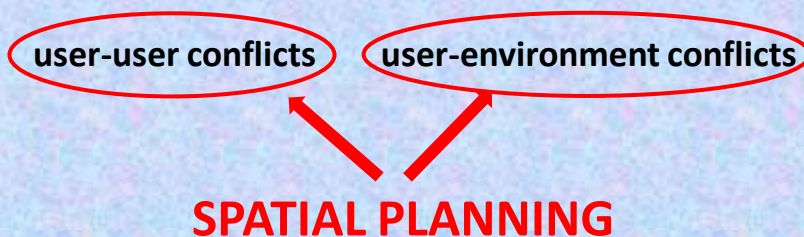


GFCM TRANSVERSAL WORKSHOP ON SPATIAL BASED APPROACH TO FISHERY MANAGEMENT
(SCSA / SCMEE / SCESS)
Rome, 6-8 February 2012

SPATIAL APPROACH TO FISHERIES MANAGEMENT IN THE MEDITERRANEAN REGION

Carlo Pipitone
CNR-IAMC, Castellammare del Golfo (Italy)

THE NEED FOR SPATIAL PLANNING



on land:
**MULTI-SECTORAL
INTEGRATED SPATIAL
PLANNING**

at sea:
**SECTOR-BY-SECTOR,
CASE-BY-CASE
SPATIAL PLANNING**

THE NEED FOR SPATIAL PLANNING

MESMA - Monitoring and Evaluation of Spatially Managed Areas (7th FP)

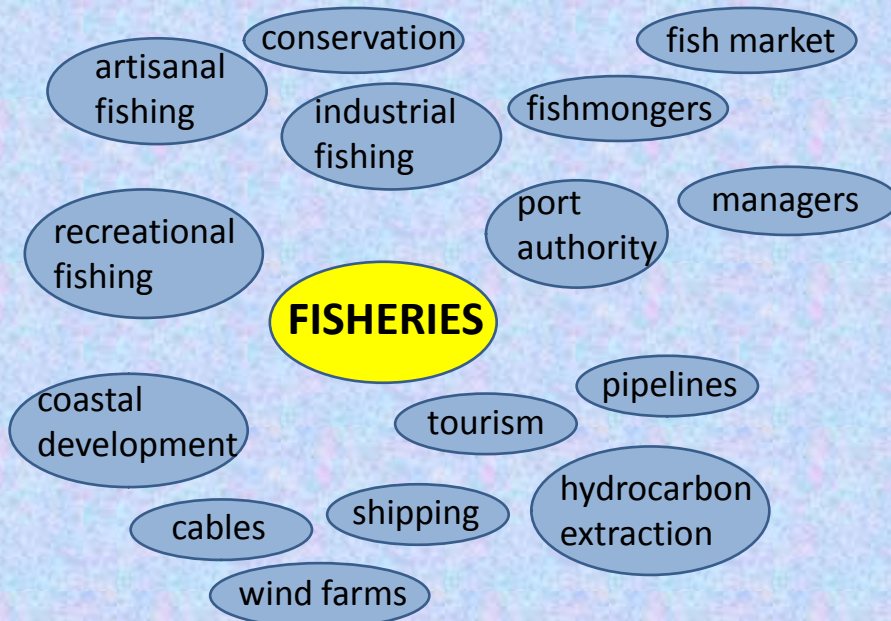


The core of MESMA is:

- framework of evaluation of spatial management plans;
- governance analysis

- 9 case studies
- 22 partners

INTERACTING STAKEHOLDERS AND ACTIVITIES



SPATIAL APPROACHES TO FISHERIES MANAGEMENT

- MARINE RESERVES
- NO-TAKE AREAS
- SINGLE-GEAR RESTRICTIONS
(temporary, permanent)

fishing exclusion zones,
fishery reserves,
fishing boxes,
no-trawl areas

Fishery Restricted Areas
(FRAs)

FISHERIES BENEFITS

“INTERNAL” BENEFITS:

- habitat protection
- settlement or spawning area protection
- bigger and older individuals
- higher abundance and biomass

“EXTERNAL” BENEFITS:

- spillover
(home range, density-dependence)
- eggs and larvae export
(bigger females = more eggs)

FISHERIES BENEFITS

Magnitude and extent of benefits depends on:

- **life history and mobility of species**
- **level of exploitation of stocks**
- **hydrographic regime**
- **availability of suitable habitats**
- **size and age of FRA**
- **enforcement (poaching,...)**
- **etc.**

IMPORTANT!!!

Assessment of benefits relies on availability of temporal and spatial controls

THE MEDITERRANEAN CONTEXT

THE MEDITERRANEAN SEA:

- **complex and fragmented fisheries**
- **conflicts between trawl and artisanal fishermen**
- **short distance between ports**
- **high biological diversity**
- **complex geopolitical situation**



NEED OF SPATIAL MANAGEMENT!!!

Spatial management initiatives in the European part of the Mediterranean:

- **marine reserves**
- **trawl exclusions**
- **EC Regulation no. 1967/2006 (1.5 miles limit to trawlers)**

FRANCE

Network of small **no-take areas**
in continental France and
Corsica:

- *établissement de pêche*
(with artificial reefs)
 - *cantonement de pêche*
- NO REPORTS



from: Meinesz et al. (1983)

FRANCE

Marine reserves:

LIMITED EVIDENCE OF SHORT-SCALE SPILLOVER



- 1 = Carry-le-Rouet Natural Park
- 2 = Cerbère-Banyuls Marine Natural Reserve

FRANCE

Proposed **no-take Fishery Restricted Area** in the Gulf of Lions

Aim: protection of large-sized hake spawners



from: GFCM (2008)

SPAIN

Marine reserves:

EVIDENCE OF SHORT-SCALE SPILLOVER FOR SPINY LOBSTER, PANDORA, STRIPED MULLET



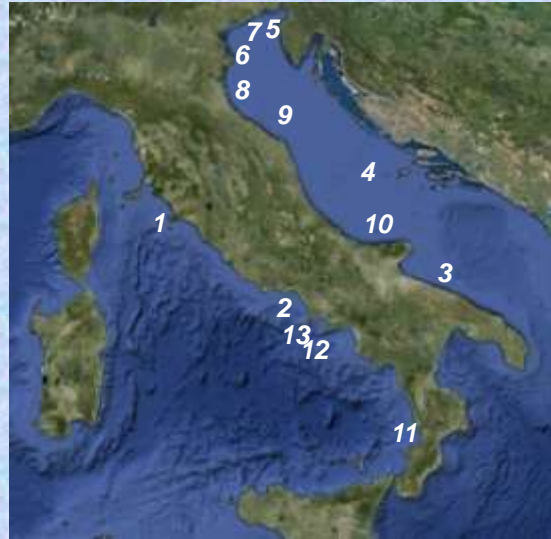
- 1 = Medes Islands Marine Reserve
- 2 = Cabrera Archipelago National Park
- 3 = Tabarca Island Marine Reserve
- 4 = Cabo de Palos – Islas Hormigas Marine Reserve

ITALY

Zones of Biological Protection:

Aim: protection of essential fish habitats (50-2226 sqkm)

NO REPORTS



ITALY

Three **no-trawl areas** in Sicily.

Gulf of Castellammare:

- 8-FOLD INCREASE OF FISH BIOMASS ON THE SHELF
- CHANGE IN REPRODUCTIVE PATTERN AND RECRUITMENT OF RED MULLET
- SOCIO-ECONOMIC ISSUES
- TRAWL BAN IN LATE 19TH CENTURY



- 1 = Gulf of Castellammare
- 2 = Gulf of Patti
- 3 = Gulf of Catania

ITALY

Marine reserves:

EVIDENCE OF SHORT-SCALE SPILLOVER FOR SPINY LOBSTER, SEABREAMS AND OTHER FISH



- 1 = Su Pallosu
- 2 = Portofino MPA
- 3 = Torre Guaceto MPA

GREECE

**Seasonal and permanent no-trawl areas:
INCREASED FISH BIOMASS INSIDE NO-TRAWL AREAS**



DISCUSSION

LESSONS LEARNED:

- insufficient effort has been put into the **assessment and evaluation** of reserves and FRAs;
- **data collection** at sea should be increased and coupled to **socio-economic surveys** on land;
- some sort of **compensation** may be necessary to overcome hostility from fishermen towards fishery restrictions;
- **co-management** may lead to better outcomes and higher acceptability;
- **fishing effort displacement** and/or concentration at FRA's borders should be taken into account in the planning stage.

DISCUSSION

WEAK POINTS OF PRESENT MPAs:

- reserves rarely have clear fisheries-oriented objectives
- poorly designed monitoring programs (which often lack temporal or spatial controls) do not offer strong evidence of benefits for fisheries
- reserves and FRAs are effective only with non-mobile species.

These points can be overcome by **clear management objectives** associated with **careful zoning design** and **reliable monitoring programs**

CONCLUSIONS

IN THE MEDITERRANEAN:

- high biodiversity
- high resilience to exploitation
- complex fisheries
- complex geopolitical situation
- lack of good, long data series
- many stocks fully- or overexploited
- no coordinated management measures between countries
- poor enforcement of complex technical measures

**CAREFULLY PLANNED AND WELL MANAGED FRAs
AND MARINE RESERVES HAVE GREAT POTENTIAL
AS FISHERIES MANAGEMENT TOOLS**



Thank you!