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Recommendations for Modification (Improvement) of National (UA) and Regional (Whole Black Sea) Monitoring Programs: Optimistic - Realistic Scenarios

Medinets Volodymyr, Olga Konareva

EMBLAS meeting. Georgia, Batumi, 21-24 May 2014.



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EMBLAS “Improving Environmental Monitoring in the Black Sea”

1.2.4.1 Overall objective

The overall objective of the action is to set up initiatives that will help improve the protection of the Black Sea environment.

1.2.4.2 Specific Objectives

The specific objectives are as follows:

- to improve availability and quality of data on the chemical and biological status of the Black Sea, in line with expected MSFD and Black Sea Strategic Action Plan needs;
- to improve partner countries' ability to perform marine environmental monitoring along MSFD principles, taking into account the Black Sea Diagnostic Report.

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Our Recommendations are based on Diagnostic Report findings and conclusions and the Ideal Black Sea Monitoring Cycle Scheme

**The Black Sea Ecosystem Management and Protection
National Program/Actions Plan (Approval or Correction)**

1. Information needs

2. Assessment and Monitoring strategies

3. Monitoring Network Establishment

4. Monitoring Program

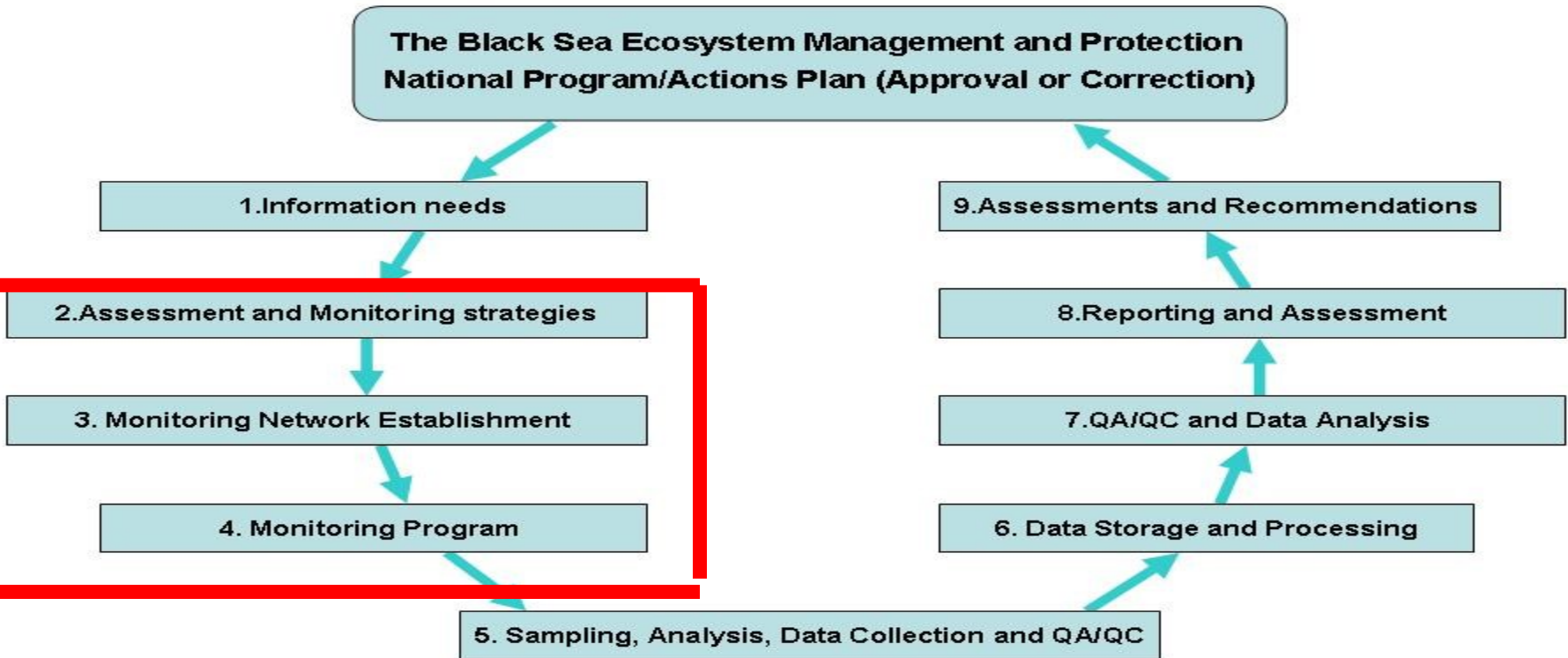
5. Sampling, Analysis, Data Collection and QA/QC

6. Data Storage and Processing

7. QA/QC and Data Analysis

8. Reporting and Assessment

9. Assessments and Recommendations





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Before formulating the main recommendations for optimistic - realistic scenarios of Monitoring Programs we should additionally analyse two options from Scheme above (red box):

2. Assessment and Monitoring strategies (National and for the whole Black Sea)

3. Monitoring Network Establishing (the main approaches for International, National and Local levels)



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Recommendations:



- 1. Drafting the recommendations we have been taking into account three levels of future Strategies as the basis for National Monitoring Programs:**
 - 1a) International level (existing Black Sea Convention, future implementation of Marine Strategy Framework Directive etc.)**
 - 1b) National Level (implementation of the Black Sea National Action Plan and other National programs such as Hydrometeorological, Fishery improvement etc.)**
 - 1c) Local Level (Monitoring of Bathing Water quality, Sources of pollution etc. for the benefit of local communities)**



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2. These Strategies of Monitoring and using of monitoring results necessitate establishing of the Black Sea Monitoring Network, which would comprise Monitoring stations of three types (or 3 sub-networks), each type of stations having its own list of parameters and its own frequency of observations.



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2a. Joint Black Sea Monitoring System should be established to include the Joint Monitoring Programme (with strategy from Item 1a) for all the Black Sea Countries. This should be agreed on the Black Sea Convention level and in the future this part of programme will be automatically included into all the National Programmes.

This should be an obligatory part of all National Programmes as the commitments of the Black Sea countries under the Black Sea Convention.

The data flow – to the BSC database and to National data base. All data should be open for experts and for scientists. The BSC will publish these data every year after verification.

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2b. Every Black Sea Country should develop the National part of the Programme with National Priorities (Item 1b).

This part will be Approved and Coordinated on the National level by Ministry of Environment Protection.

The data flow – only to the respective National database with open access for participants of programme and for national reports preparation. After validation and after publishing of National Reports these data should become open too.



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2c. We recommend to establish a separate monitoring programme with a very specific list of observations (bathing water quality, pollution etc.) in each local area (oblast, municipality, big ports, big enterprise etc.)

These programmes should be approved on local level. But in any case we recommend to coordinate locations and list of observations with National Monitoring Centre. The data flow – obligatory to the National databases and should be accessible only for the owners. The data should be used only for management purposes by Environment Protection authorities. Experts and scientists would require the owners' permission to access the data.



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This obligatory part of National monitoring programs should be based on a common understanding and a Joint Concept taking into consideration the requirements of the ecosystem-based approach:

- to allow assessing pressures/impacts and effect of measures taken as most of the Black Sea countries (excluding Russia) will implement MSFD;**
- to target complex monitoring – including air, coast, water, sediments and biota;**
- to allow identification of thresholds of pressures and assimilation capacity of the impacted water bodies.**

They should be agreed:

- as basis of National and Regional strategies/plans in BS management/protection, governmentally approved, and regulating the monitoring in its financial provisions, institutional framework and practical implementation;**
- with Infrastructure/Vessels/Equipment, which would ensure monitoring using best available practices and new techniques;**
- with harmonised methodologies for all the Black Sea Countries;**

Monitoring programmes should serve not only decision-making in environmental protection but also the needs of fundamental science in the Black Sea region.



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Monitoring Networks should be provided with:

- Infrastructure/Vessels/Equipment, which would ensure monitoring using best available practices and new techniques;**
- Harmonised methodologies for all the Black Sea Countries;**
- *Trained high quality staff;***
- *Requirements stipulated by decision-making tasks in environmental protection;***
- *Requirements formulated coming out from the needs of fundamental science in the Black Sea region.***



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The future International/National pressures/impacts-oriented monitoring system and respective programme should consist of three blocks:

A. Basic Natural Abiotic Monitoring (as partially existing in all countries), to control geophysical and geochemical state of all natural media of the marine ecosystem (sea water, bottom sediments, atmosphere over the sea, coastal zone) in three scales: coastal waters, transitional waters, open waters

B. Pollution Monitoring of priority toxic substances for estimation of pollutants balances, transfer and accumulation in biological organisms especially in commercial fish species and molluscs

C. Biological, to comprise observations on the state of all main groups (species) of marine hydrobionts (bacterioplankton, phytoplankton, zooplankton, fish, bottom organisms, marine mammals and birds).



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Revision of real existing programmes in Georgia, Russia and Ukraine has shown that blocks A and B partially exist in all countries.

But the main problem is that observations in framework of these blocks are irregular and not in the same points of the Black Sea. Points of regular observations under block A are not the same as points under block B.

Block C is practically not included into the really existing National monitoring programmes. Some parts of hydrobiological observations are conducted by separate research organisations but their stations are not included in the National networks and state programmes.

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In this connection we propose to prepare the Roadmap for development (establishing) of Joint Black Sea Monitoring System and programme.

Of course we forecast the optimistic scenarios with 3 Steps.

First step (2015-2016).

To define the International network of reference (background) stations in three scales: coastal waters, transitional waters, open waters. For example, for Ukraine we can propose:



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**For open waters (monthly or every decade)
observations:**

- Marine Research Station of Odessa National I.I. Mechnikov University,**
- one station (transect) in the North-Western part of the Black Sea in the area of Zernov's Phyllophora field (could be UkrSCES),**
- one station (transect) in open waters near Crimea (could be MHI+IBSS)**

We also propose to establish some additional quarterly transects in the Ukrainian Exclusive Marine Zone for transboundary pollution Monitoring implementation.

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For transitional waters:

-one transect (3-5 stations) in marine areas near Estuaries and Deltas of Danube, Dnister, Dnieper, Southern Bug and other big rivers (0 - 5 km from Deltas and estuaries boundaries).

-For Ukraine there will be about 30-40 stations, 4 times a year.

- DHMO (Danube region), Odessa HydrometCentre + OB IBSS +UkrSCES (Deltas of Dnieper and Dnister) can participate.



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For coastal waters (less than 100 m from the coast: one station per every 50 km of coastline (with distance from sources of pollution at least 3-5 km), regularity - monthly or quarterly. Maximal number of stations will be about 30.

Additional requirements can be formulated : 10 Stations – near protected areas on coast (zones without direct anthropogenic pressure); 10 Stations – in areas closest to big ports and cities (zones with moderate anthropogenic pressures, but at least 1 km far from sewage discharges).

10 Stations – near big sources of direct anthropogenic pressures (sewer discharges from main ports and cities).

Possible participants - Hydromet, UkrSCES, OB IBSS, ONU).



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Second step (2016-2017):

To define the organisations responsible for observations on sites (monitoring stations) belonging to international parts of the Monitoring Programme. Obligatory matters to be decided on the BSC and National Level:

- funding from the States**
- harmonisation of the list of observations**
- harmonisation of methodology**
- harmonisation of the data reporting and data flows from participants of the programme to National databases and directly to the BSC database.**
- respective training programme for the staff**
- respective equipment.**

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Third step (2017-2020):

Implementation of the New Programme (2017-2020)

Collection, Analysis of data and Preparation of National Assessment of the Black Sea Ecosystem State (2020)

Analysis of data and Preparation of Joint Black Sea Countries Assessment of the Black Sea Ecosystem State (2020)

Recommendation on changes to the Joint Black Sea Integrated Monitoring Programme

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Thank you for your attention!

Address:

**Odessa National I.I. Mechnikov University
7, Mayakovskogo lane, Odessa, 65082, Ukraine**

Tel.: +380 48 731 7379

E-mails: medinets@te.net.ua