

# IMPROVING ENVIRONMENTAL MONITORING IN THE BLACK SEA (EMBLAS)

ISSUE N 1 ●

September 2014

## Project for a good reason

EMBLAS Project was initiated for a good reason and striving for changes. Credibility to measures taken for the Black Sea environmental protection cannot be granted without knowing the state of the Sea, in other words, without a regular and integrated monitoring. However, during two past decades the Black Sea monitoring was not only insufficiently paid attention to, it also remained old-fashioned, missing developments in methods and use of modern techniques.

The first phase of the EMBLAS Project (January 2013 – December 2014) had its inception meeting in June 2013. The Project team believes that EMBLAS will not only result in the Black Sea monitoring improvement, but also raise the profile of environmental protection in the Agenda of relevant authorities at the national and regional level. The Project office is based in Odessa, Ukraine.

## Tips for the EMBLAS Project

EMBLAS is a part of the United Nations and the European Commission (EC) partnership established in pursuit of shared development goals. The Project is managed by the UNDP and co-funded by the EC and the UNDP.

EMBLAS is a forward looking action, and it is expected that its influence will be felt far beyond the life-span of the project itself.

*Welcome to the first issue of the **EMBLAS** Project newsletter. This and subsequent issues will keep you informed on the project activities and the results achieved. The newsletter is addressed to relevant stakeholders and public. It is available on the web at:*

<http://www.emblasproject.org/>

*The Project Team*



The Black Sea

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## GEORGIA

Shoreline length: 310 km

Black Sea catchment area:

32,816 km<sup>2</sup>

The biggest rivers flowing into the Black Sea: Chorokhi, Rioni

Population of the Black Sea Coastal Zone: 650,000

The biggest cities on the Black Sea coast: Batumi, Poti

## RUSSIAN FEDERATION

Shoreline length: 475 km

Black Sea catchment area:

49,826 km<sup>2</sup>

The biggest rivers flowing into the Black Sea: Mzymta, Sochi

Population of the Black Sea Coastal Zone: 1,159,000

The biggest cities on the Black Sea coast : Novorossiysk, Sochi

## UKRAINE

Shoreline length: 1,628 km

Black Sea catchment area:

367,230 km<sup>2</sup>

The biggest rivers flowing into the Black Sea: Danube, Dnieper, Dniester, Southern Bug

Population of the Black Sea Coastal Zone: 6,800,000

The biggest cities on the Black Sea coast : Odessa, Kherson

## Beneficiary Countries



## EMBLAS I objectives and activities

The overall objective of the Project is to set up initiatives that will help improve the protection of the Black Sea environment. The Project is addressing the overall need for support in protection and restoring the environmental quality and sustainability of the Black Sea. The specific objectives are: i) Improve availability and quality of data on chemical and biological status of the Black Sea, in line with expected MSFD and the Black Sea Strategic Action Plan needs; and ii) Improve partner countries' ability to perform marine environmental monitoring along with the MSFD principles taking into account the Black Sea Diagnostic Report ([www.blacksea-commission.org](http://www.blacksea-commission.org)).

The following activities are planned in the Project:

- Review of the national monitoring systems and tools for assessing of the data obtained from monitoring activities;
- Support to implementation of countries obligations under the Bucharest and other related Conventions and Agreements;
- Development of cost-effective and harmonised biological and chemical monitoring programmes in accordance with reporting obligations under multilateral environmental agreements, the WFD and the MSFD;
- Assessment of needs regarding laboratory infrastructure, equipment, and training, promotion of recommendations;
- Elaboration and implementation of comprehensive training programme on monitoring methods and quality assurance aiming at adhering to ISO 17025 standard, promotion;
- Preparation of methodology for Joint Black Sea Surveys;
- Further development of the Black Sea Information System, including web-based Black Sea Water Quality Database prototype.



Hersones (present city of Sevastopol, Crimea ) remembers the Black Sea as Pontos Euxinos (Hospitable Sea)

## Project partners

While EMBLAS is currently working on the new-fashion methodological basis for the Black Sea monitoring, concepts for Joint cruises, capacity building, innovative data management and Black Sea-related assessments of new models, the Project partners also continue observing the Black Sea and sustain their long-term investigations. All partners in EMBLAS are among the excellence organizations dealing with the Black Sea, some of them are the oldest in the region:

**Institute of Biology of Southern Seas** (IBSS, Sevastopol, Crimea)

<http://ibss.nas.gov.ua/?lang=en>

**Marine Hydrophysical Institute** (MHI, Sevastopol, Crimea)

<http://www.mhi.nas.gov.ua/>

**P.P. Shirshov Institute of Oceanology** (SIO-RAS, Moscow, Russia)

<http://www.ocean.ru/eng/>

**State Oceanography Institute** (SOI, Moscow, Russia)

<http://www.oceanography.ru/> (in Russian)

**Tbilisi University** (TUI, Tbilisi, Georgia)

<http://www.tsu.edu.ge/en/>

**National Environmental Agency** (NEA, Tbilisi, Georgia)

<http://meteo.gov.ge/about-agency>

**Odessa National I. I. Mechnikov University** (ONU, Odessa, Ukraine)

<http://onu.edu.ua/en/>

**Ukrainian Scientific Center of the Ecology of Sea** (UkrSCES, Odessa, Ukraine)

<http://www.sea.gov.ua/index.htm.en>

**Institute of Marine Biology NAS Ukraine** (IMB NASU, Odessa, Ukraine)

**Black Sea Commission Permanent Secretariat** (BSC PS, Istanbul, Turkey)

<http://www.blacksea-commission.org/>

## A piece of history and a story of love to the Black Sea which never ends

Regular and integrated monitoring of the Black Sea dates back to early 1950-s, it was set up by the fathers of the experts participating presently in EMBLAS. They taught us not to treat the sea as a mere source of "goods and services", but always to remember that the Black Sea is a living wonder. We learned from our fathers that the Black Sea always needed our caring hands. Our efforts should never weaken and our eyes should never get shut away from the Black Sea problems. If in a wretched gloom the Black Sea speaks like through "gritted teeth" about its pains and sorrows, we have to be nearby there and listen about them. In EMBLAS we continue listening to the voice of the Black Sea. We may not know well all the numerous legal and policy documents, which call for the protection of the Black Sea. And we do not count on the official commitments of our countries only to protect and preserve the Black Sea. Yet in our love to the Black Sea, including our efforts in EMBLAS, we count on the common sense of those who decide on the future of our environment. Simple and clear we recall in EMBLAS the olden Indian proverb: Only after the last tree has been cut down, only after the last river has been poisoned, only after the last fish has been caught, only then will you find that money cannot be eaten.



Our fathers taught us to love and cherish the sea  
(Photo of Oleg Mamaev, 19....)

## EMBLAS Stakeholders

EMBLAS works with various groups of international and national stakeholders. The national stakeholders include the following types of organisations: ministries, environmental agencies, scientific institutes, municipalities, universities, ports/maritime and protected areas administrations, NGOs and private companies.

Their total number is 191. Some stakeholders contributed to the preparation of the EMBLAS Diagnostic Report. They will be consulted in the process of monitoring revision, development of common indicators, Black Sea assessment models and the Black Sea Information System further developments.

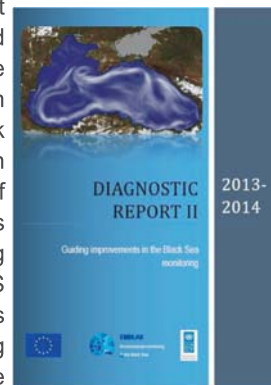
## EMBLAS ACTIVITIES BASIS

EMBLAS is a science/policy interface project. Its activities dwell on the following assumptions:

1. Monitoring is never a single observation in space and time, it is a recurrent sampling implemented with an identified frequency and a number of parameters, arranged at the same sites and in the same time of the year and even the day-time of sampling is well regarded. The monitoring is a system of observations, which allows to conclude on long-term trends, resolve reasons for change and take measures in response to undesirable alterations of the environment.
2. The observations are not enough to ensure for knowledge-based decision-making. The data collected need proper storage and management, including quality control. The data also need proper analyses and assessments, building casual chains. The results obtained require visualization and communication to the people who decide on the measures aimed at protecting the environment.

## EMBLAS I results

**Diagnostic Report:** the major deliverable of the Project. To collect the necessary input information, Questionnaires on the current status of the Black Sea monitoring, data collection and data management in Georgia, Russia and Ukraine were developed and distributed to relevant stakeholders. The Questionnaires also requested information on infrastructure/vessels/equipment used in the Black Sea studies, as well as on training and harmonization needs to improve the BS monitoring. A short version of the Questionnaires was prepared for stakeholders collecting/managing the Black Sea data, including international organisations. The draft EMBLAS Diagnostic Report II (about 400 pp) provides recommendations on revision of monitoring programmes in support of adaptive management of the Black Sea, on required improvements in data collection and management, on capacity building, harmonization and on more efficient use of infrastructures/vessels/equipment in the Project beneficiary countries. All recommendations were based on robust analyses of the Black Sea monitoring status, outlining achievements and gaps.



Black Sea monitoring weekdays

### *EMBLAS lessons learned*

*Economic interest prevails over the desire to protect the environment in the Black Sea region.*

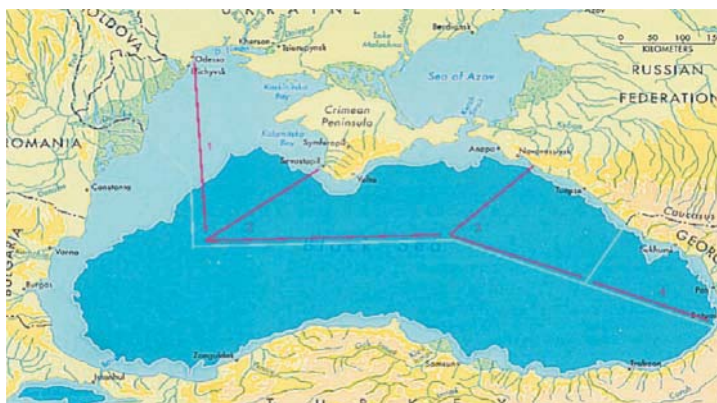
*Most of the stakeholders are not in favor of voluntary provision of information to projects, which aim at advancement of the Black Sea protection. Work with stakeholders requires improvement and capacity-building campaigns.*

*Scientists in the Black Sea region are overloaded, they hardly find the time to properly deal with science, which would generate knowledge-based decision-making in field of sustainable development. Besides, modern technologies and required capacity building are not funded; the Black Sea science is poorly financed in general.*

*People in ministries and governmental agencies are busy to trace compliance with various policy and legal documents, and are burdened with many kinds of national and international level reporting, where they see little value-added of their efforts. 'Reporting' is in need of serious optimization in parallel with better bridging between science and decision-making.*

**The Compliance Indicators.** EMBLAS works in support of the Commission on the Protection of the Black Sea Against Pollution (Black Sea Commission, BSC), which is the regional organisation tracing the Black Sea coastal states' compliance with the Bucharest Convention and its Protocols ([www.blacksea-commission.org](http://www.blacksea-commission.org)). The parties' (Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine) reporting to the Bucharest Convention represented by the BSC is annual and based on a set of agreed indicators. This set was in need of reconsideration and further development taking into account the updated Black Sea Regional Strategic Action Plan ([http://www.blacksea-commission.org/\\_bssap2009.asp](http://www.blacksea-commission.org/_bssap2009.asp)) and the ongoing revision of the Black Sea Integrated Monitoring and Assessment Programme (BSIMAP, [http://www.blacksea-commission.org/\\_bsimap.asp](http://www.blacksea-commission.org/_bsimap.asp)). Draft set of new compliance Indicators was developed by EMBLAS and distributed to partner organisations for commenting. When approved inside the Project this set will be brought to the attention of the BSC - for their consideration and possible adoption. EMBLAS will also help with revision of the BSC reporting formats as soon as the new compliance indicators are brought into use.

**Joint Cruise Methodology.** BSIMAP is based on nationally conducted monitoring, which during the past decades was mostly performed in coastal waters. The EMBLAS Diagnostic Report indicates three major gaps: absence of open-sea observations, no regional component in the BSIMAP and poor tracing of the transboundary character of all major Black Sea environmental problems (eutrophication, pollution, biodiversity/habitat change and living resources decline). Besides, realtime monitoring is hardly developed in the Black Sea region, which is also a major shortcoming, as this kind of monitoring could substantially improve our knowledge on the processes in offshore areas, where in situ monitoring is costly. EMBLAS develops 'Joint Cruise Methodology', which will become an integral component of the BSIMAP, supplementing the national monitoring programmes and advocating for regional cooperation in the Black Sea monitoring.



**Joint Cruise tentative route (Note: The map is so far developed for Georgia, Russian Federation and Ukraine, will be supplemented with the proposals of Bulgaria, Romania and Turkey on transects in their Exclusive Economic Zones)**

**Training Programme in chemical monitoring.** The Programme was drafted taking into consideration the needs identified so that to improve the Black Sea monitoring and generate comparable and quality data. Analysis of these needs is presented in the EMBLAS Diagnostic Report (Chapter IV). First training on "Chemical Methods of Marine Environment Objects Analyses", hosted by the National Environmental Agency of Georgia, was carried out on 15 - 19 September, 2014 in Batumi (<http://emblasproject.org/gallery/training-chemical-methods-of-marine-environments-analyses>). It was devoted to recommended methods of chemical monitoring and associated quality assurance/control, adhering to ISO 17025 standard. The training was attended by representatives of laboratories dealing with the Black Sea monitoring in Georgia, Russia and Ukraine.



**Training in Chemical Monitoring, Batumi, Georgia, 2014**

**The Set of Guidelines and Standard Operational Procedures (SoPs).** The major issue in the Black Sea studies is comparability and quality of data. Addressing these, EMBLAS proposes for use in the Black Sea region a set of Guidelines and SoPs, which is meant to ensure better quality control/assurance and harmonization in field of the Black Sea monitoring and data management. Working on regional biological guidelines, EMBLAS organized a special workshop, which took place on 15 - 16 July, 2014 in Istanbul, Turkey. At this meeting leading experts from Georgia, Russian Federation and Ukraine discussed Microzooplankton, Mesozooplankton, Macrozooplankton, Microphytobenthos and Macrophytobenthos Guidelines (<http://emblasproject.org/gallery/workshop-on-guidelines-for-biological-monitoring-zooplankton>). Some of these guidelines were initiated 10 years ago under the BSERP Project ([http://www.undp-drp.org/drp/project\\_cooperation\\_BSERP.html](http://www.undp-drp.org/drp/project_cooperation_BSERP.html)), but were never finalized. EMBLAS ensures their update and finalization. Completely new guidelines are those on Microzooplankton and Microphytobenthos, which are also ready in very good drafts. When approved inside EMBLAS, the guidelines will be widely distributed in the region to collect comments from all relevant experts. In the end they will be proposed to the BSC for adoption and publication as official regional guidelines.



Participants of workshop dedicated to Guidelines on Biological monitoring, Istanbul, Turkey, 2014

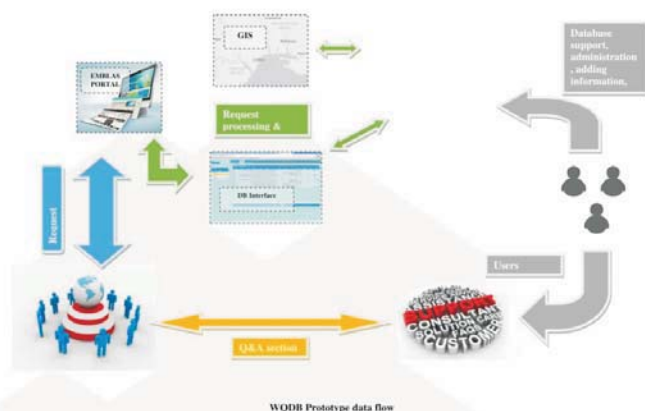
**Black Sea Information System (BSIS).** Currently BSIS, supported by the BSC Permanent Secretariat, consists of: BSC web-site and its intranet, repositories of documents and data/reports submitted by the BSC Advisory Groups ([http://www.blacksea-commission.org/\\_bsis-description.asp](http://www.blacksea-commission.org/_bsis-description.asp)), Black Sea Regional Pollution Database and a few other components, which have been produced under various projects, yet remains unsustain so far. BSIS status was analysed under EMBLAS and the system was found fragmented and scattered among components, which were difficult to integrate. EMBLAS proposed to create a new BSIS Portal, moving the system to a single development platform, redesigning its components and using new technologies to ensure their compatibility. Among planned improvements of BSIS is the further development of the Black Sea Regional Pollution Database, which should become more functional and a tool for preparation of data products serving regional Black Sea status assessments (see below). Additionally, EMBLAS deals with further required advancements of the regional Mnemiopsis database and also a regional Phytoplankton database is planned for development.

**Water Quality (WQ) Data Base.** In development of this database EMBLAS steps on the regional Pollution database, which was partially conceived and funded by the Baltic2Black Sea Project ([http://www.blacksea-commission.org/\\_projects\\_Baltic2Black.asp](http://www.blacksea-commission.org/_projects_Baltic2Black.asp)) of the BSC as an integral part of BSIS.

The WQ database will observe the following requirements:

- Database developed with a view to allow storage of chemical, biological, microbiology, eco-toxicology and hydro-morphology monitoring data collected and/or newly generated within EMBLAS and other monitoring activities;
- Ensure compatibility with existing database systems (national, BSIS, WISE-Marine, SeaDataNet, EmodNET, SEIS, etc.), observing the INSPIRE Directive instructions;

- Provide data products, which would serve Black Sea status assessments serving decision-making in the field of Black Sea environment protection and sustainable use of resources.



The WQ database concept

In the design of the WQ database specific attention shall be paid to data quality control. Test exercises shall be organised to collect feedback of users and improve the functionality of the system. Where necessary, trainings will be provided to help users. EMBLAS will also provide recommendations on the WQ database further sustainable development and use in the longterm run. With the development of the 'Good Environmental Status' of the Black Sea concept, the WQ database will be the data management platform where agreed indicators will be calculated and used to assess the status of the Black Sea against the measures taken to protect it.

## Cooperation with other projects

EMBLAS works in cooperation with several on-going projects, the most important among them are MISIS ([www.misisproject.eu](http://www.misisproject.eu)) and EPIRB ([www.blacksea-riverbasins.net](http://www.blacksea-riverbasins.net)). MISIS is often named the 'mirror' or 'twin' project of EMBLAS, as it deals with similar issues, but covers Bulgaria, Romania and Turkey. In June 2013 the managers of important EC projects, dealing inter alia with the Black Sea, have met to streamline efforts and avoid duplication of activities. The need to establish a Platform for exchange of project results was recognized, as most of the projects do not widely disseminate their deliverables, which reduces the impact of their efforts.



Meeting of on-going projects managers (June 2013, Athens, Greece)

## EMBLAS II

EMBLAS I is a preparatory action for EMBLAS II, and these two phases are overlapping in the period April-December 2014. Thus, duration of EMBLAS II is April 2014 - September 2017, geographical scope - Georgia, Russian Federation and Ukraine. The major funding for the project is coming from the EC (90%). It will be managed by the UNDP and implemented by a Consortium of leading Black Sea scientific institutions under the supervision of Ministries of Environment of the project beneficiary countries. Project partner is also the Black Sea Commission Permanent Secretariat, which ensures EMBLAS works toward further development of regional cooperation in field of the Black Sea protection. EMBLAS II steps on the theoretical elaborations of EMBLAS I and will ensure that more organisations and experts are involved in the endeavour to better protect the Black Sea. The EMBLAS II kick-off meeting will take place back to back with the Black Sea Day in early November 2014 in Istanbul, Turkey.



The bell for EMBLAS II started ringing in April 2014

### Partner Projects of EMBLAS

MISIS ([www.misisproject.eu](http://www.misisproject.eu))

EPIRB ([www.blacksea-riverbasins.net](http://www.blacksea-riverbasins.net))

PERSEUS ([www.perseus-net.eu](http://www.perseus-net.eu))

COCONET ([www.coconet-fp7.eu](http://www.coconet-fp7.eu))

### Lessons learnt from:

BSERP ([www.undp-drp.org/drp/project\\_cooperation\\_BSERP.html](http://www.undp-drp.org/drp/project_cooperation_BSERP.html))

B2B ([www.blacksea-commission.org/\\_projects\\_Baltic2Black.asp](http://www.blacksea-commission.org/_projects_Baltic2Black.asp))

BSC-MSFD ([www.blacksea-commission.org/\\_projects\\_BSCMSFD.asp](http://www.blacksea-commission.org/_projects_BSCMSFD.asp))

MONINFO ([www.blacksea-commission.org/projects\\_MON-INFO.asp](http://www.blacksea-commission.org/projects_MON-INFO.asp))

PEGASO ([www.pegasoproject.eu](http://www.pegasoproject.eu))

## EMBLAS II ACTIVITIES

1. Continue support to the implementation of countries obligations under the Bucharest and other related Conventions and Agreements;
2. Implementation of cost-effective and harmonized marine environmental monitoring programmes in accordance with reporting obligations under multilateral environmental agreements
3. Large-scale implementation of training programmes on monitoring methods and quality assurance
4. Implementation of Joint Surveys and environmental assessment of the Black Sea along the lines of the WFD and the MSFD
5. Operation of the web-based Black Sea Water Quality Database



## Did you know?

The Black Sea is divided in between the states surrounding it (Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine), there are no 'high sea' areas in this sea.

Nowadays the Black Sea monitoring is mostly concentrated in coastal waters, there are scarce studies of the Sea status on more than 90% of its area.

Nobody knows the real diversity of life in the Black Sea. There were many attempts to perform an inventory of all the Black Sea species, none of them was brought to an agreement of all experts in the region. Especially controversial are the opinions on which species in the Black Sea are not indigenous

The Black Sea is rich in mineral resources; the intention of the coastal states to explore and exploit gas deposits of the Sea is an emerging threat to the well-being of the Black Sea.

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