Net Free Black Sea - a step forward in restoring Black Sea ecosystem

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INTRODUCTION

The "Net free Black Sea", financially supported by the Ocean Conservancy's Small Grants Program - Global Ghost Gear Initiative" aims to continue Mare Nostrum's efforts to reduce the impact of nets or fishing gear accidentally lost or abandoned in Black Sea waters.

The main objective of the project is to remove at least 1500 kg of lost or abandoned nets or fishing gear from Black Sea waters with the help of interest groups such as fishermen's associations or divers. The project also addresses as many gaps as possible in the reporting and disposal of lost or abandoned fishing gear. This will help raise awareness in tackling the problem of marine litter from fishing activity.

CONTEXT

Marine ecosystems, with their complex balance and vast biodiversity, have long faced challenges from human interventions. Among these, the phenomenon of abandoned, lost and discarded fishing gear (ALDFG) stands out as a particularly dangerous threat. The origins of this problem can be traced back to the beginning of modern commercial fishing from the 20th century onwards. However, since the second half of the century, with the use of synthetic and long-lasting fishing gear, the persistence and longevity of ALDFG has become an urgent environmental concern.

Recent scientific assessments, using remote sensing and on-site monitoring, conservatively estimate that a staggering 640,000 to 800,000 tonnes of fishing gear ends up in our oceans annually as ALDFG.

Managing derelict, lost and discarded fishing gear in the Black Sea: a multilateral approach for sustainable practices and a healthy environment

In the context of the unique biogeographical features and socio-economic landscape of the Black Sea, addressing the problem of abandoned, lost and discarded fishing gear (ALDFG) requires a complex combination of traditional knowledge, technological innovation and cooperative regional governance.

1. A fundamental principle is **to prevent** the loss of tools. This involves regular training sessions for anglers, emphasising proper gear handling, maintenance and deployment, using the collective wisdom of the region's experienced marine professionals. By incorporating these practices, inadvertent losses due to wear and tear, entanglements or adverse weather conditions can be greatly reduced.
2. A synergistic approach involves **integrating technology**. The application of Radio Frequency Identification (RFID) tags, Global Positioning System (GPS) and back-up beacon systems on fishing gear provides real-time tracking and monitoring, as well as reducing the rate of gear loss. This not only aids immediate recovery efforts when gear is lost, but also establishes a framework of accountability, discouraging intentional abandonment.
3. Recognising the transboundary nature of marine ecosystems, collaborative regional initiatives are imperative. Black Sea countries would benefit from establishing a common database to monitor ALDFG hotspots and develop joint recovery missions. Such cooperative efforts, based on mutual ecological and economic interests, can amplify the effectiveness of mitigation strategies.
4. In addition, the introduction of **economic instruments** can serve as strong incentives for sustainable practices. Deposit schemes, in which fishermen pay a security amount for gear that is returned upon safe retrieval, can be adapted to the Black Sea context, ensuring the economic vitality of the fishing community and promoting gear care. In parallel, the development of dedicated port facilities for gear repair and recycling can catalyse a shift towards a circular economy model.
5. Lastly, the role of the legislative framework cannot be underestimated. Adapted to the specific challenges of the Black Sea, policies must mandate regular inspections of vessels and fishing gear, setting rigorous standards. Together with community engagement programmes that cultivate a sense of ownership and responsibility, such regulations can ensure holistic and sustainable ALDFG management.

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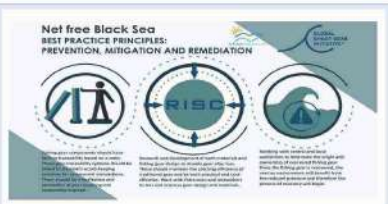
www.ghostgear.org



We would very much like to encourage you to become a member/stakeholder of the #NetFreeBlackSea initiative.

For the subscription please send an email to office@marenostrum.ro with the subject "I want to be part of Net Free Black Sea initiative"

Developing Optimal and Open Research Support for the Black Sea

Our journey so far...

Stakeholder Engagement

We're speaking to scientists, policymakers, entrepreneurs and citizens on what they need to develop a sustainable **Blue Economy**.

2021

2022

Black Sea Field Campaigns

We're expanding the **monitoring capability** of the Black Sea and testing new approaches and techniques for harmonised data acquisition.

Revolutionary Data Platform

We're developing the Black Sea's first System of Systems (SoS) platform, delivering in-situ, earth observation and modelling **data in real-time**.

2023

2023

Increasing Ocean Literacy

Our Ocean Literacy Network are delivering a series of **events and activities** that engage all citizens in the science of the Black Sea.

Now...

Black Sea Accelerator Launch

We're delivering training, new tools and services to match innovative business ideas with investors, **unlocking funding opportunities** and new partnerships.

Talk to us today!

CONNECT WITH US !

@doorsblacksea

www.doorsblacksea.eu

DOORS BLACK SEA

General Coordinator: GeoEcoMar

This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation (H2020-BG-2014-2) under grant agreement No 101003618.

Boosting Blue Economy Businesses and Building Resilience for Adaptation to Climate Change in the Black Sea Region

INTERNATIONAL PERMANENT SECRETARIAT
BLACK SEA UNIVERSITIES NETWORK
Web: https://bsun.org/
E-mail: office@bsun.org

ARSINOE Project Coordinator:
University of Thessaly - Greece

ARSINOE CS#6: Black Sea Partners:
Black Sea Universities Network - Romania
Aristotle University of Thessaloniki - Greece
Middle East Technical University - Türkiye
Athens University of Economics and Business - Greece
National Research Institute for Biological Sciences - Romania
Organization of the Black Sea Economic Cooperation - Türkiye
Spanish National Research Council - Spain

ARSINOE CS#6: Black Sea - Romanian Sub-case Partners:
Black Sea Universities Network - Romania
National Research Institute for Biological Sciences - Romania

Two innovative technologies are proposed for the Danube Delta:
(1) **investigation of climate change impact on the bacteria present** in Danube Delta waters with a ***selective biofiltration*** role for evaluating and enhancing the resilience of biofiltration bacteria;
(2) **farming on salted soils** based on the evaluation of the complexity of various abiotic factors that contribute to the ***plant behaviour*** during their lifetime.
= integrating the assessment of local ecosystem state and future pathways, under climate and socioeconomic scenarios, with specific regard to ARSINOE focus on systems innovation and resilience building of local communities.

SYSTEMS INNOVATION APPROACH

The Systems Innovation Approach addresses the growing complexity, interdependencies and interconnectedness of modern societies and economies. It focuses on the functions of the cross-sectoral system "as a whole" and on the variety of actors.

CLIMATE INNOVATION WINDOW

The Climate Innovation Window is the EU reference innovations marketplace for climate adaptation technologies. It facilitates the market exploitation of validated tools and technologies by interested parties.

CLIMATE CHANGE ADAPTATION SOLUTIONS IN THE INNOVATION PACKAGES:

Pathways to solutions are co-created and co-designed by stakeholders to form an innovation package for resilience to climate change.

ACHIEVEMENTS

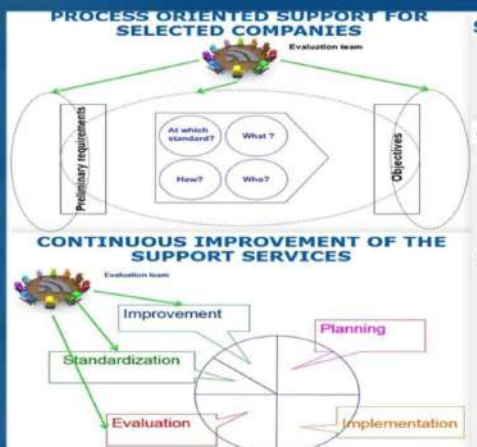
- 4BIZ PROJECT COUNTRY REPORTS
- 4BIZ CONSOLIDATED REGIONAL REPORT
- COMPARATIVE ANALYSIS OF THE BEST PRACTICES OF OTHER REGIONS AND SEA BASINS
- ORGANIZATION OF THE REGIONAL BROKERAGE EVENT "BOOSTING BLACK SEA BLUE BIZ - 4BIZ"
- 4BIZ THEMATIC WORKSHOPS
- MOU 4BIZ - DBAN PROJECTS

The **aim** of the project is to **develop a collaboration framework** that will bring together blue economy stakeholders in EU and eligible non-EU Black Sea countries **to identify and tackle local capacity building needs to boost innovation, digitalization and investment in the Black Sea blue economy** with the main focus on fisheries and aquaculture, coastal and maritime tourism and maritime transport.

4BIZ
Boosting the Blue Economy in the Black Sea Region

4BIZ Project Coordinator:
Black Sea Universities Network - Romania

Project Partners:
International Center for Black Sea Studies - Greece
Chamber of Commerce, Industry and Agriculture of Galati - Romania
National Technical University of Ukraine Igor Sikorsky Kyiv Polytechnic Institute - Ukraine
Public Union Ukrainian Maritime Cluster - Ukraine
LEPL Teaching University – Batumi State Maritime Academy - Georgia
Eastern Black Sea Development Agency - Türkiye
Marine Cluster Bulgaria - Bulgaria
Bucharest University of Economic Studies - Romania



SELECTION OF PILOT COMPANIES
- Data collection
- Performance analysis
- Image analysis
- SWOT Analyses

4BIZ SUPPORT SERVICES
Hackathons
Coaching
Mentoring
Training
Business Counselling Activities
R+D Based Support
HR Recruit and Development
Legal and Fiscal Assistance
Boot camps
Ecosystem Networking
Brokerage events
Fora for SMEs and Investors

Photo: 4BIZ Regional Brokerage Event, Batumi

Supporting science-based policy making for Blue Economy in the Black Sea

Authors: Georgia Chantzi (ICBSS); María Pérez (CETMAR), Rosa Fernández (CETMAR)

The overall objective of BRIDGE-BS is to advance the Black Sea's marine research and innovation to co-develop Blue Economy pathways under multiple stressors for the sustainable utilization of ecosystem services. With this aim, the project develops an ecosystem-based management framework to enable policy uptake and foster citizen engagement.

PILLARS

Science-Policy Dialogue | **Knowledge transfer** | **Upskilling**

2022

External best practices

BRIDGE-BS knowledge outputs

2023

Science-Policy Forum

IDENTIFICATION & COLLECTION

DESCRIPTION

VALIDATION

ANALYSIS

SELECTION

On-line reflection webinars

2024

Black Sea Intergroup

Summer school young policy-scientists

KT PLANNING & DEVELOPMENT

2025

SCIENCE & POLICY ACTORS

BRIDGE-BS

Enhanced science-policy interaction

International Policy Brief

Blue Roadmap for the Black Sea

bridgeblacksea.org

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 101000240.

BLACK SEA CMA STAKEHOLDER CONFERENCE 2023

Common Maritime Agenda for the Black Sea

European Commission

Ministerul Afacerilor Externe

Joining efforts for a sustainable, modern, and competitive blue economy in the Black Sea

SUSTAINABILITY ASSESSMENT SUPPORTING BLUE ECONOMY IN THE BLACK SEA

PathoGelTrap™ Sustainable Prevention in Aquaculture

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LOMARTOV

INTRODUCTION

Aquaculture is the farming system technology for aquatic organisms including fish, molluscs, and other aquatic plants. The technology provides answers to the growing demand for fishery products in the Black Sea as in the rest of the world. However, aquaculture technology and its management need to improve to produce with the highest qualified and efficient techniques which guarantees the safety and health of both the aquatic and human environments. Thus, the application of assessment tools combined with research and development (R&D) needs to be specifically adapted, progressively promising energy efficiency, biodiversity conservation, and respect for the environment.
This is evaluated in the European funded project PathoGelTrap, in which novel technologies as solutions for sustainable aquaculture are being developed. The sustainability study will support the achievement of the European Blue Economy principles: shaping sustainable Blue Growth in Europe, and further strengthening social and economic benefits, as so could support the potential in the region of the Black Sea.

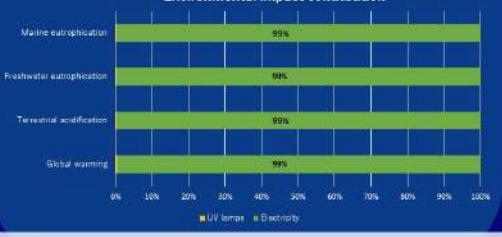
LIFE CYCLE ASSESSMENT

LCA is a material and energy balance applied to the product's system, combined with an assessment of the environmental impacts related to the input and outputs to and from the product system (ISO,2006)

LCA provides criteria for decision-making on issues such as product development, policymaking, and strategic planning.

Electricity is the main hotspot for the assessed aquaculture case, due to the grid mix used in this case.

Environmental impact contribution



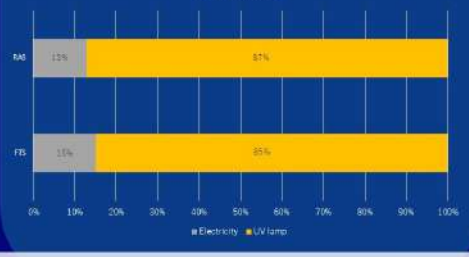
LIFE CYCLE COSTING

LCC considers all the economic development features (OPEX, CAPEX, Investment) according to the entire life cycle of a product or service.

LCC supports for deploying communication, marketing and strategy-making tools.

UV lamp's cost is the most important **hotspot**

Cost impacts



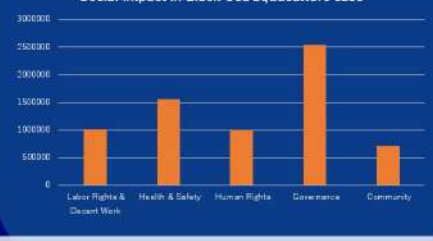
SOCIAL LCA

Same as LCA and LCC, these s-LCA studies are recognized by the normative ISO framework, based on LCA methodology.

The s-LCA allows to identify the social hotspots , while establishing strategies for mitigating social risks.

Governance problems and Health and Safety issues are the focus of possible **social problems.**

Social impact in Black Sea aquaculture case



LINKAGES WITH THE **COMMITMENTS** TOWARDS A COMMON MARITIME AGENDA FOR THE BLACK SEA

Introducing the LCA methodology will support to improve the opportunities of the R&D&I on the Black Sea and identify potential pathways to reduce the environmental impacts on the marine and coastal ecosystems.

SUPPORTING THE CMA COMMITMENTS:

- *Priority 1: Ensure the protection and sustainability of the marine ecosystem*
- *Goal I: Healthy marine and coastal ecosystems*
- *Priority 3: Support sustainable fisheries and aquaculture in the Black Sea*
- *Goal II: A competitive, innovative and sustainable blue economy for the Black Sea*
- *Priority 1: Foster innovative business models, stimulate research and innovation, and sustainable growth and up-to-date jobs.*

Calculating the associated life cost of the technologies will help to evaluate the system capacities and therefore the dedicated investment opportunities to promote the best practices and techniques around the Black Sea blue economy.

SUPPORTING THE CMA COMMITMENTS:

- *Goal I: Healthy marine and coastal ecosystems*
- *Priority 4: Supporting innovative marine research infrastructures in the Black Sea*
- *Goal III: Fostering Investment in the Black Sea blue economy*
- *Priority 1: Improve access to financial resources and promote sustainable investment in the blue economy*

Considering the social pillar within the technological approaches will contribute to an enhanced Black Sea regional science-policy dialogue while also increasing the social awareness of this marine and coastal ecosystem, including cooperation among key industrial and business actors.

SUPPORTING THE CMA COMMITMENTS:

- *Goal II: A competitive, innovative and sustainable blue economy for the Black Sea*
- *Priority 3: Promote blue skills and blue careers as an engine for innovation and competitiveness*
- *Goal III: Fostering Investment in the Black Sea blue economy*
- *Priority 2. Promote maritime entrepreneurship and clusters*

CHALLENGES

- Aquaculture is a huge opportunity for both coastal and offshore practices when developed in a sustainable manner.
- The future of the Black Sea sustainable aquaculture could be further fostered, by emerging research strategies for aquaculture management and blue skills.
- The aquaculture development must also be accompanied by improvements in social responsibility and awareness, involving all the stakeholders of the value chain. Raising awareness on scaling-up and further evidence of the potential benefits for the Blue Economy: food security, employment opportunities, and economic development in the region is key for social acceptance.
- Aquaculture data collection and sustainable assessment is offering relevant information on the areas for improvement and Sustainable Development Goals achievement.

PROJECT PARTNERS

CSIC · University College Dublin Ireland's Global University · Instytut Fizyki Polskiej Akademii Nauk · Smartwater Planet · Istituto Zooprofilattico Sperimentale delle Venezie · LOMARTOV

PGT™

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PRELIMINARY RESULTS OF ASSESSING THE CUMULATIVE IMPACT OF MULTIPLE HUMAN STRESSORS TO BLACK SEA ECOSYSTEM USING GEOSPATIAL ANALYSIS ROMANIA CASE STUDY

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A BASIN UNDER THE EFFECT OF MULTIPLE STRESSORS

BRIDGE-BS

ADVANCING KNOWLEDGE, DELIVERING RESEARCH, EMPOWERING CITIZENS FOR SUSTAINABLE AND CLIMATE-NEUTRAL BLACK SEA – BRIDGE-BS

WP4 - ADAPTIVE MANAGEMENT

Objectives: develop multi-stressor multi-service adaptive management strategies at basin and selected Pilot scales to boost sustainable Blue Growth (BG), limit human impacts on the Black Sea state, preserving its core ecosystem services (ES) by maintaining a safe operating space.

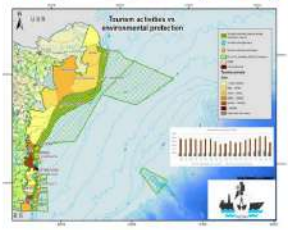
Specific activities:

- estimating the cumulative impacts and risks on Black Sea state and core ES considering future scenarios and management decisions;

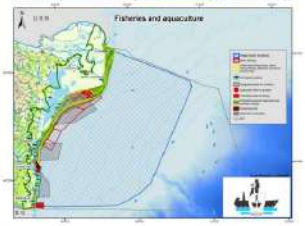
Pilot Site 3 – Danube Delta . Context: Geographical location.

- *It includes EEZ waters up to 70 m isobath and coastal administrative units (18,500 km2)*
- *coastal zone: 2 municipalities (Constanta and Mangalia), 4 cities (Navodari, Eforie, Techirghiol and Sulina) and 13 communes (local administrative units- LAU), accounting for ca. 3,575 km2)*
- *Coastal length of 244 km (6% of the total length of the Black Sea coast)*
- *it includes both natural shore (beaches and cliffs - approx. 84%) and "built" shoreline, approx. 16% (ports, protective hydraulic structures).*

Marine and coastal activities and uses



- ✓ *Fishing activities*
- ✓ *Tourism and leisure*
- ✓ *Land-based activities (urbanization, industrial activities, agriculture, port activities)*
- ✓ *Maritime transport*
- ✓ *Oil and gas extraction and underwater cables and pipelines,*
- ✓ *Dredging and dumping, coastal protection works*



Risks and pressures

Anthropogenic pressures

- ✓ *Input of fertilizers and organic matter – eutrophication (algal blooms,*
- ✓ *hypoxic/anoxic events)*
- ✓ *Input of synthetic and non-synthetic substances – pollution*
- ✓ *Coastal erosion*
- ✓ *Physical pressures (abrasion, seabed loss/ sealing)*
- ✓ *Introduction of marine litter and energy (underwater noise)*
- ✓ *NIS introduction*
- ✓ *Overfishing and illegal fishing*

Natural pressures

- ✓ *1. Climate changes (shifts in temperature and salinity regimes, increase of extreme events frequency)*

Ecosystem components

1. Benthic habitats

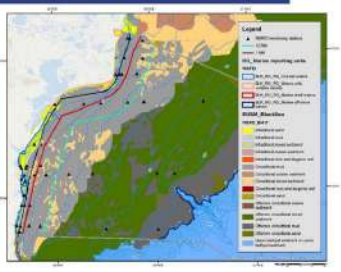
- *Black Sea infralittoral mud*
- *Black Sea infralittoral sand*
- *Black Sea circalittoral mixed sediment*
- *Black Sea offshore circalittoral mud*

2. Fish (commercial and non-commercial species)

3. Essential fish habitats (nursery and spawning areas)

4. Marine mammals

5. Sea birds

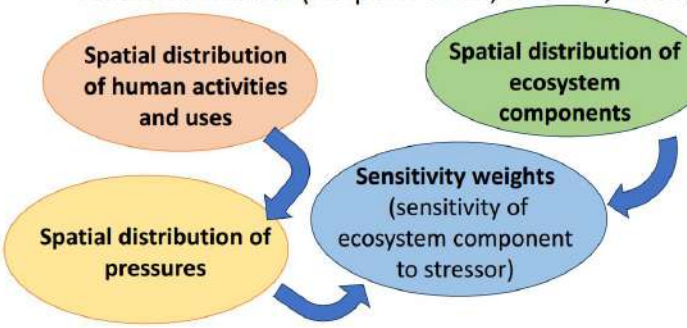


Policy - objectives

- ❑ *Marine Strategy Framework Directive*
- ❑ *Maritime Spatial Planning Directive and National ICZM Strategy*
- ❑ *Program for Fishery and Aquaculture 2021-2027 – promotes blue growth initiatives in the fishery and aquaculture sectors*
- ❑ *Integrated Tourism Strategy for the Constanta county 2019 – 2028 – promotes sustainable development and diversification of tourist products*
- ❑ *Integrated strategy for the sustainable development of the Danube Delta - main objective is to support planning and environmentally sensitive development of the Danube Delta region*
- ❑ *National Strategy for the Sustainable Development of Romania 2030 – it promotes the sustainable development of Romania by focusing on Sustainable Development's three dimensions: economic, social, and environmental*
- ❑ *National Climate Change and Low Carbon Growth Strategy – integrates mitigation and adaptation actions for developing a climate resilient, low carbon and green economy*

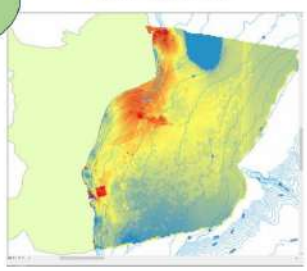
Cumulative impacts and risks

Additive Model (Halpern et al., *Science*, 2008)



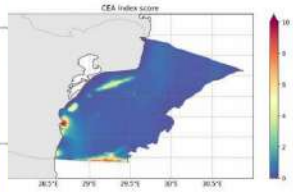
Preliminary results

Stressor index (unweighted) based an all-stressor data



Stressor index (unweighted) based only on human activities

Cumulative effects assessment



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INCDPM

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Project 101124670 - Black Sea SIERRA

Harnessing complementary curricular preparedness via sustainable management in response to civil and military pollution on the coastline, tributaries and lagoons in Black Sea's North, West, South zone

Authors: Eng. DEÁK György PhD. Habil.*; Eng. TUDOR Georgeta; Dr.eng. MATEI Monica; Dr.eng. BOBOC Mădălina; Dr. ecol.HOLBAN Elena
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Granting authority: European Climate, Infrastructure and Environment Executive Agency (CINEA)
Programme: *European Maritime, Fisheries and Aquaculture Fund (EMFAF)*
Call: *EMFAF-2023-PIA-FLAGSHIP - Regional flagships projects supporting sustainable blue economy in EU sea basins*
Topic: *EMFAF-2023-PIA-FLAGSHIP-2-BLACK - Harnessing preparedness and response to marine pollution in the Black Sea*
Type of action: *EMFAF Project Grants*
Starting date: *October 1st2023*
Duration: *36 months*
Budget: *749 999.38 Euro* **Grant** *599 999.50 Euro*

PROJECT SUMMARY

The ***Black Sea SIERRA*** project will prepare and adapt decision-makers' response capacity to current/emerging marine pollution, by coordinated cross-border response to armed conflict contamination. The consortium, with experience in the Black Sea (RO, BG, UA, TR) and Mediterranean (IT) basins lists two ***priorities***:

- ***Identifying specific types of marine pollution***, including war related contaminants, on an area of cca. 90,000 km2 along the Black Sea shoreline (territorial, international waters), tributary rivers, and lagoons; ***Quantifying added marine pollution from armed conflicts***, by detecting new contaminants and by hotspot diachronic and synchronic assays of undisturbed core sediments (thru project risk maps); ***Detection/assay of novel hazardous substances***: war-generated/emerging contaminants, microplastics, pesticides, to assess the impact/threats on key marine biodiversity; A map of underwater noise pollution will assess its impact on biodiversity (dolphins).
- The research activities will grant the premises to the ***management plan*** and ***training curricula*** and outputs on armed conflict contribution to marine pollution; Providing a ***handbook on marine pollution assessment methodology and sources***, including armed conflicts in the Black Sea region; Development of ***remedial measures*** to be implemented by competent authorities; Conducting ***training workshops*** and ***meetings with decisional stakeholders and policymakers*** to increase response capacity, and to optimize cooperation of Black Sea participant countries.

BLACK SEA SIERRA CONSORTIUM

Assembly of 7 organizations from ***3 EU countries (RO, BG*** and ***IT)*** and from ***2 non – EU countries (UA and TR)***, it consists of ***1 R&D institute (COO - RO)***, ***3 academies (RO, BG, UA)*** and ***3 universities (TR, IT, RO)*** and demonstrates a high-level expertise, providing the required infrastructure to support the project objectives' implementation.

Coordinator RO, Bucharest — ***NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT IN ENVIRONMENTAL PROTECTION (INCDPM)***
High-level R&D institution in the environmental protection field, with more than sixty years of cumulated experience at national and international level, INCDPM carries out interdisciplinary research activities, developing "win-win" preventive solutions, adopted in an environmental-friendly manner and targeted on ensuring the favorable conservation status of ecosystems and their biodiversity.

P1 BG, Varna — ***INSTITUTE OF OCEANOLOGY BAS (IO-BAS)***
IO-BAS conducts fundamental and applied research in the field of oceanography in accordance with the national priorities and global trends. The research, applied science and expert work are aimed at developing a strategy for sustainable development and management of the Black Sea ecosystem.

P2 IT, Palermo — ***E.M. ASSOCIAZIONE A.R.C.E.S. (ARCES)***
ARCES is providing an inter-disciplinary paradigm, most being focused on blue economy and in particular conservation of marine biodiversity: protection and safeguarding of the environment, Blue and circular economy, organization of events for the dissemination of research results of implemented projects and capitalization with the aim of creating clusters.

P3 TR, Ordu — ***ORDU UNIVERSITESI (ORDU)***
ORDU is one of the largest institutions focusing on the marine science within the Black Sea coasts of Turkey, through their research departments, the engineering disciplines provide hydrodynamic calculations, marine science department will analyse the impacts on the ecosystems.

P4 UA, Kyiv — ***SCIENTIFIC HYDROPHYSICAL CENTRE OF THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE (SHC-NASU)***
The primary organization responsible for the advancement of oceanographic research at the Ukrainian Academy , their mission addresses the implementation of hydro-physical research, operation of an automated database of oceanographic data, improvement and development of data collection and processing technologies.

P5 RO, Constanta — ***MIRCEA CEL BATRAN NAVAL ACADEMY (MBNAR)***
Through scientific research, development, innovation, and technology transfer, MBNAR generates and disseminates knowledge by carrying out initial and continuous training for university students.

P6 RO, Iasi — ***GHEORGHE ASACHI TECHNICAL UNIVERSITY OF IASI (TUIASI)***
As one of the nation's oldest and most prestigious institutions, preserving a notable tradition in engineering, scientific, and cultural education, TUIASI has a distinguished local, national, and worldwide presence and educates highly skilled professional engineers capable of meeting the innovation, research, and development needs of the society

OBJECTIVES and IMPLEMENTATION

- **O1** Securing project performance by meeting the budget and scheduled timescales objectives throughout management structures and procedures implementation.
- **O2** Identification and quantification of the ***marine pollutants of critical importance*** in the North, West, and South of the Black Sea, with special emphasis on ***emerging pollutants, microplastics, nutrients, algal blooms, noise pollution***, and ***armed conflict-related pollution***.
- **O3** Assessment of ***contaminant bioaccumulation*** in the North, West, and South Black Sea region.
- **O4** Integrative ***spatial representation*** and ***potential risk prioritization*** of ***marine pollution***, including armed conflict-related contaminants in the North, West, and South of the Black Sea region.
- **O5** Identification of ***hotspot locations***, quantification of ***specific pollutants*** connected to armed conflicts, and ***remedial measures***
- **O6** Establishing the ***decision-making players*** (authorities and organizations), ***reaction strategies***, and ***management tactics*** for marine pollution
- **O7** Development of a ***sustainable management plan for marine pollution – training curricula***
- **O8** Preparation of intended ***dissemination materials*** for ***stakeholder decision-making support***, to increase the knowledge and awareness, and grant access of the large public to the project's outcomes

WP1 | O1 | Lead: COO - INCDPM | **Project management and coordination, development, and implementation of consortium management guidelines**

Project performance

WP2 | O2 | Lead: P3 - ORDU
Assessment of pollution levels in the Black Sea region (coastal zone, tributary rivers, and lagoons), generated by civil and military activities

WP3 | O3, O4 | Lead: COO - INCDPM
Identifying major biodiversity components threatened by pollution (bioaccumulation) in the coastal zone, tributary rivers, and lagoons of the Black Sea

Quality data sampling

WP4 | O5 | Lead: P4 – SHC-NASU
Remedial measures and long-term reaction plans for particular contaminants in the Black Sea region associated with armed conflict

Marine pollution impact; BAT

WP5 | O6, O7 | Lead: P1 – IO BAS
Elaboration of a complementary sustainable management plan in response to civil and military marine pollution in the Black Sea

WP6 | O8 | Lead: P2 - ARCES
Dissemination, instruction programs in sustainable and integrated management, prompt reaction to novel contaminant categories, and conservation of marine biodiversity

Develop and optimize regional science-policy dialogue and training

EXPECTED OUTCOMES and RESULTS

- ❑ Policy briefs
- ❑ Consortium methodological guide for sampling and laboratory analysis of particular and/or specific pollution types
- ❑ Report on regional marine water pollution types and identification of the relevant indicators for the N, W and S region of the Black Sea
- ❑ Database of regional marine water pollution types and identification of the relevant indicators
- ❑ Report on bioaccumulation levels, including significant indicator trace elements, in extreme contamination levels, in the Black Sea
- ❑ Database bioaccumulation levels, including significant indicator trace elements, in
- ❑ extreme contamination levels, in the Black Sea
- ❑ Spatial and numeric models and simulations datasets concerning the spatial distribution and dispersion circuits of contaminants in the Black Sea
- ❑ Integrated regional pollution report and database including armed conflicts
- ❑ Monitoring guide for armed conflict related environmental pollution
- ❑ Marine pollution remedial solution prototype
- ❑ Relevant authorities / organizations in charge of reaction to marine environment pollution
- ❑ Complementary sustainable management plan of response strategies to civil and military marine pollution
- ❑ Complementary training curricula for optimized response capacity to marine pollution problems, including armed conflicts
- ❑ Training courses and local/national workshops – Romania, Bulgaria, Ukraine and Turkey
- ❑ General workshop and meetings with the decisional stakeholders and policymakers in the Black Sea region including EU representatives

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily express those of the European Union or European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

Co-funded by the European Union

Stakeholder Engagement in the Black Sea for a Sustainable Blue Economy

The H2020 funded BRIDGE-BS & DOORS projects are implementing the Black Sea Strategic Research and Innovation Agenda which is the scientific pillar of the Common Maritime Agenda for the Black Sea. In synergy, both projects aim at developing Blue Economy Strategies for the Black Sea by engaging local and national stakeholders

BRIDGE-BS

Living Labs

Multi Actor Forums

DOORS BLACK SEA

BRIDGE-BS is implementing Living Labs (LLs) in the Black Sea coastal regions bringing **local stakeholders at the core of the research activities** to empower **local communities** for a sustainable management of Black Sea ecosystems and humain activities, breaking sectoral silos and ensuring a systemic and sustainable approach for the development of the Blue Economy in the region.

The success, value, and impact of DOORS will be shaped by the effectiveness of how stakeholder engagement is designed. The Multi-Actor Forums (MAFs) pull in national stakeholders from a range of backgrounds to help co-design the DOORS System of Systems for the Black Sea and support the formulation of strategies that will contribute to the sustainable development of the Blue Economy in in the region.

A complementary approach to engage stakeholders in local LLs and **national MAFs**, within 5 Black Sea countries simultaneously, representing public authorities and private industry, civil society and academia, from the Blue Economy sectors

Step 1: Identify key ecosystem services, risks and pressures; Exchange on challenges, needs and opportunities for the Blue Economy;

Step 1: Pinpoint the economic sectors with the highest importance along the Black Sea coast.

Step 2: Reach a **common understanding of the issues** at stake across sectors. **Co-develop a VISION** for the sustainable future of coastal communities

Step 2: Identify the barriers and opportunities for supporting blue economy in the Black Sea region.

Step 3:
Co-design ecosystem adaptive management recommendations and **Blue Economy transformative pathways**

Step 3:
Co-design innovation pathways to fill in National Blue Economy Policy Gaps and Needs

Support the Accelerator program for innovation uptake in the Black region

BRIDGE-BS High Tech Summit

ACKNOLEDGEMENT & CONTACTS

These projects have received funding from the European Union's Horizon 2020 research and innovation programme; BRIDGE-BS project under grant agreement No 101000240. DOORS project under grant agreement No 101000518.

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SHORE: EmpOweR Students as the agents of cHangE

CONSORTIUM: YILDIZ TECHNICAL UNIVERSITY (LP), YILDIZ TEKNOLOJI GELISTIRME BOLGESI TEKNOPARK ANONIM SIRKETI, EURONOVIA, MARE NOSTRUM NGO, UNIVERSITY OF PADUA, RKSOFT BILISIM TEKNOLOJILERI A.S, VIENNA UNIVERSITY CHILDREN'S OFFICE, TURKISH MARINE RESEARCH FOUNDATION, EXPLORA, EU&PRO CENTRUM, BUDAPEST OF UNIVERSITY OF TECHNOLOGY AND ECONOMICS, CROWHELIX LIMITED IRELAND, F6S INNOVATION, WSB AKADEMIA

SHORE will be focusing on engaging & mobilizing students, teachers, and schools to implement the Mission Ocean objectives to increase ocean literacy with the help of community activities & cooperation projects.

SHORE project will last 36 months and cover five different regional areas with its 14 consortium partners.

SHORE will provide grantsto 100 schools through three open call periods for proposals to support blue projects for a maximum amount of up to 10.000 euro per grant.

A digital platform will be set up to monitor school projects, and provide a virtual learning environment system including rewards and badges.

Public voting session will be held to raise awareness & engagement, create a wider audience and select the best school project which will receive the "Ocean Ambassador/ Literate of the Year Award.

Ocean Literacy Action Center will be established within the YTU to coordinate public activities and bring researchers and public together to enhance ocean literacy during the Project.

Follow SHORE!

shore-community @shore.school.community @shore-community SHORE-Community

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ARSINOE

CLIMATE RESILIENT-REGIONS THROUGH SYSTEMIC SOLUTIONS AND INNOVATIONS

3RD OPEN TENDER FOR INNOVATIONS

NOW RECEIVING APPLICATIONS ON THE FOLLOWING CATEGORIES

Smart and Harmonized Monitoring

Digital Solutions for Monitoring and Conserving Biodiversity

Decision Support Tools for Holistic and Integrated Planning

APPLY UNTIL DD.MM.YY

KEY FACTS

- Selected innovators may receive up to **EUR 50.000**.
- Innovations may be **social**, **governance**, and **technical**.
- **Black Sea Strategic Research and Innovation Agenda and its Implementation Plan** (SRIA IP) prioritize a thorough assessment of **ecosystem resilience** and the impact of **climate change** and human activities on **biodiversity**. This Tender is closely tied to **SRIA IP Pillar 3**, Building of Critical Support Systems and Infrastructures for the Benefit of Black Sea Communities.

Scan for the SRIA IP

Scan for more information about the Tender

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This project has received funding from the European Union's Horizon 2020 innovation action programme under grant agreement 101037424

BLUEING THE BLACK SEA (BBSEA)

IN SUPPORT OF THE COMMON MARITIME AGENDA FOR THE BLACK SEA

How can the World Bank and partners stimulate investment in the blue economy for a pristine and thriving Black Sea?

Blueing the Black Sea is a regional program targeting sustainable Black Sea management, addressing pollution, fisheries, and regional cooperation. It seeks to reduce marine pollution, boost the Blue Economy, and enhance national climate strategies in Black Sea countries including Bulgaria, Georgia, Romania, Turkey, Ukraine, and Moldova.

Supported by a Portfolio of Analytical Work

This Week! Launch of *Turning the Tide of Pollution*

This first-of-its-kind regional pollution analysis was conducted under BBSEA in collaboration with Black Sea countries (Bulgaria, Georgia, Moldova, Romania, Türkiye, and Ukraine) and supported by PROBLUE TF to enhance and protect the Black Sea's environmental quality as a shared public resource.

In The Works

- Guidelines for nature-based solutions (NBS) for pollution prevention in the Black Sea and
- Feasibility study on the Blue Wager Program for Türkiye.

Future Activities

- Policy analysis on the marine litter value chain
- Business plan for coastal tourism adaptation in Georgia

Mobilizing Finance

The GEF is investing significantly in improving environmental sustainability in the Black Sea region, with an initial grant of US$6.4 million from the IW Water window. The project's primary objectives are knowledge exchange, standards development, and promoting public-private partnerships through innovative financing methods. Initially, the investments focus on Georgia, Moldova, Turkey, and Ukraine in accordance with GEF policies. *Moldova will receive an additional funding of approximately US$8 million to combat nutrient pollution in the Dniester district, aiming to reduce coastal pollution in the Black Sea. This project enhances institutional capacity and implements Nature-based Solutions (NbS) like afforestation, reforestation, and wetland restoration.*

BLACK SEA ACCELERATOR

FOR A SUSTAINABLE BLUE ECONOMY

*The accelerator is facilitated by the H2020-funded **BRIDGE-BS** and **DOORS** projects. **BRIDGE-BS** focuses on advancing knowledge, delivering research, and promoting sustainable and climate-neutral the Black Sea. **DOORS** works on developing optimal and open research support for a healthy, productive, and resilient Black Sea.*

WHAT IS IT?

The accelerator boosts sustainable businesses in the Black Sea's Blue Economy by providing services for market analysis, pitching skills, and funding opportunities.

WHAT DOES IT AIM?

The goal is to turn science into future business opportunities and support sustainable, innovative, and circular blue economy projects.

WHO CAN BENEFIT FROM IT?

The main target is Black Sea-based organizations, including companies, start-ups, and universities, but non-regional applicants looking to expand into the region are also welcome.

WHO CAN BE SUPPORTED?

Both established and emerging solutions are eligible, but detailed explanations are required for solutions in the final application stage.

VISIT DOORS BLACK SEA WEBSITE FOR MORE!

WHY YOU SHOULD JOIN ?

- MENTORING & SUPPORT
- IDEA VALIDATION
- STRONGER NETWORK
- SKILLS DEVELOPMENT
- ACTUAL FEEDBACK
- MAXIMIZED POTENTIAL

VISIT BRIDGE-BS WEBSITE FOR MORE!

WATCH THE INTRODUCTORY VIDEO TO LEARN MORE!

RELEVANT SECTORS & TECHNOLOGIES

- Ocean Observation & Monitoring
- Tourism & Recreational Activities
- Sustainable & Renewable Marine Energy
- Nature-based Solutions & Services
- Ports, Transport & Logistics,
- Fisheries & Aquaculture Practices
- Blue Biotechs & Related Products

This BRIDGE-BS and DOORS projects has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 101000240 and No 101000518.