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Preserving the marine ecosystem in the Adriatic–Ionian Region fostering scientific cooperation

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Director

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Istituto per le
Risorse Biologiche
e le Biotecnologie
Marine

Webinar “Preservation of Natural resources,
Innovation and Robotics for the development of
the economy in the Adriatic Ionian Region”

27th January, 2020



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CNR – Consiglio Nazionale delle Ricerche (National Research Council) is the largest public research institution in Italy, the only one of the Research Ministry performing multidisciplinary activities.

Founded on 1923, CNR's mission is to perform research in its own Institutes, to promote innovation and competitiveness of the national industrial system, to promote the internationalization of the national research system, to provide technologies and solutions to emerging public and private needs, to advise Government and other public bodies, and to contribute to the qualification of human resources.

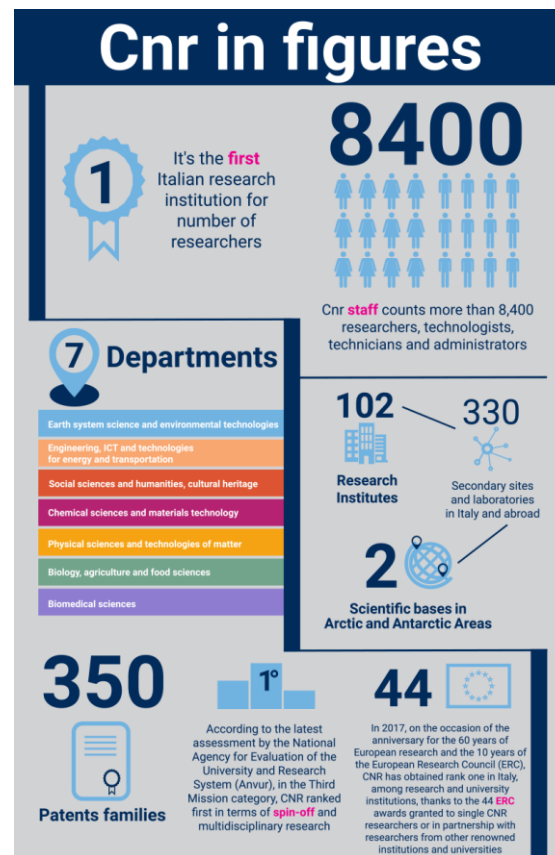
4.000 young researchers engaged in postgraduate studies & training.

Significant contribution also from research associates (from Universities or private firms)

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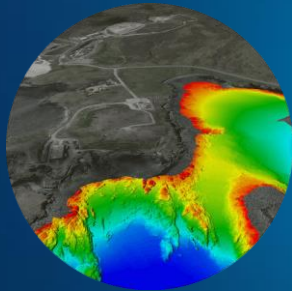
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Marine RESEARCH AT CNR, ITALY

3 interacting Institutes within the Department of Earth System Science and Environmental Technologies (DSSTTA)

ISMAR

Institute of Marine Sciences
(Head Quarter Venice)



IRBIM

Institute for Marine Biological Resources
and Biotechnology (HQ Messina)



IAS

Institute for the Study of human
impacts and sustainability in the
marine environment (HQ Rome)



Cumulatively, a community made by >450 staff of marine scientists, technicians, technologists



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The Institute for Biological Resources and Marine Biotechnologies promotes and carries out fundamental and applied research to study marine organisms and ecosystems and their evolution, also in relation to global change and human impact



IRBIM CNR is a leading Research Center in Italy for the study of marine life, ecosystems, biodiversity and marine bio-resources





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71% of our planet's surface
is covered by seawater



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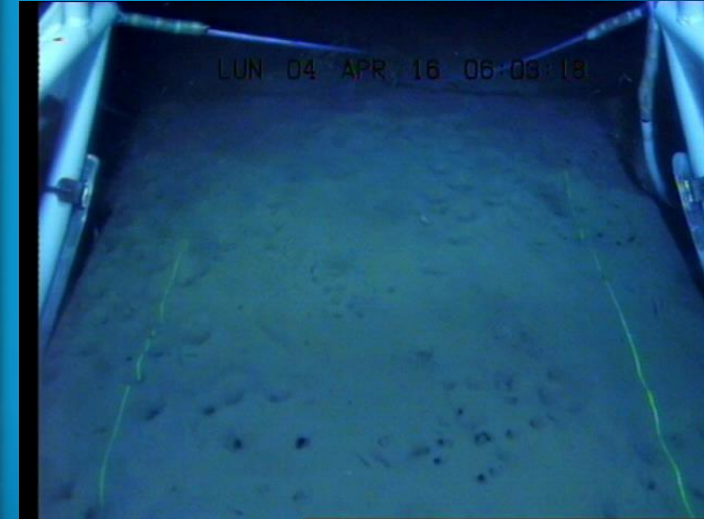
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Importance of the sustainable
use of marine (bio)resources



Towed underwater TV towards the
quantification of Norway lobsters in
the Adriatic Sea (CNR IRBIM
Martinelli et al 2013)



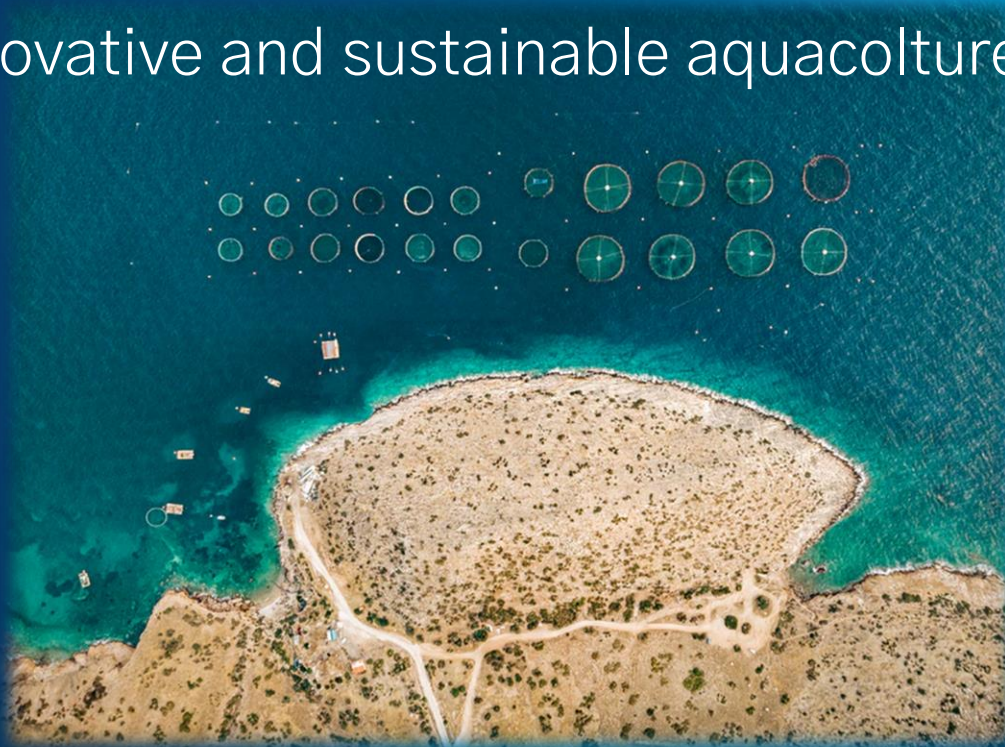
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Innovative and sustainable aquaculture



Testing new feeds based on insects
at CNR IRBIM facilities in Messina



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The marine microbiome and blue
biotechnologies



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Fishery and technologies



Device for excluding turtles and decrease mortality (Project Tartalife coordinated by CNR IRBIM)



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Human impact on the marine ecosystem and biota



CNR IRBIM reported presence up to > 100kg/m² of litter on the Adriatic Sea seabed (Stafella et al 2015 MPB)

Centrality of many IRBIM themes in international scientific agendas / trajectories



The Decade will mobilise resources and technological innovation in ocean science needed to deliver key societal outcomes:

- A clean ocean where sources of pollution are identified and removed
- A healthy and resilient ocean where marine ecosystems are mapped and protected
- A predictable ocean where society has the capacity to understand current and future ocean conditions
- A safe ocean where people are protected from ocean hazards
- A sustainably harvested and productive ocean ensuring the provision of food supply
- A transparent ocean with open access to data, information and technologies

The roadmap for its implementation has been launched

2030 Agenda for Sustainable Development



SDG14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development



blueMed Research and Innovation for blue jobs and growth in the Mediterranean region

supporting and coordinating **Research & Innovation** to build **sustainable Blue Growth**

The BlueMed initiative addresses **research and innovation** through a **multidisciplinary** approach, linking **economy, environment and humans** by means of intensive national **networking of actors** and **international science diplomacy** efforts

in the **Mediterranean Sea**

blueMed



European Commission

Home > Strategy > Priorities 2019-2024 > A European Green Deal

A European Green Deal

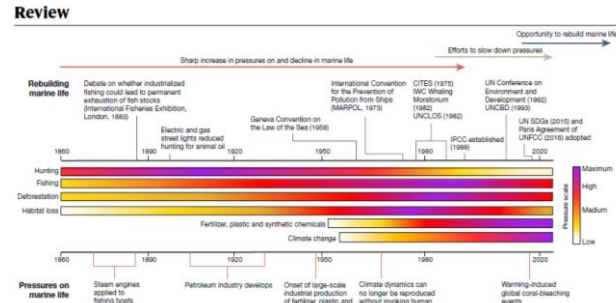
Striving to be the first climate-neutral continent



Nononly grenne! At pag. 1 “Forests and oceans are being polluted and destroyed” and later on “A sustainable blue economy will play a central role”

Centrality of many IRBIM themes in international scientific agendas / trajectories

«Starfish mission»
Horizon Europe

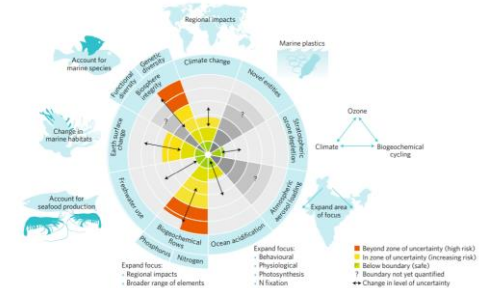


Rebuilding marine life
Duarte et al. 2020 NATURE

Necessity to rebuild the marine life-support systems that deliver the benefits that society receives from a healthy ocean

NATURE ECOLOGY & EVOLUTION REVIEW ARTICLE

Planetary boundaries
for a blue planet
Nash et al. 2017 NATURE
ECOL EVOL



ARIEL: Promoting small scale fisheries and aquaculture transnational networking in Adriatic-Ionian macroregion

INTERREG ADRION project led by IRBIM (Italy)

Objectives

- 1 – promote technological and non technological solutions for innovation speed up and up take in SSF and AQ of ADRION Countries
- 2– increase the capacity of key innovation actors of SSF and AQ to attract and develop innovation within regional system



Pilot Action:

- Testing pingers, Dolphin Dissuasor Devices (DDD) to reduce/prevent dolphin damages
- Developing and testing a virtual marketplace to promote the small-scale fisheries access to market and its added value to consumers

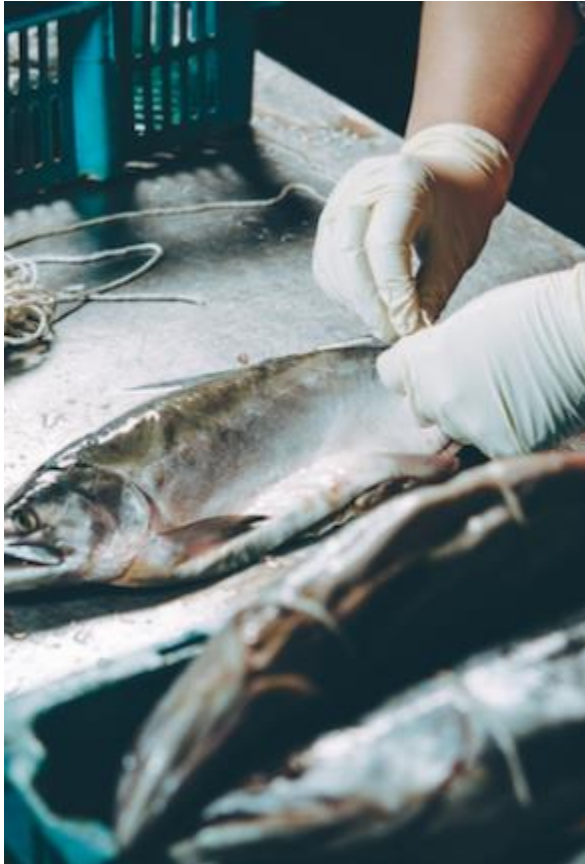
Main Results: development of a **Joint Research Agenda for small-scale fishery and aquaculture** and a **Chart of Innovation Services** (strategic and multidisciplinary action plan to successfully address the major challenges linked to innovation and sustainability of fisheries and aquaculture)

<https://ariel.adrioninterreg.eu/>



Video storytelling at <https://bit.ly/33gxx7Z>

PRIZEFISH: Piloting of eco-innovative fishery supply-chains to market added-value Adriatic fish products



INTERREG Italy-Croatia project led by University of Bologna (Italy)

Objectives

- 1 - to develop and pilot key-enabling technologies for environmental and economic sustainable fishery as well as innovative fishery products with added-value given by ecolabels fulfilling requirements of environmental, economic and social sustainability;
- 3 - To make Italian and Croatian Adriatic fishing SMEs and Producer Organizations (POs) more sustainable and to increase their economic competitiveness in the seafood markets

Main Outcomes

- Piloting of sustainable and **eco-certified fishery productions**
- Introduction of technical and technological innovative solutions for on-board quality handling of the catches
- Development and implementation of specialized polyvalent – multiuse processing and packaging devices
- Development and quality control of **eco-innovative fishery products**
- Traceability and certification of eco-innovative fishery products
- Designing of **eco-innovative value chains**
- Capacity building for market operators and local authorities



FAIRSEA: Fisheries in the Adriatic region – a shared ecosystem approach



INTERREG Italy–Croatia project led by OGS (Italy)

Objectives

- 1 – Enhance transnational capacity and cooperation in fisheries in the Adriatic by exchanging knowledge and sharing good practices
- 2 – Implement a shared “state of the art” integrated platform
- 3 – Define guidelines and best practices for transnational integrated frameworks useful for an ecosystem approach to fisheries and to the achievement of Common Fisheries Policy objectives

Main Results

- **science-based integrated platform** (decision support tool) that integrates the dynamics from water masses, primary production, main components of the ecosystem and their food, main fisheries in a spatio-temporal dynamic context also accounting for socio-economic impacts and stakeholders’ inputs approach to fisheries (EAF)
- definition of and practices through guidelines, best practices and common standards for the application of the **Ecosystem Approach to Fisheries (EAF)**



ITACA: Innovative Tools to increase Competitiveness and sustainability of small pelagic fisheries



INTERREG Italy-Croatia project led by Veneto Agricoltura (Italy)

Objectives

- 1 - To test and introduce innovative tools to enable the competitiveness of Adriatic SP fisheries
- 2 - Stimulating the creation of a cluster among the SP fisheries operators in order to support the positioning of fisheries producers in the SP fish product chains
- 3 - To promote economic and environmental sustainable SP fishing activities adapting the level of catches to the economic viability of the SP fisheries enterprises as well as the maintenance of the good status of SP stocks and their



Main Outcomes

Econometric model and algorithm for SP fisheries that correlates biological data, data about trends in catches and fishing efforts, economic and market data. The model is able to predict the most probable selling price in each fishing area taking and the best level of catches halting the over-reduction of price due to too large availability and on the same time promoting a sustainable fishing effort.

Database on SP stocks, fisheries and market for supporting the functioning of the model
Cross-border **cluster of SP fisheries SMEs** at Adriatic level

ARGOS: Shared Governance of Sustainable fisheries and aquaculture activities as leverage to protect marine resources in the Adriatic sea



INTERREG Italy–Croatia project led by Regione Friuli Venezia Giulia (Italy)

Objectives

- 1 – To set up of a common framework and decision–making process for the governance and protection of Adriatic marine biological resources under the best scientific guidance
- 2 – To harmonise the assessment of fisheries and aquaculture data in the Adriatic by establishment of a common approach as reference to propose shared models and measure for the management of marine resources.
- 3 – To improve fishery and aquaculture operators know–how towards environmental sustainability



Main Outcomes

- establishment and functioning of an **Adriatic Advisory Committee** for the governance of fish related activities
- shared framework of all Adriatic databases on both biological and socio–economic data
- establishment of **demonstration and experimental fishery and aquaculture centres**
- setting of **co–management protocols for protected biological resources** increased by the application of artificial devices
- testing of the effective sustainability of **multi–trophic integrated aquaculture**;
- operative interventions for the characterisation of the role of aquaculture for the protection of biodiversity

B-Blue: Building the blue biotechnology community in the Mediterranean



MED Strategic Project on Innovation led by ENEA (Italy)

Objectives

- 1 – Aggregate and coordinate the Med Blue Biotechnology (BBt) organisations and stakeholders in a transnational and multi-actor community
- 2 – Support capacity building and innovation transfer in the sector
- 3 – Facilitate design and implementation of joint and integrated initiatives, programmes and policies boosting the Med BBt sector



Main Outcomes

- Development of a knowledge package on MED Blue Biotechnology and set up of the MED BBt community
- Creation of a network of Blue Biotechnologies Hubs and implementation of 5 pilots (open-innovation schemes, demonstrator sites activation, project emergence workshops, hackathons, matchmakings/networking/studies unlocking innovation)
- Transferring programme and activation of an ICT matchmaking tool to unlock business opportunities matching innovation knowledge offer & demand in the BBt sector





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Grazie – Thank you for your attention

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