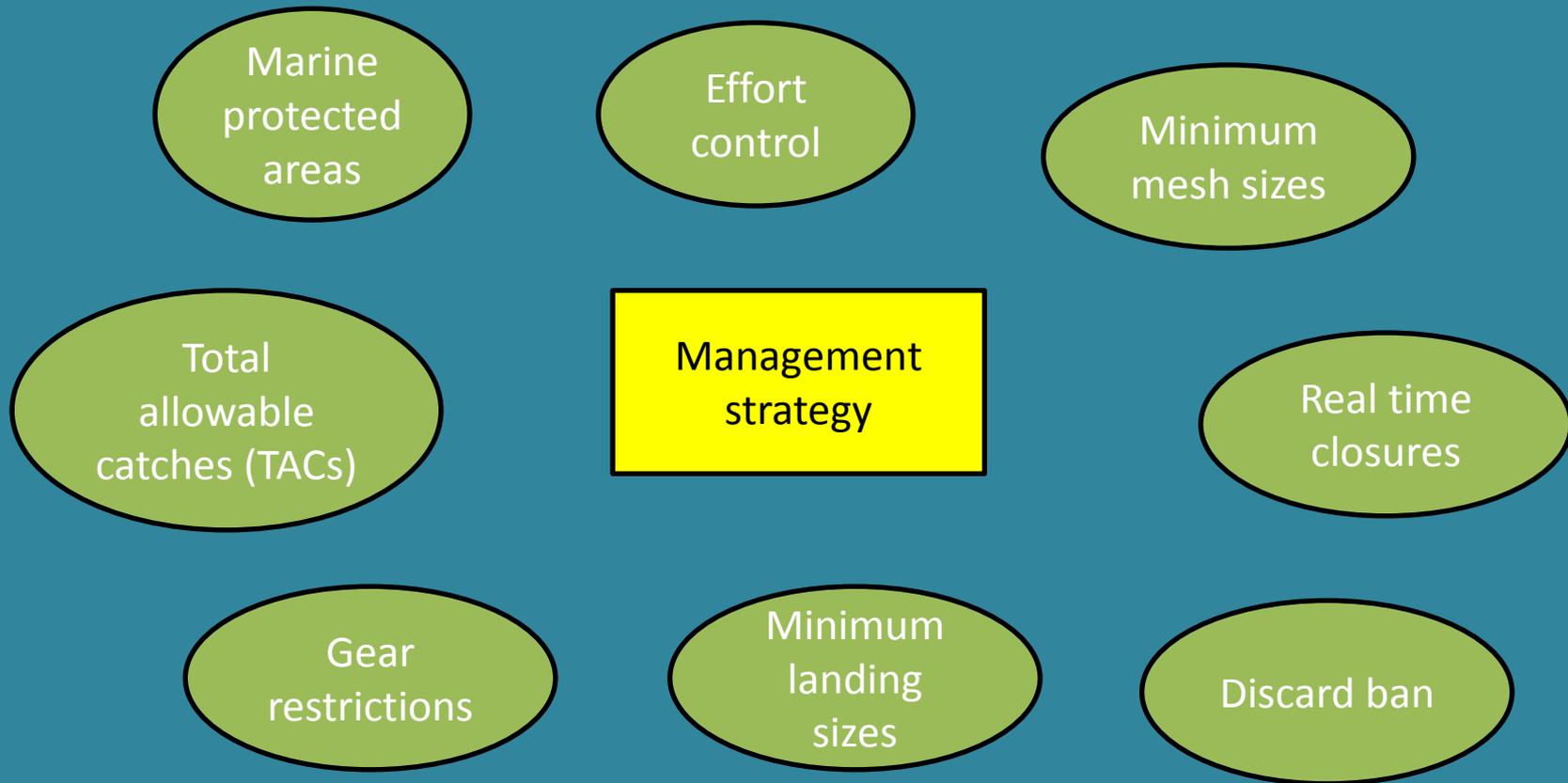
**Predicted change in status of descriptor**

- Improvement
- Stable (no change)
- Deterioration
- Outcome unknown

- Predicted performance of management strategies
  - Impact on marine environment and coastal communities

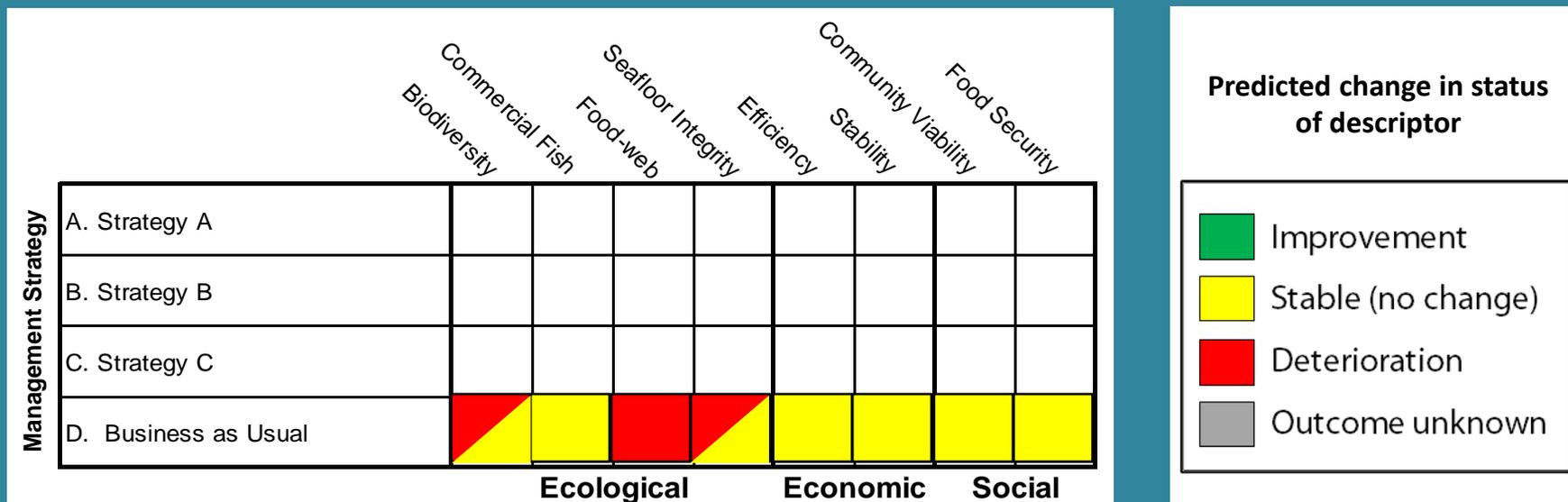
# MANAGEMENT STRATEGIES....

....what might they look like?



# EVALUATING PERFORMANCE....

....current management (business as usual)



- Best available evidence
  - Modelled, empirical, expert judgement



# EVALUATING PERFORMANCE

## Assumptions

- ▶ Timeframe: 5-10yrs
- ▶ Partial assessment: based on changes in one (or a few) selected measures
- ▶ Constant surroundings: all external factors assumed to remain constant

Linkages: ‘Commercial fish’ and ‘Food security’  
‘Efficiency’ and ‘Community Viability’



INNOVATIVE FISHERIES MANAGEMENT  
- an Aalborg University Research Centre



IPIMAR

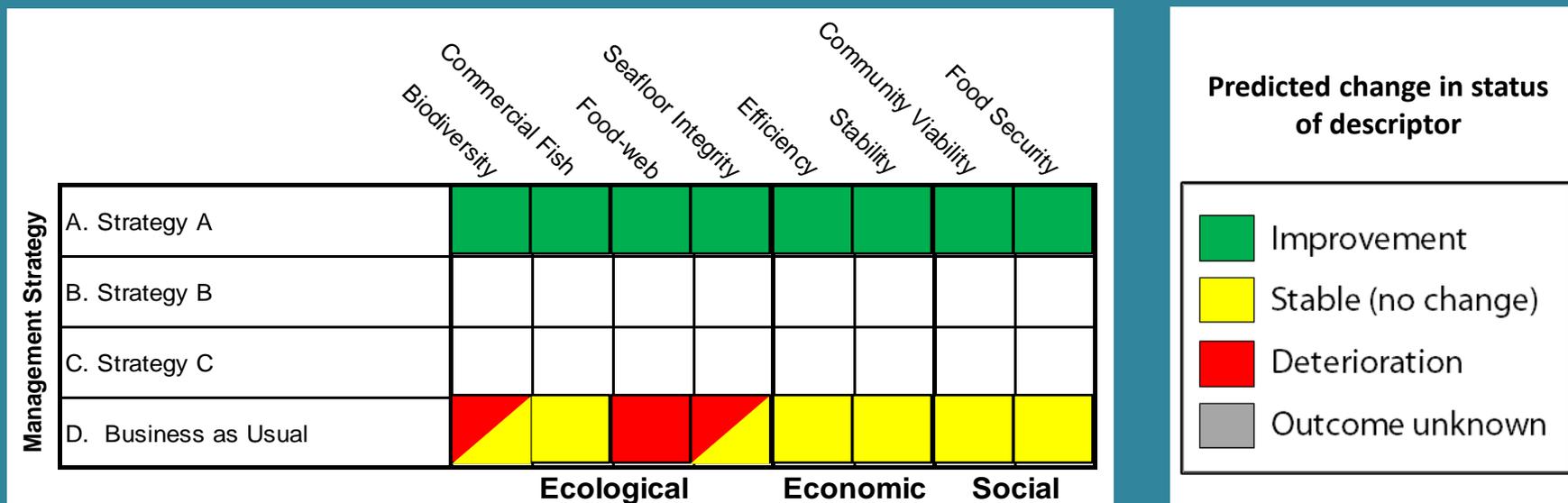


INSTITUTO  
ESPAÑOL DE  
OCEANOGRAFÍA



# EVALUATING PERFORMANCE....

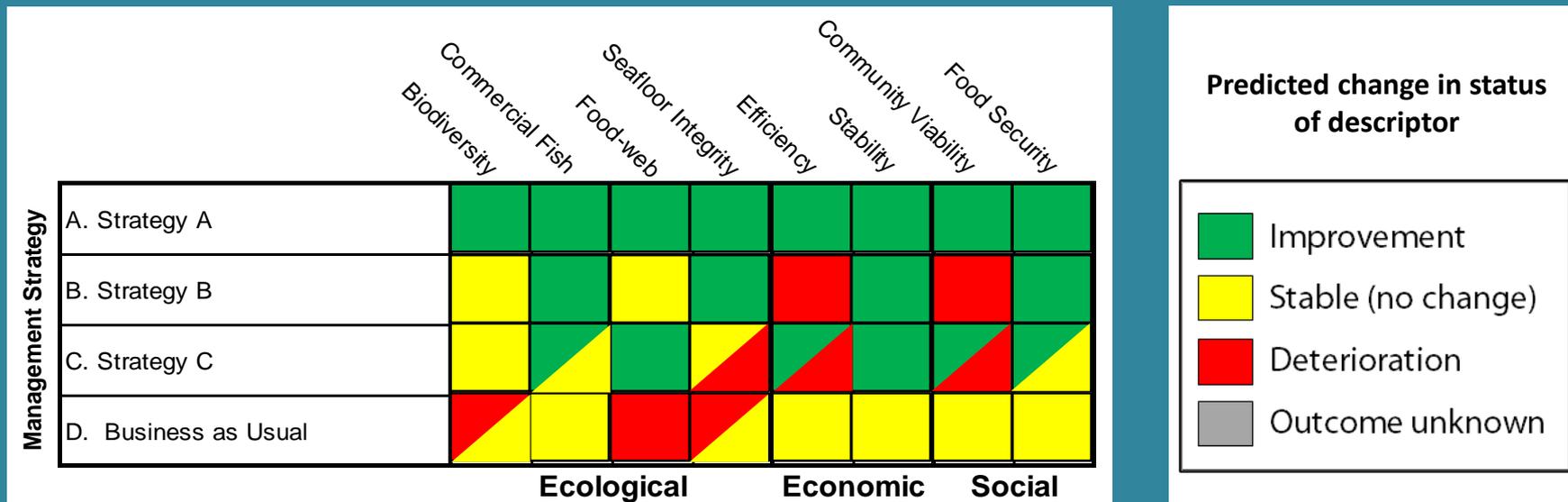
....decision makers dream



## HIGHLY UNLIKELY!

# EVALUATING PERFORMANCE....

....alternative management strategies



## TRADE-OFFS AMONG PILLARS



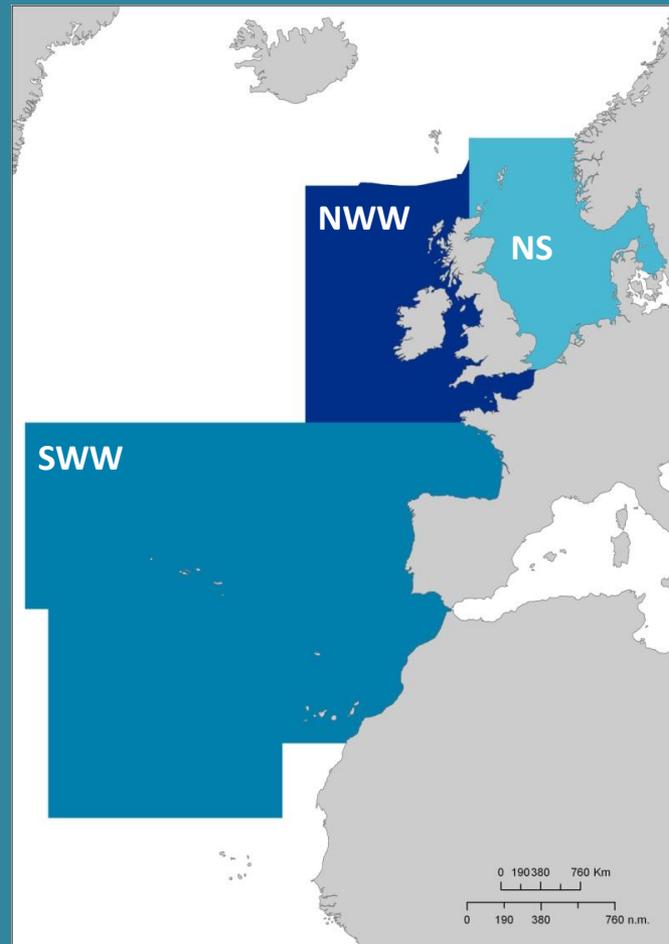
# REGIONAL CASE STUDY EXAMPLES

## North Western Waters

*Nephrops*  
Scallops  
NE Atlantic mackerel  
Northern hake

## South Western Waters

Iberian purse seine  
Mixed demersal line  
Mixed demersal trawl  
*Nephrops*



## North Sea

Mixed flatfish beam trawl  
Herring pelagic  
Cod-otter trawl  
(Sandeel industrial)

## Case study fisheries

Pelagic  
Demersal  
Shellfish  
Industrial



INNOVATIVE FISHERIES MANAGEMENT  
- an Aalborg University Research Centre



INSTITUTO ESPAÑOL DE OCEANOGRAFIA



# REGIONAL CASE STUDY EXAMPLES: today

## North Western Waters

*Nephrops*

**Scallops**

NE Atlantic mackerel

**Northern hake**

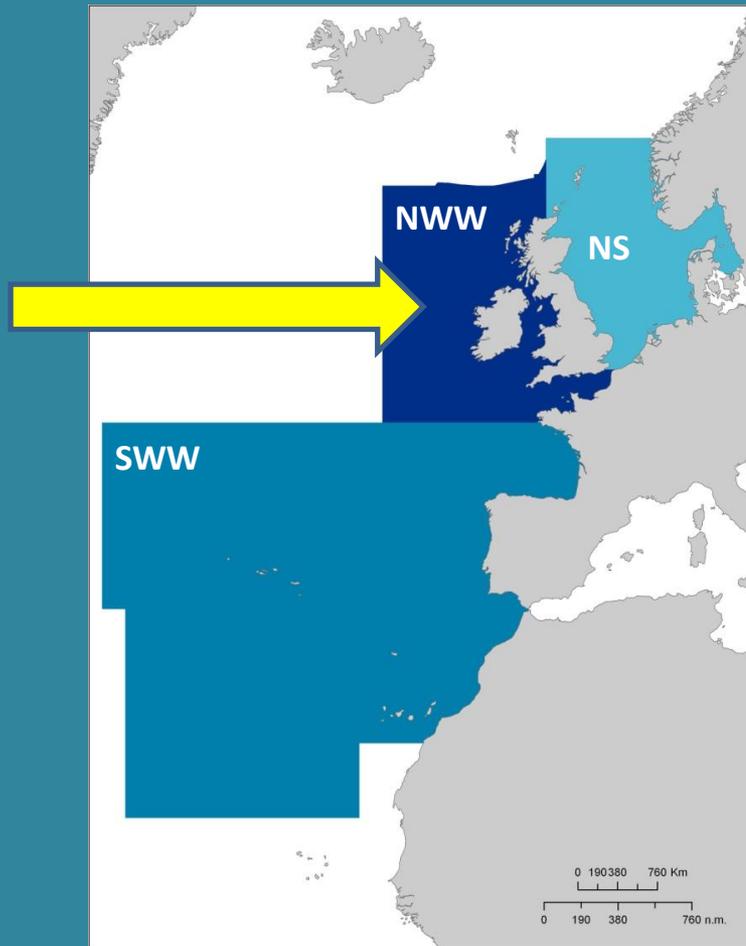
## South Western Waters

Iberian purse seine

Mixed demersal line

Mixed demersal trawl

*Nephrops*



## North Sea

Mixed flatfish beam trawl

Herring pelagic

Cod-otter trawl

(Sandeel industrial)

## Case study fisheries

Pelagic

Demersal

Shellfish

Industrial



INNOVATIVE FISHERIES MANAGEMENT  
- an Aalborg University Research Centre



université  
de Bretagne  
occidentale



INSTITUTO  
ESPAÑOL DE  
OCEANOGRAFÍA



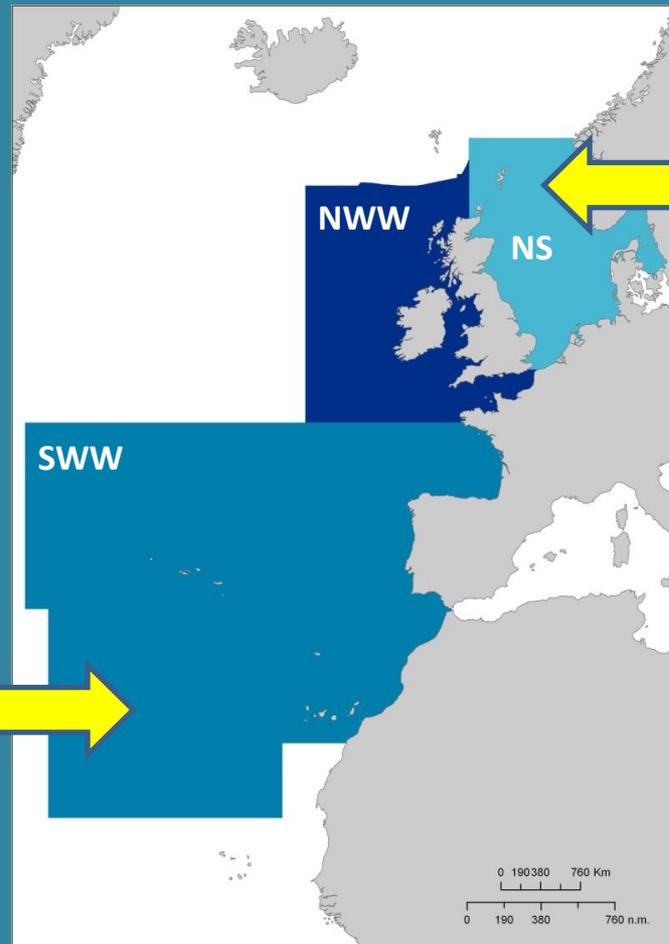
# REGIONAL CASE STUDY EXAMPLES: tomorrow

## North Western Waters

*Nephrops*  
Scallops  
NE Atlantic mackerel  
Northern hake

## South Western Waters

**Iberian purse seine**  
Mixed demersal line  
**Mixed demersal trawl**  
*Nephrops*



## North Sea

**Mixed flatfish beam trawl**  
**Herring pelagic**  
Cod-otter trawl  
(Sandeel industrial)

## Case study fisheries

Pelagic  
Demersal  
Shellfish  
Industrial



INNOVATIVE FISHERIES MANAGEMENT  
- an Aalborg University Research Centre

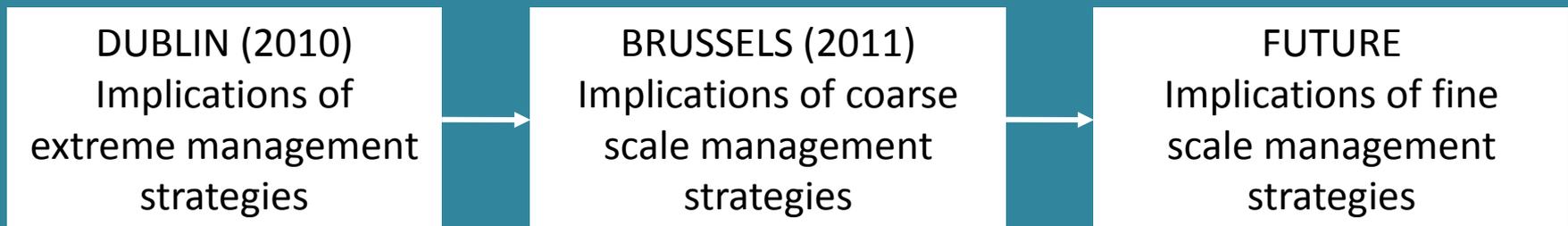


INSTITUTO  
ESPAÑOL DE  
OCEANOGRAFÍA



# CASE STUDY EXAMPLES

- Demonstrate application of the management strategies matrix approach
  - Incorporating data on the 3 pillars
- Predicted change in descriptor status
- Consider trade-offs among pillars



# MANAGEMENT STRATEGIES MATRIX DO NOT PROVIDE THE “ANSWER”

- Do provide a synoptic overview
- BUT management decisions will be based on overarching objectives & may not be possible to satisfy all stakeholder groups simultaneously
- Management strategy matrix can support decision making

# DEVELOPING FEPs: Lessons learnt

- Examples, not definitive assessments
- Nature of trade-offs within and among pillars differs among case studies but consistent features of different fisheries across regions
- Gaps in knowledge and understanding
  - Social and economic descriptors need further scrutiny and development
- Descriptor importance may be context specific

# NEXT STEPS

**Long Term  
Management Plans  
(LTMPs)**

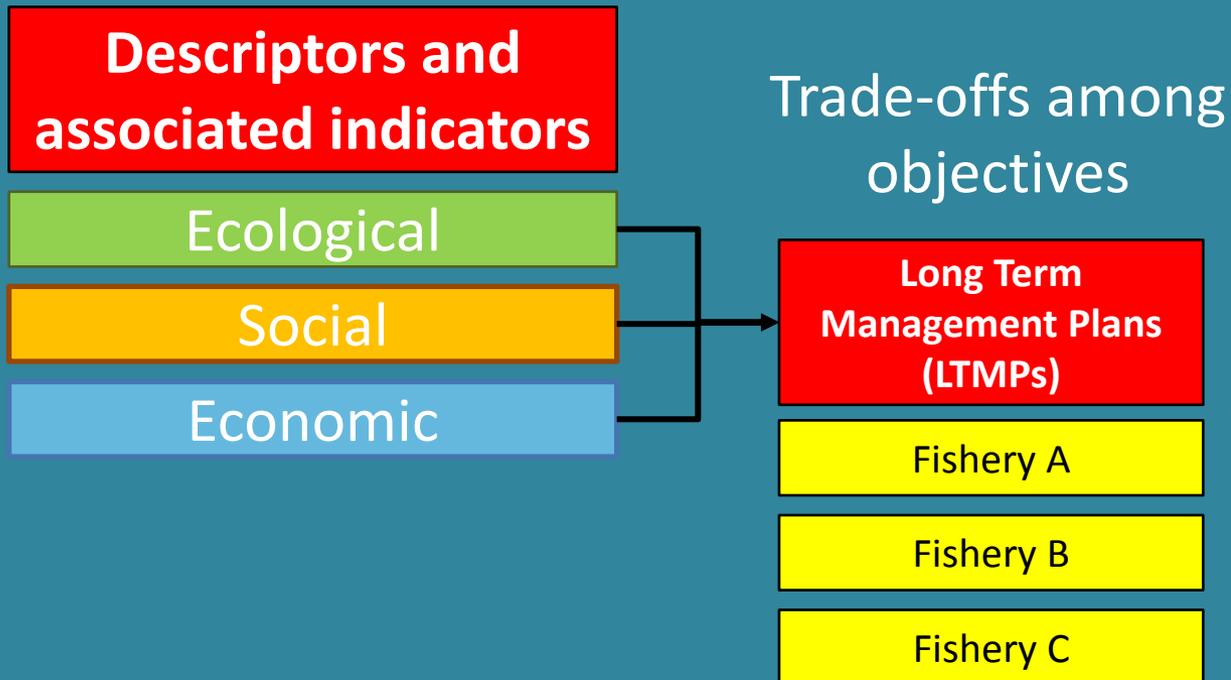
Fishery A

Fishery B

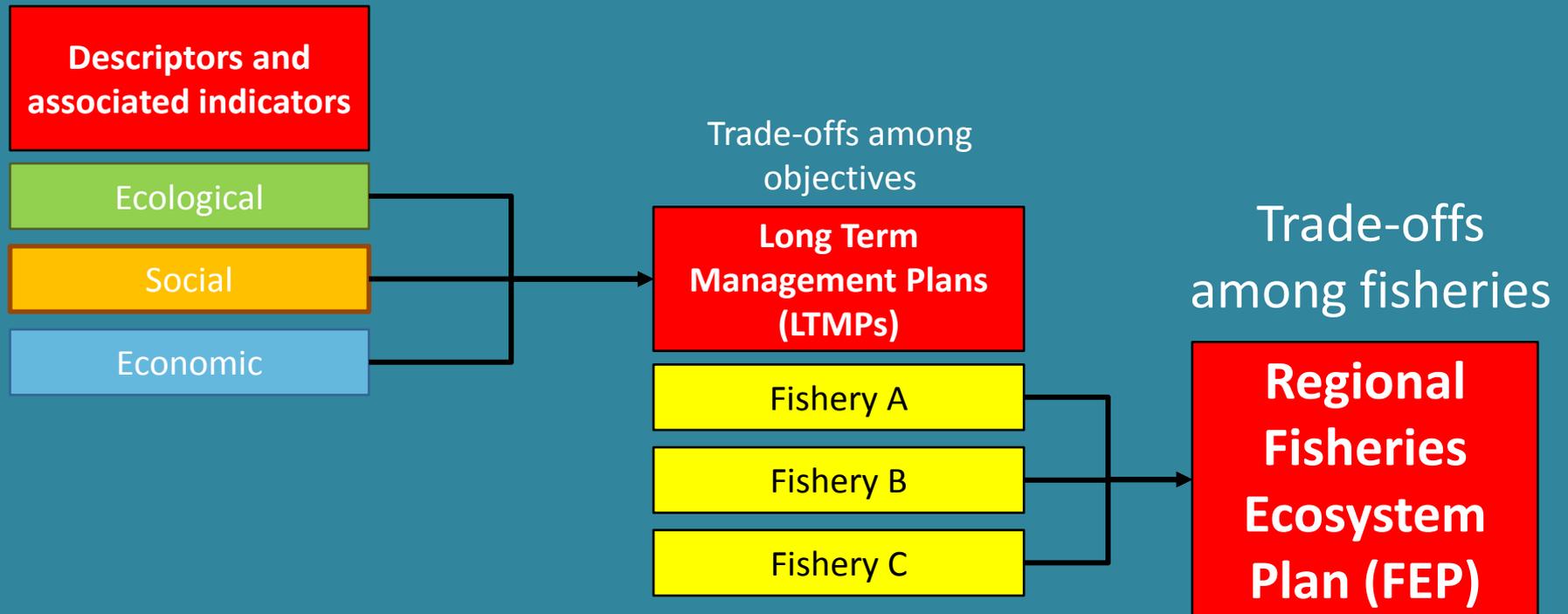
Fishery C



# NEXT STEPS

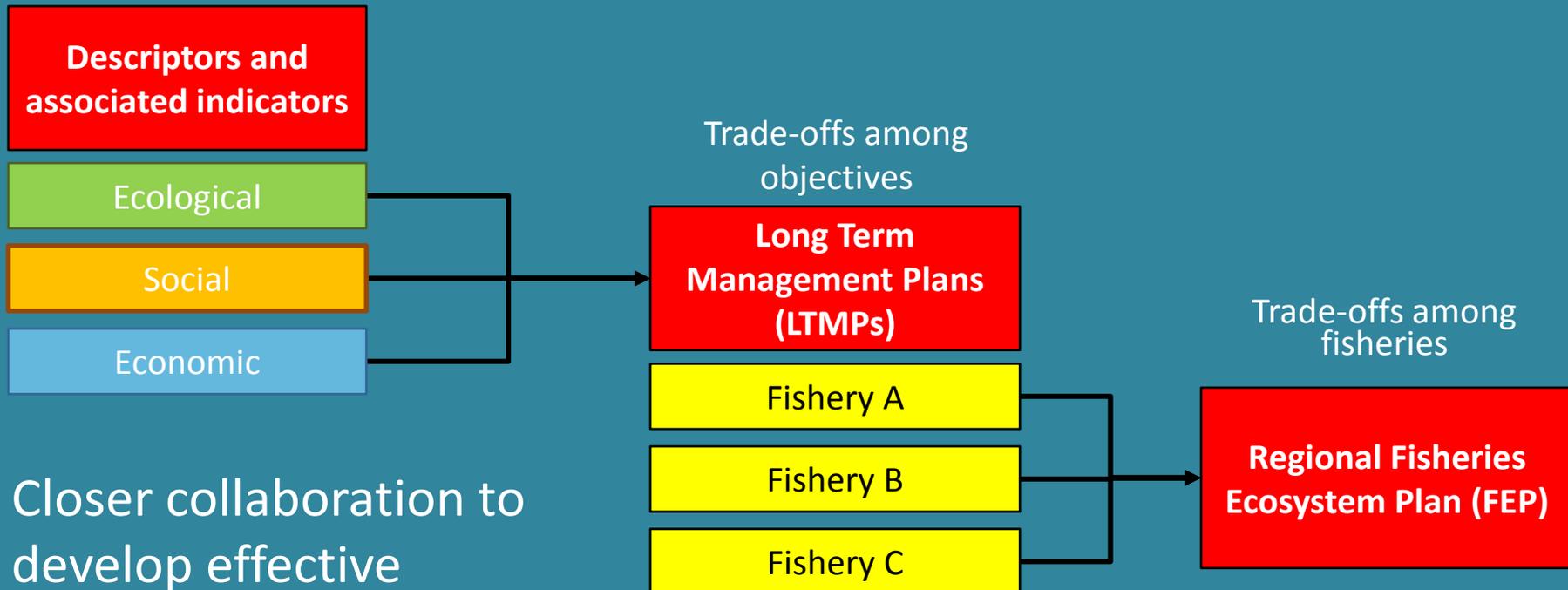


# NEXT STEPS



# NEXT STEPS

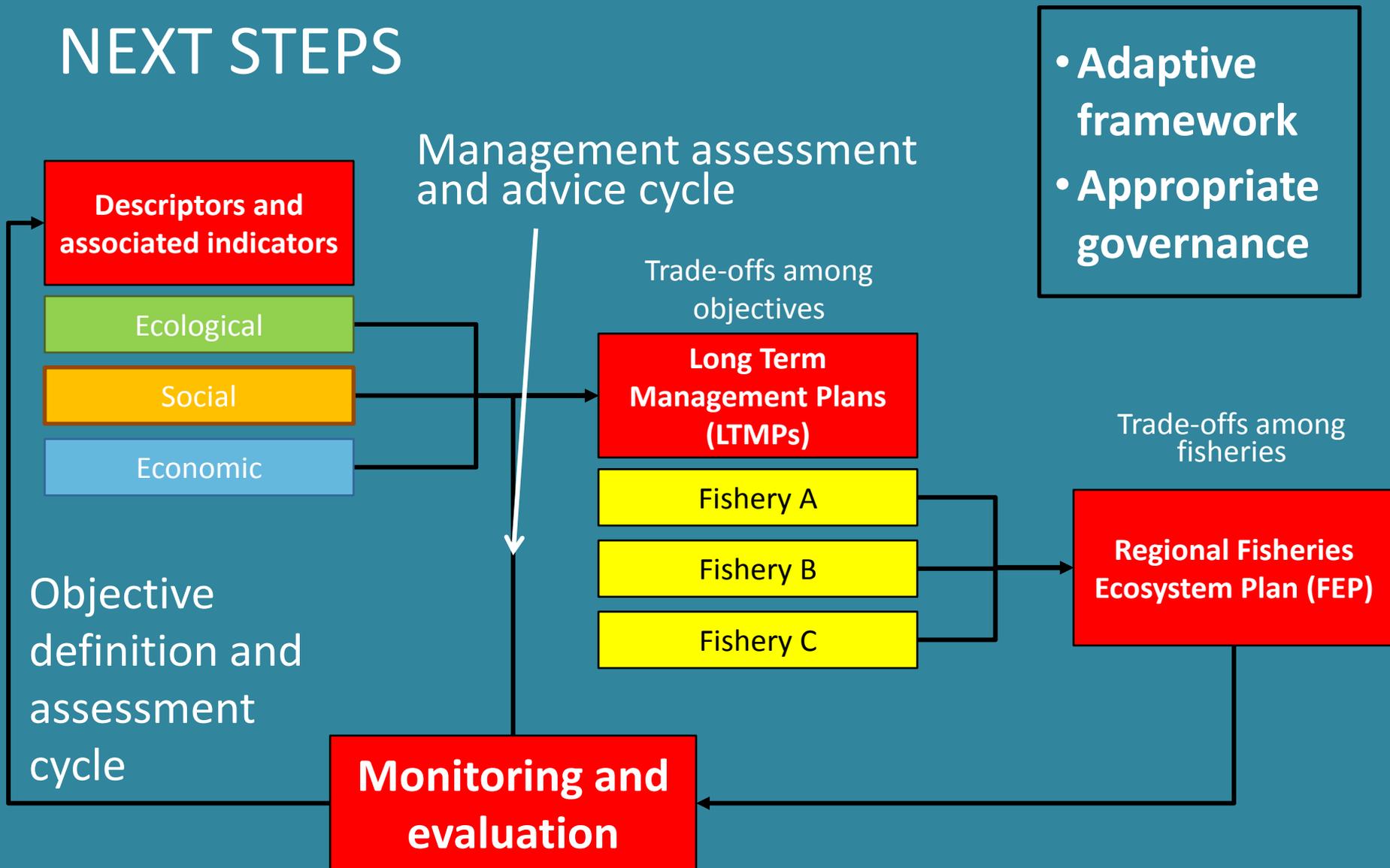
Additional information “new” to traditional fisheries advice process



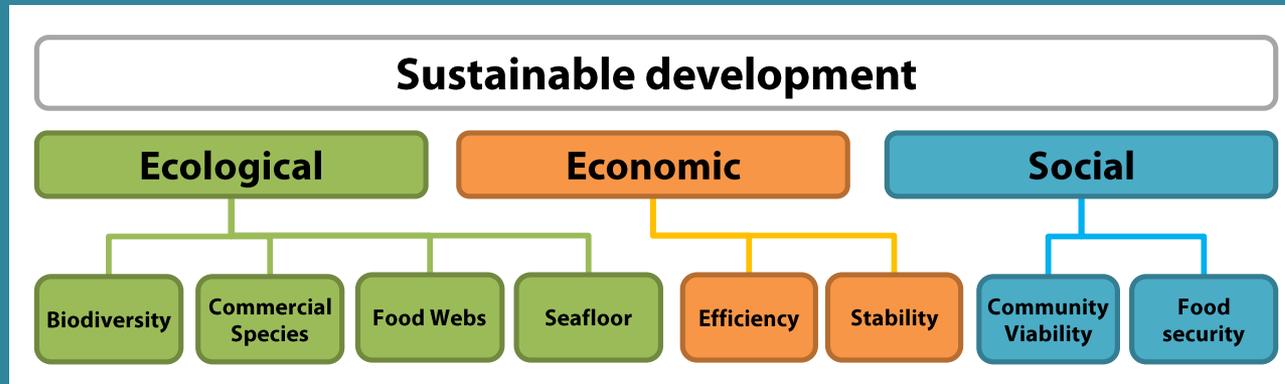
Closer collaboration to develop effective management advice

Qualitative data and expert judgement to supplement analytical modelling

# NEXT STEPS



# DESCRIPTOR CONSIDERATIONS



Related to fishing pressure (mortality) applied to fish and specific known impacts e.g. particular gears impacting particular vulnerable species

Related to the state of the case study fishery stock and other commercial stocks with which it interacts

Related to fishing pressure on the fish community. Indirectly, may also be related to effects of discards on local food

Related to impact of mobile bottom gear on seabed

Fishers' ability to take a given harvest at the lowest possible cost

Minimising fluctuations in harvesting possibilities over time

Employment linked with catch sector

Securing a sustainable and sufficient supply of marine protein as food

