



L'ITALIA SOSTENIBILE

IDEE E AZIONI PER IL FUTURO

BOLOGNA 20-21 MAGGIO 2016

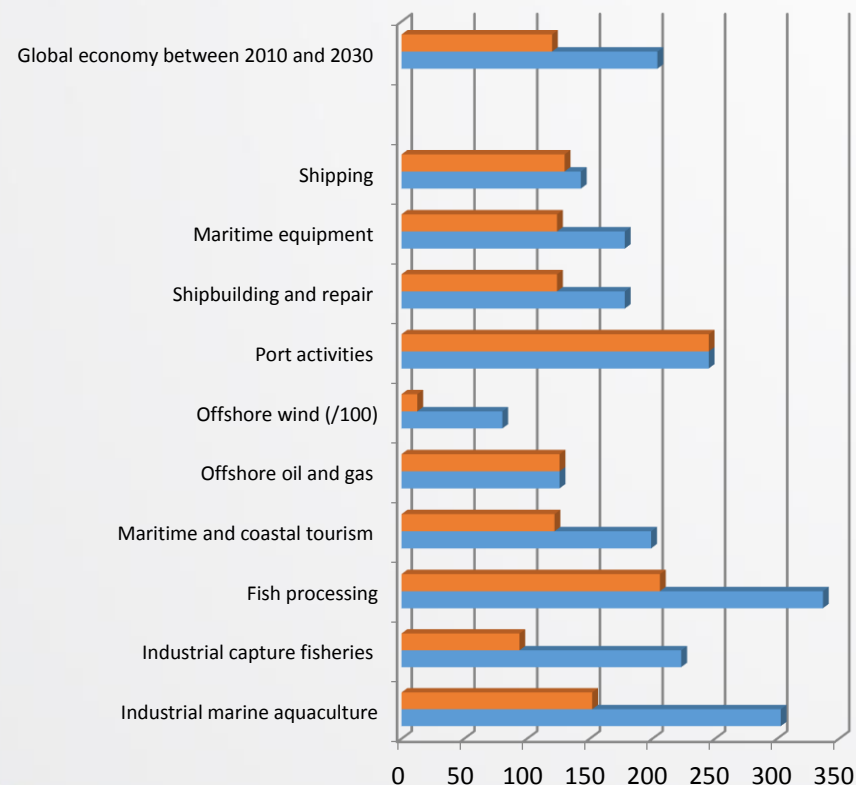
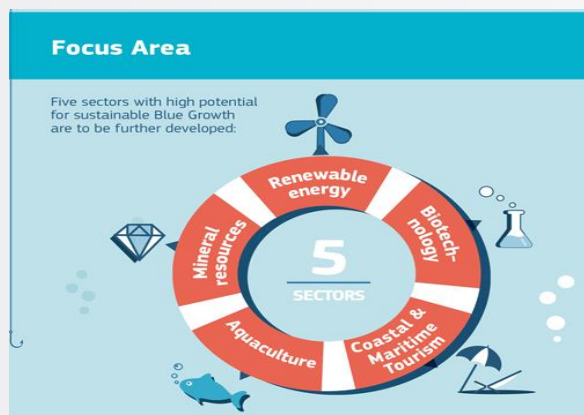
C.N.R. AREA DELLA RICERCA DI BOLOGNA

Energia e usi del mare: una sfida per lo sviluppo sostenibile

**ANDREA BARBANTI
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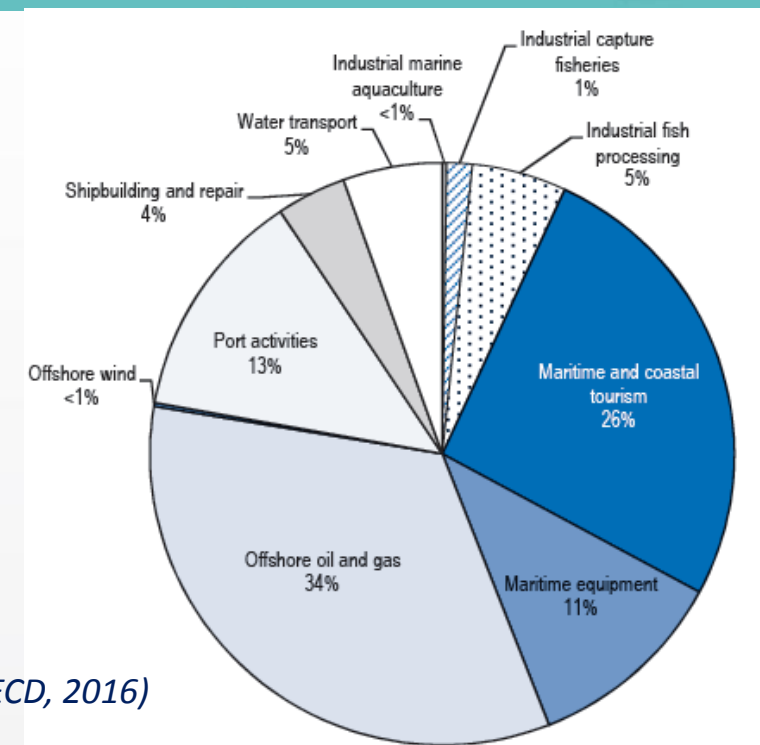


La Crescita Blu nel mondo



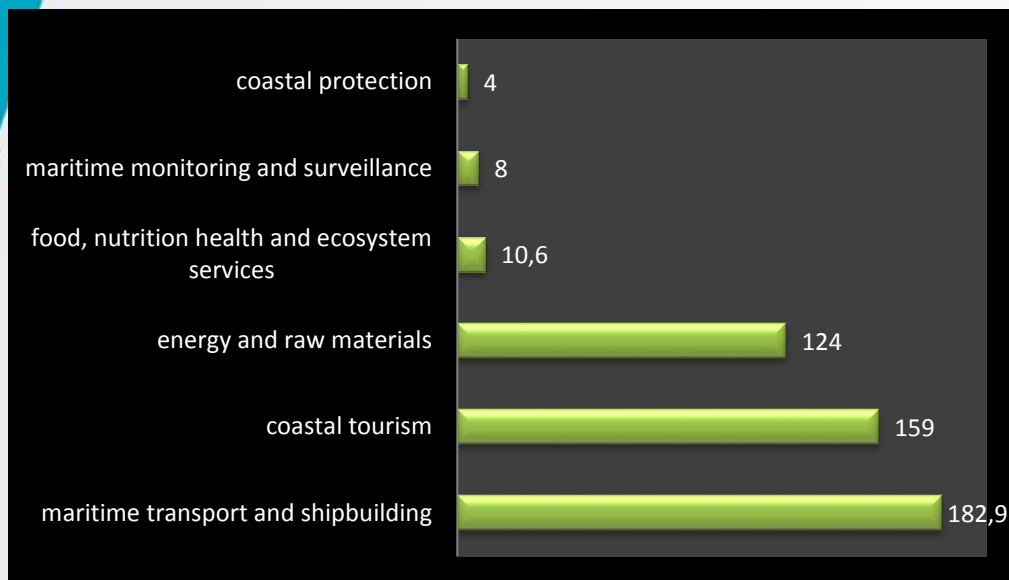
**Total change
between 2010 and
2030**

■ Employment
■ GVA



(OECD, 2016)

La Crescita Blu in Europa



Value added
(bn euro)

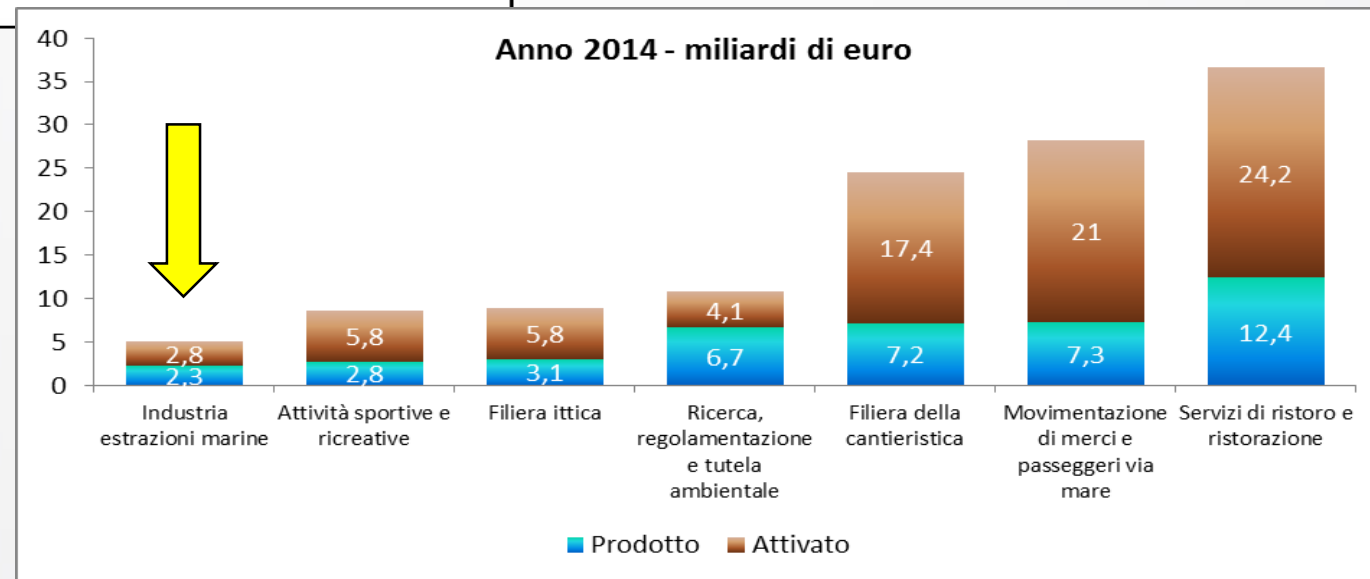
(Ecorys, 2012)

Maritime economic activity	Size today (billion €)	Recent growth	Future potential
Mature stage			
1. Short-sea shipping	57	5.8%	2
2. Offshore oil and gas	107-133	-4.8%	1
3. Coastal tourism & yachting	144	3-5%	4
4. Coastal protection	1.0-5.4	4.0%	6
Growth stage			
5. Offshore wind	2.4	21.7%	6
6. Cruise tourism	14.1	12.3%	5
7. Marine aquatic products	0.5	4.6%	4
8. Maritime monitoring and surveillance	5.6-10	+	5
(Pre-)development stage			
9. Blue Biotechnology	0.8	4.6%	5
10. Ocean renewable energy	0.25	+	5
11. Marine minerals mining	0.25	0/+	4

La Crescita Blu in Italia

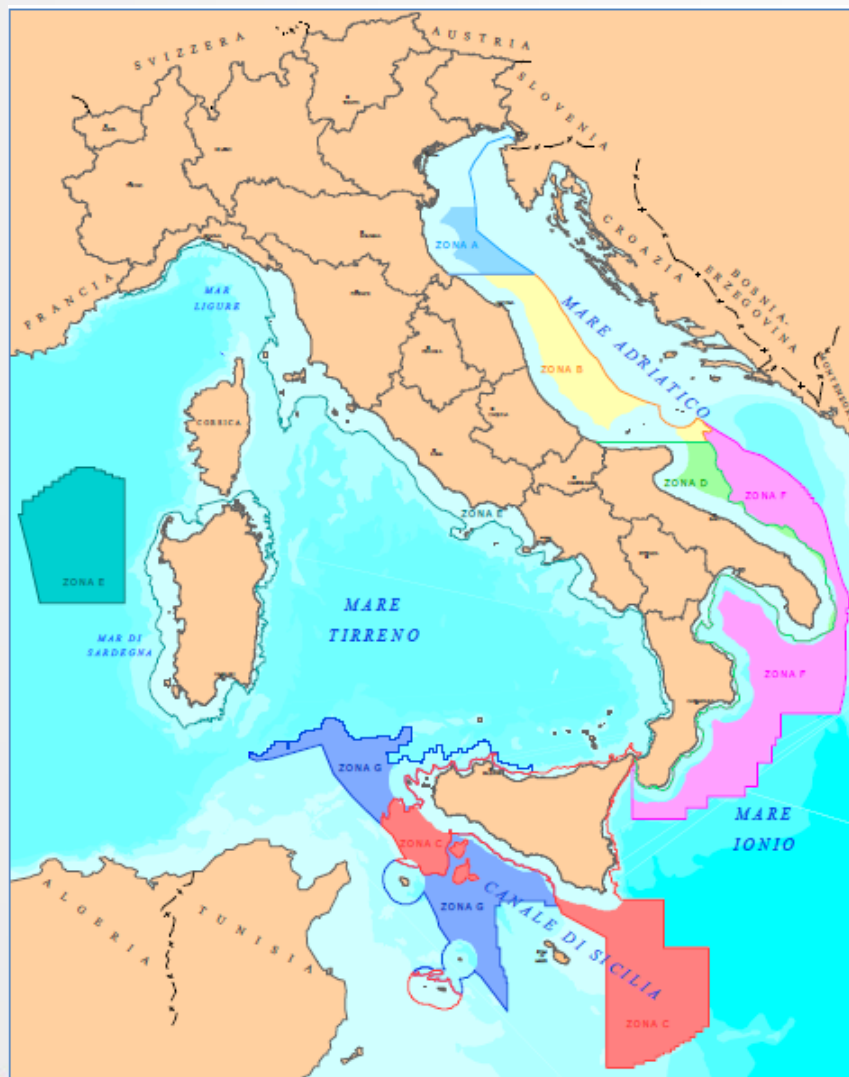


(Unioncamere-Si.Camera, 2015)

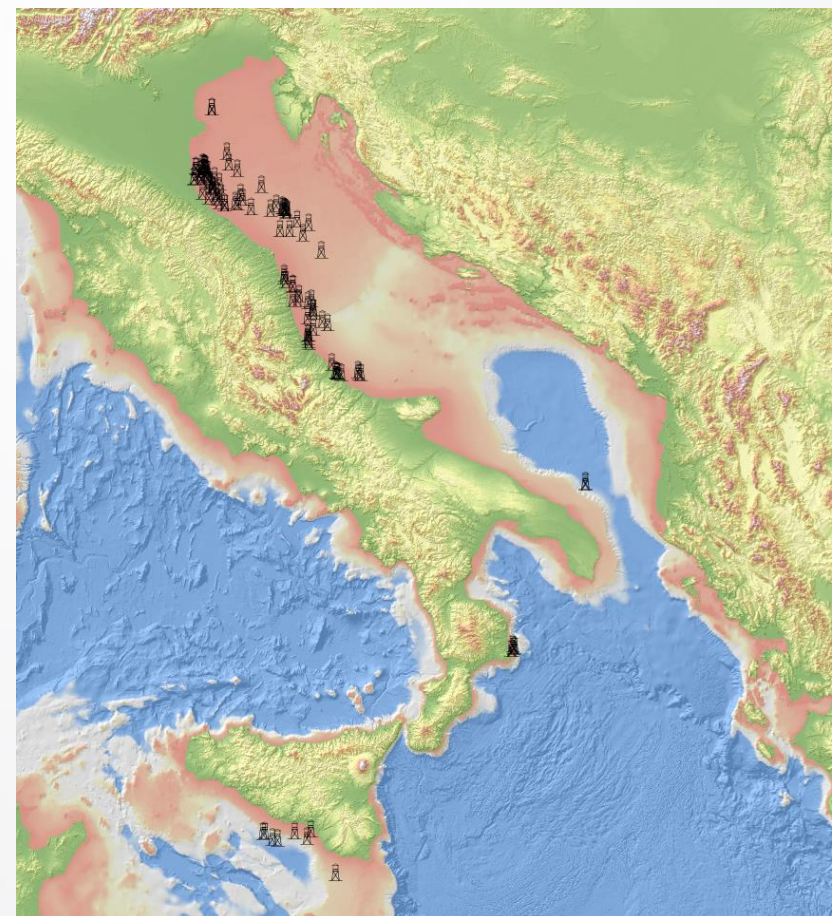


Energia nel mare

Produzione: combustibili fossili



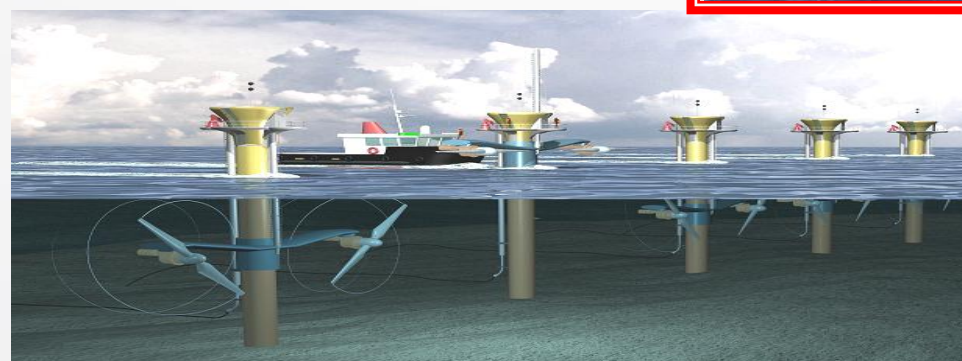
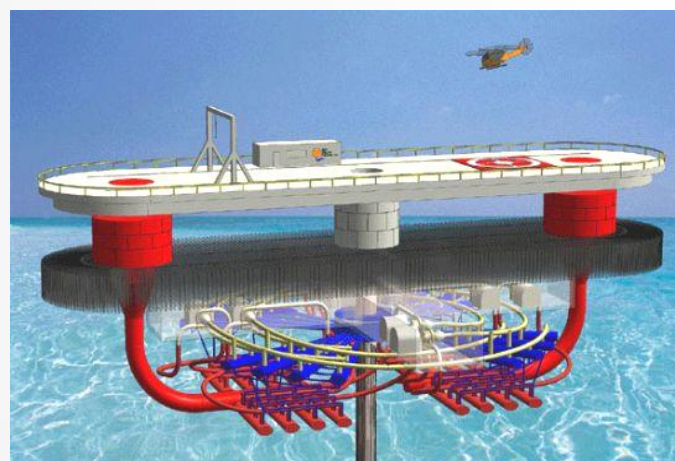
Offshore oil and gas boreholes (361) active to date in Italy in the Adriatic-Ionian Region



Energia nel mare

Produzione:

Energie rinnovabili dal mare (onde, correnti, maree, vento, salinità)



L'ITALIA SOSTENIBILE IDEE E AZIONI PER IL FUTURO

Source: Gazprom and EU



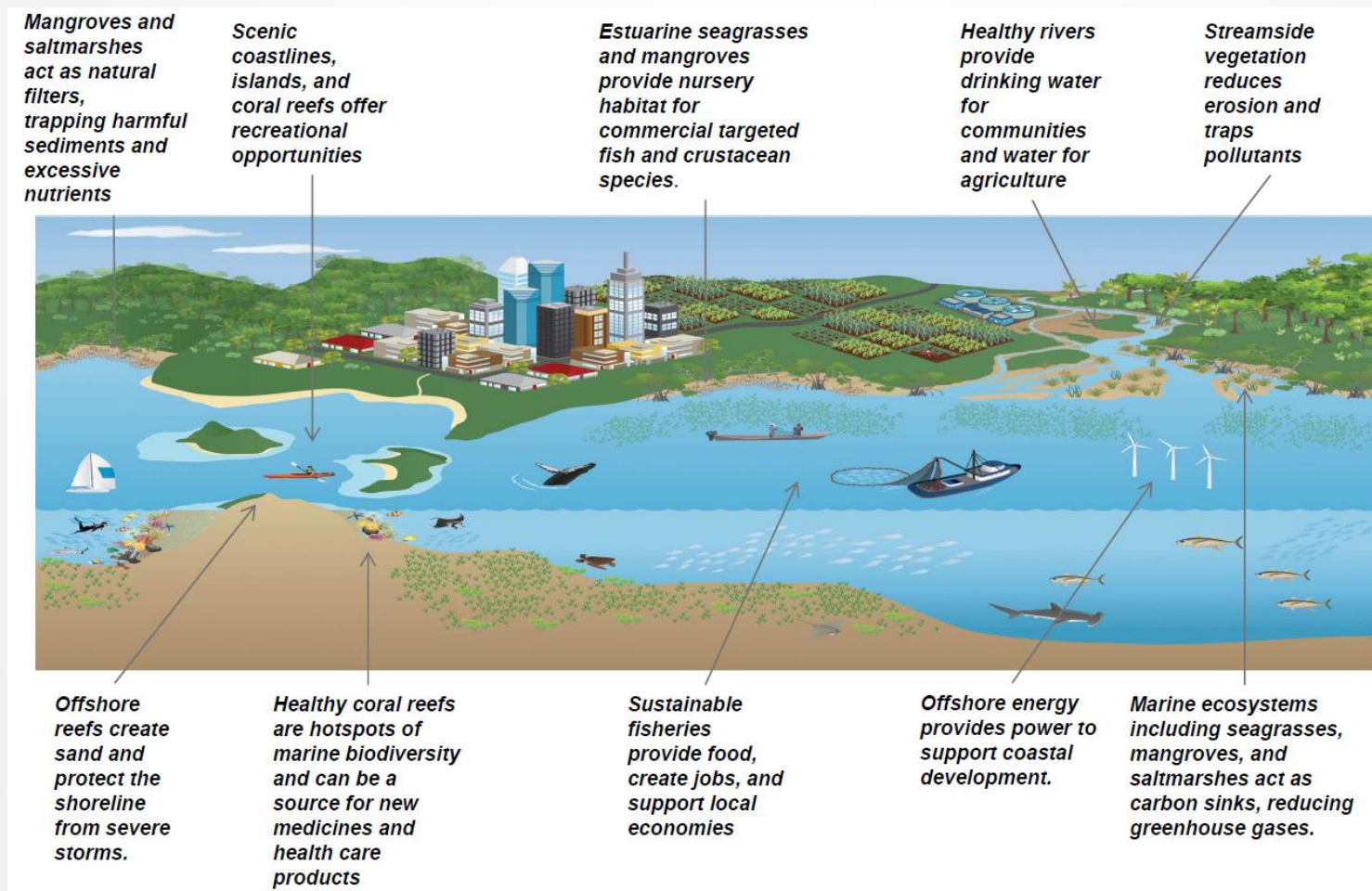
Impatti ambientali delle attività dell'economia del mare

Blue Growth economic activities	Impacts									Potential beneficial environmental effects		
	Biological disturbance	Physical loss	Physical damage	Interference with hydrological processes	Other physical disturbance	Contamination by hazardous substances	Systematic and/or intentional release of substances	Nutrient and organic matter enrichment				
	- Extraction of species including non-target catches - Non-indigenous species and translocations - Microbial pathogens	- Smothering - Sealing	- Siltation - Abrasion - Extraction	- Thermal regime - Salinity regime	- Underwater noise - Marine litter	- Synthetic compounds - Non-synthetic substances - Radio-nuclides	e.g. produced water, carbon storage	- Fertilisers and other nitrogen- and phosphorus-rich substances - Organic matter		reduction of greenhouse gases	creation of new habitats	increased public support for protection
Shortsea shipping												
Offshore oil and gas												
Coastline tourism and yachting												
Coastal protection												
Offshore wind												
Cruise shipping												
Marine aquatic products												
Maritime monitoring and surveillance												
Blue Biotechnology												
Ocean renewable energy												
Marine minerals mining												

(Ecorys, 2012)

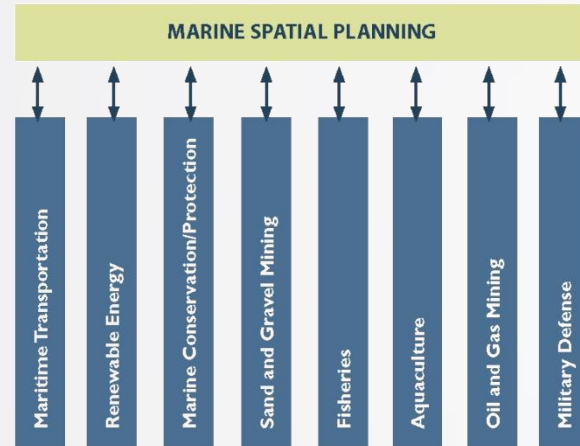
Ecosystem-Based Management

Gestione sostenibile delle risorse naturali e della biodiversità per salvaguardare processi, funzioni e servizi degli ecosistemi



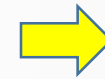
(Angelidis, 2012)

MSP - La pianificazione degli usi del mare

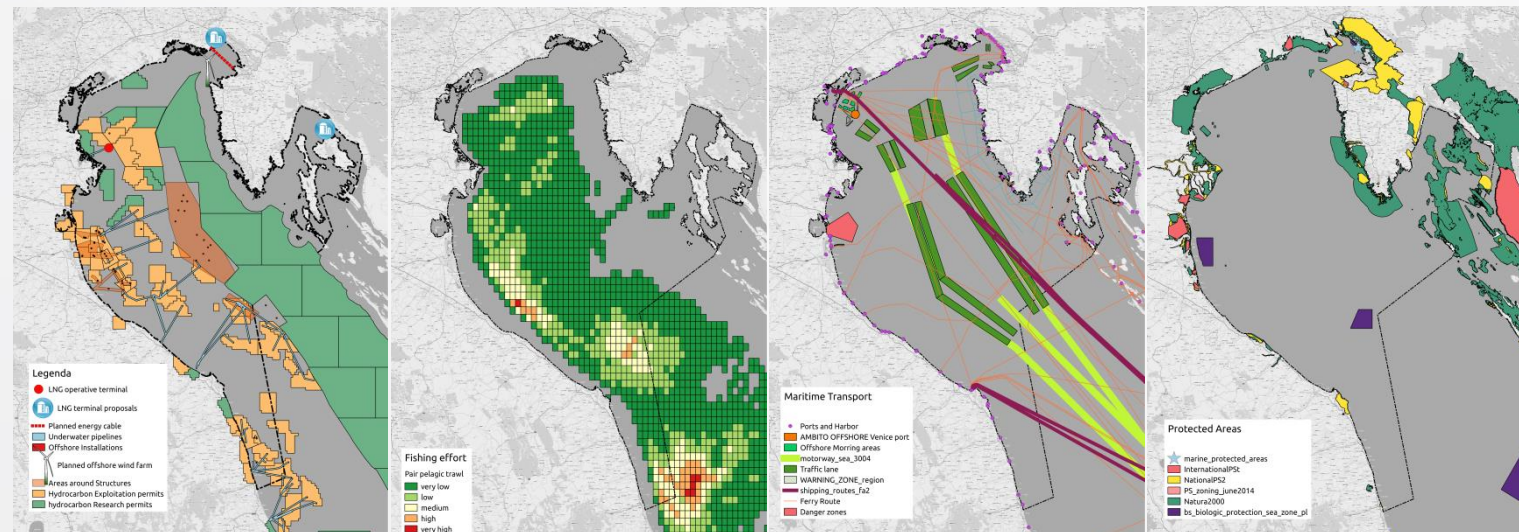


MSP is a practical way to create and establish a more **rational organization of the use of marine space** and the **interactions between its uses**, to **balance demands for development** with the need to **protect marine ecosystems**, and to achieve social and economic objectives in an open and **planned way**.

(Ehler & Douvere, 2009)



DIRECTIVE
2014/89/CE



MSP - La pianificazione degli usi del mare

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Art. 8



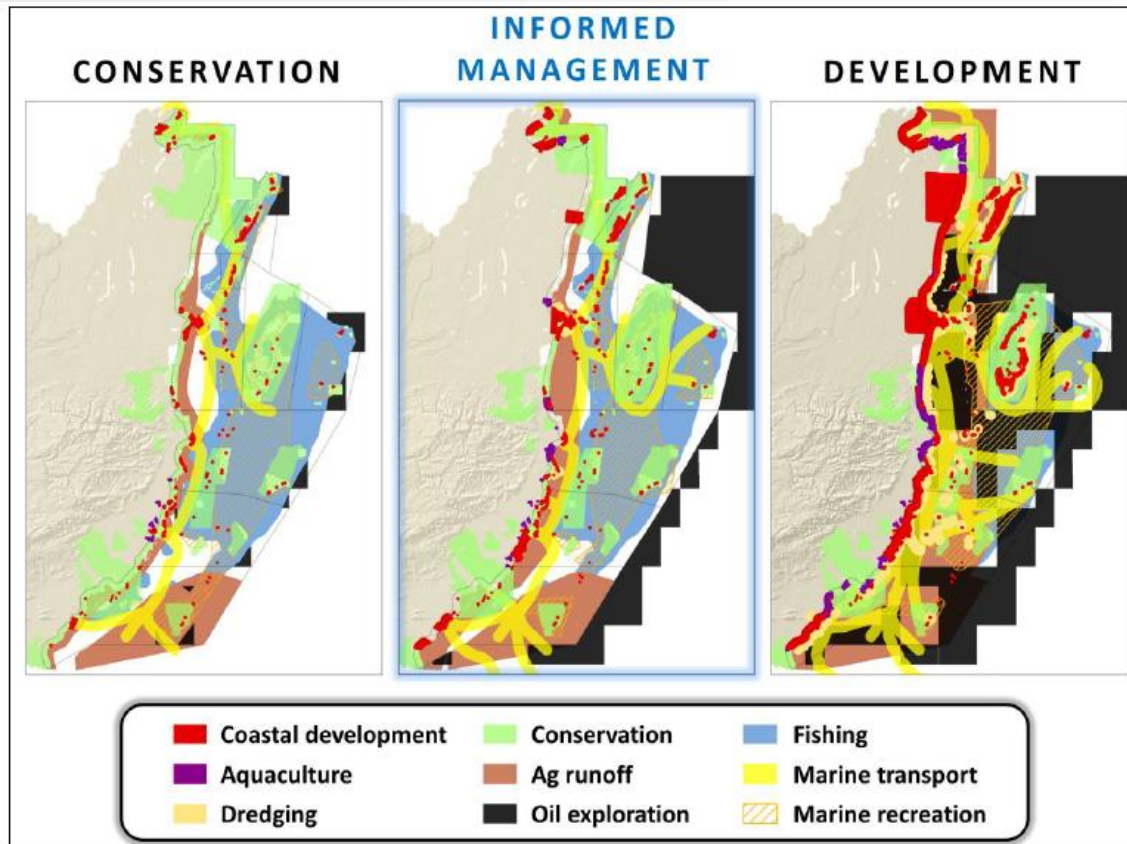
“...possible activities and uses and interests may include:

- aquaculture areas,
- fishing areas,
- **installations and infrastructures for the exploration, exploitation and extraction of oil, of gas and other energy resources, of minerals and aggregates, and for the production of energy from renewable sources,**
- maritime transport routes and traffic flows,
- military training areas,
- nature and species conservation sites and protected areas,
- raw material extraction areas,
- scientific research,
- **submarine cable and pipeline routes,**
- tourism,
- underwater cultural heritage.”

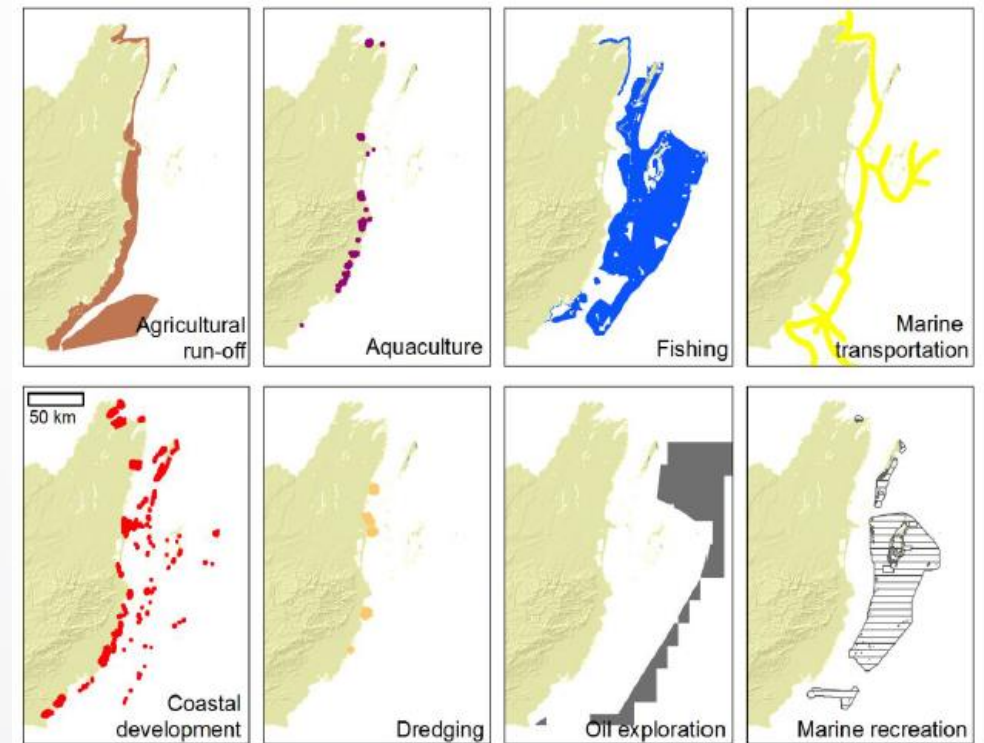
MSP: il problema della “VISIONE”

Shared VISION, long-term perspective, management objectives

An example from Belize



INFORMED MANAGEMENT



(Harkema et al., 2014)

*Natural Capital Project – WWF, 2014 - InVEST Scenarios Case Study:
Coastal Belize*

EUSAIR: EU Strategy for the Adriatic and Ionian Region

AGENDA 2030 DI
BOLOGNA

L'ITALIA SOSTENIBILE IDEE E AZIONI PER IL FUTURO



Promote sustainable economic and social prosperity of the Region by improving its attractiveness, competitiveness and connectivity, while preserving the environment and ensuring healthy marine and coastal ecosystems

- no additional EU funds
- no new institutions
- no new legislation

All EU funds 2014-2020 available in the Region shall support, as appropriate, the implementation of the Strategy

4 main pillars

1. Blue Growth
2. Connecting the Region
3. Marine Environment
4. Sustainable tourism

MSP is a cross-pillar issue and a **key enabling factor for Blue Growth in the AIR**





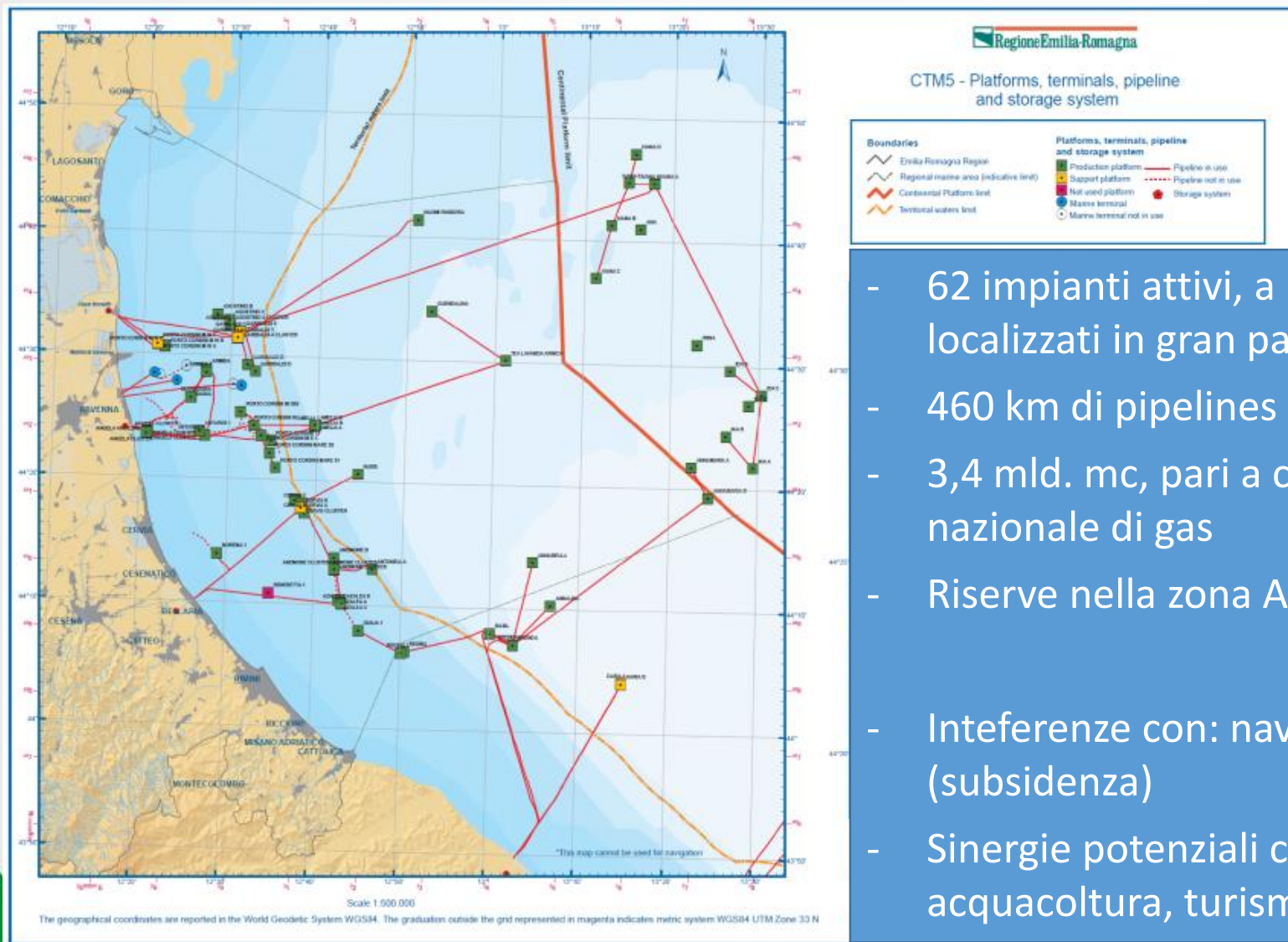
The objective of this pillar, coordinated by Italy and Serbia, is to **improve transport and energy connectivity** in the Region and with the rest of Europe.

Energy networks

The three EU energy policy objectives – competitiveness, security and sustainability – will be achieved through a **well-interconnected energy market**.

Investments are needed to **connect electricity grids and complete gas networks**. Regulatory measures will be enforced to remove barriers to cross-border investment.

Oil & Gas vs Turismo in ER

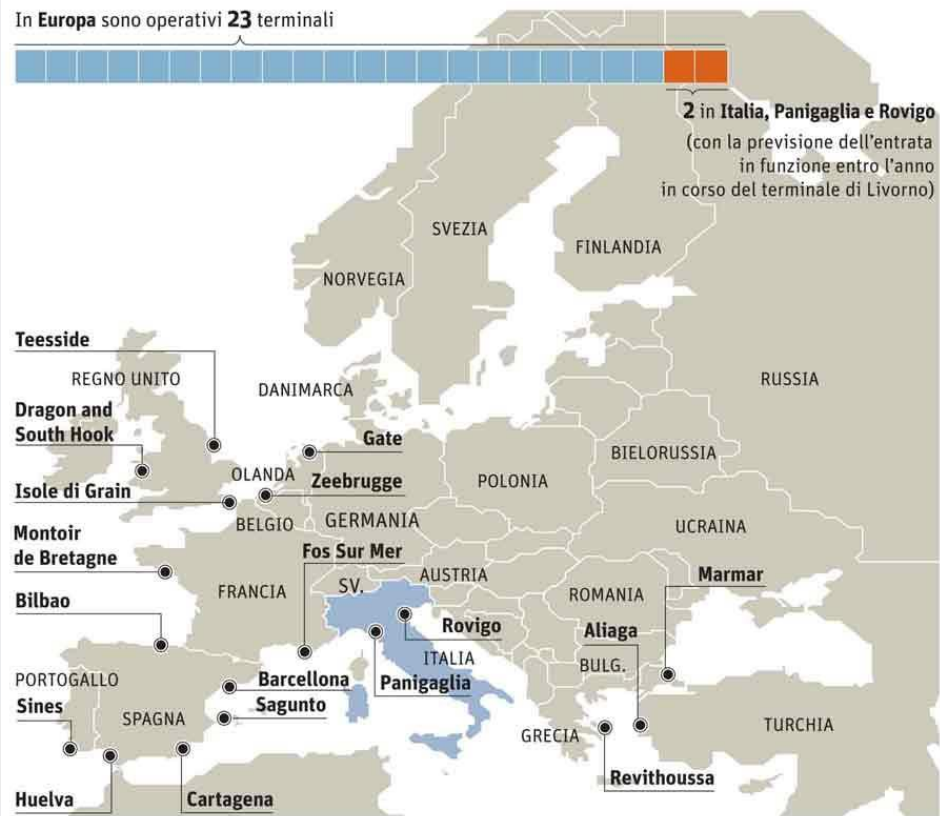


- 62 impianti attivi, a partire dai primi anni '70, localizzati in gran parte entro le 12 miglia
- 460 km di pipelines attive
- 3,4 mld. mc, pari a circa il 50% della produzione nazionale di gas
- Riserve nella zona A pari a circa 46 mld. mc
- Inteferenze con: navigazione, pesca, turismo (subsidenza)
- Sinergie potenziali con: pesca sportiva, acquacoltura, turismo

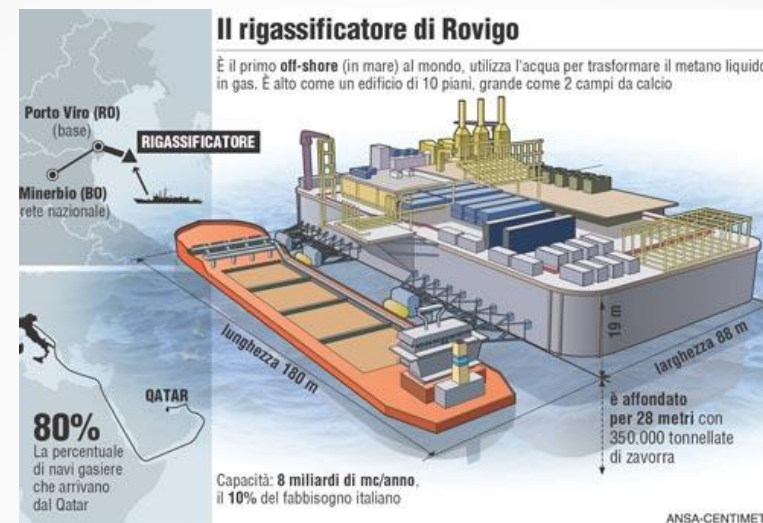
Rigassificatori offshore

I rigassificatori attivi in Europa

In Europa sono operativi 23 terminali



Situazione al 2013



Rigassificatore di Zaule (Trieste):

1 luglio 2004 - presentazione al ministero delle Attività produttive dell'istanza di avvio del procedimento autorizzativo

2016 - progetto in discussione

Take-home messages

- Operiamo con visione sistemica e di lungo periodo
- Prendiamo decisioni trasparenti e basate sulla migliore conoscenza disponibile

Grazie per l'attenzione

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- ADRIPLAN Team



*If you want to build a ship, don't drum up the men to gather wood, divide the work and give orders.
Instead, teach them to yearn for the vast and endless sea.*

Antoine de Saint-Exupéry (1900 – 1944)

AGENDA 2030 DI
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