EUROSAI

Working Group on
Environmental Auditing

EUROSAI Task Force on the audit of funds allocated to disasters and catastrophes

Joint Report on the Results of the Coordinated Parallel Audit on Protection of the Black Sea against Pollution

2011

Being aware of need of preservation of the ecosystem of the Black Sea, the Supreme Audit Institutions of Georgia, Republic of Bulgaria, Ukraine, Russian Federation, Romania and Republic of Turkey present Joint Report on the Results of the Coordinated Parallel Audit on Protection of the Black Sea against Pollution. The audit was conducted in line with the mandate of the participating SAIs.

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Image 1. Black Sea coast
Source: The Black Sea Commission

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Source: The Accounting Chamber of Ukraine archive

Introduction

The Black Sea (*Karadeniz* – Turkish, *Черно море* – Bulgarian, *Marea Neagră* – Romanian, *Чорне море* – Ukrainian, *Черное море* – Russian, შავი ზღვა – Georgian) – is a sea between Europe and Western Asia (the border between Europe and Asia Minor goes through it). The Black Sea is the most isolated from the World Ocean – connected to the Oceans via the Mediterranean Sea through Istanbul, Canakkale (Turk Strait) and Gibraltar straits and with the Sea of Azov in the northeast through the Kerch Strait. The Black Sea Catchment Area is almost fivefold bigger than the area of the sea. For this reason, the Black Sea is very vulnerable to pressure from land based human activity and its health is equally dependent from the coastal and non-coastal states of its basin.

The area of the Black Sea is 432 000 sq. km. Its greatest extent from north to the south – 580 km. The maximum depth is 2212 m, the average – 1240 m. The Black Sea catchment area is about 2 M sq. km., of which about 1 M sq. km in the Black Sea coastal countries, including:

- Republic of Turkey – 255 ths sq. km,
- Republic of Bulgaria – 16.6 ths sq. km,
- Romania – 238.4 ths sq. km,
- Ukraine – 422.7 ths sq. km,
- Russian Federation – 8.9 ths sq. km,
- Georgia – 28 ths sq. km.

Image 4. The Black Sea Catchment Area
Source: ESRI, HydroSHEDS, GeoNames

The Black Sea coast is not cut much but its northern part, mainly. The only large peninsular is the Crimean. The biggest bays are: Yagorlytsky, Tendrovsky, Dzharylgachsky, Karkinitsky, Calamita and Feodosiya in Ukraine, Varna and Bourgas in Republic of Bulgaria, Sinop and Samsun – by the southern coast of the Black Sea, in Republic of Turkey. The delta and estuaries overflow in the northern and north-western part of the sea. The total length of the coastline is over 5000 km, including:

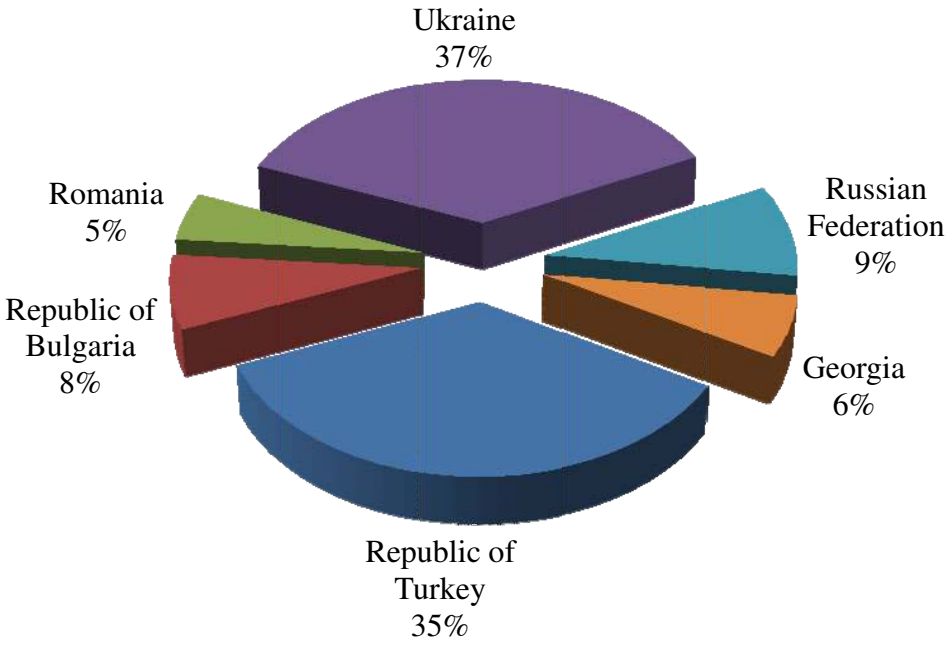
- Republic of Turkey – 1778 km,
- Republic of Bulgaria – 378 km,
- Romania – 245 km,
- Ukraine – 1829.1 km,
- Russian Federation – 470 km,
- Georgia – 315 km.

The large European rivers, Danube, Dnieper, Dniester, and Don via the Sea of Azov, flow into the Black Sea. The smaller rivers, which flow into the sea include: Mzymta, Psou, Bzyb, Rioni, Kodori, Inguri (to the east), Chorokh, Kızılırmak, Yesilirmak, Sakarya (to the south) and Southern Bug (to the north).

The seabed is divided into the shelf, the continental slope and the deep-sea depression. The shelf occupies a large area in the north-western part of the Black Sea, where it is over 200 km wide and has a depth ranging from 0 to 160 meters. In other parts of the sea it has a depth of less than 100 m and a width of 2.2 to 15 km. Near the Caucasian and Anatolian coasts the shelf is only a narrow intermittent strip.

The thin upper layer of marine water (up to 150 m) supports the unique biological life in the Black Sea ecosystem. The deeper and more dense water layers are saturated with hydrogen sulfide, that over thousands years, accumulated from decaying organic matter in the Black Sea. Due to the unique geomorphological structure and specific hydrochemical conditions, specific organisms, basically on the level of protozoa, bacteria, and some multi-cellular invertebrates inhabit the deep-sea waters. Knowledge about biological forms of life in the deep waters of the Black Sea is very limited.

Figure 1. Length of the Black Sea coastline



The Black Sea flora includes more than 1600 types of fungi, algae and higher plants. At the same time, fauna includes: about 2000 species of invertebrates, 4 marine mammals and 168 fish species, from which the following species have marketable value: grey mullet, anchovy, mackerel, jack mackerel, pikeperch, bream, sturgeon and herrings. During recent years of XX century – the beginning of the XXI century Black Sea fishing has been significantly cut due to overfishing and worsening of the ecological state of the sea.

The international transport corridor TRACECA (Transport Corridor Europe — Caucasus — Asia) goes through the Black Sea. The Black Sea ports are terminals for Pan-European transport corridors.

Image 5. Main tanker movements via the Bosphorus-inbound
Source: http://enrim.grida.no

Image 6. Main tanker movements via the Bosphorus-outbound
Source: http://enrim.grida.no

The largest port cities of the Black Sea:

- Samsun, Trabzon (Republic of Turkey);
- Burgas, Varna (Republic of Bulgaria);
- Constanța, Mangalia (Romania);
- Odessa, Evpatoria, Ilyichevsk, Yuzhny, Kerch, Sevastopol, Yalta (Ukraine);
- Novorossiysk, Sochi, Tuapse (Russian Federation);
- Batumi, Poti (Georgia).

The voyages of tankers, ensuring oil and oil products export from Russian (mainly Novorossiysk and Tuapse) and Georgian (Batumi) ports form significant volume of shipping.

Favourable climatic conditions of the Black Sea area stipulate its development as an important resort region. The largest Black Sea resort regions include: the Crimea Southern Coast (Yalta, Alushta, Sudak, Koktebel, Feodosiya) in Ukraine, the Caucasian Black Sea coast (Anapa, Gelendzhik, Sochi) in Russian Federation, Batumi in Georgia, the Bulgarian Black Sea coast (Golden Sands and Sunny Beach), the Romanian Black Sea coast (Mamaia, Eforie, Mangalia).

In addition, the Black Sea is a region of strategic and military significance.

Image 7. Fishing in the Black Sea
Source: The Black Sea Commission

On April 21, 1992 in Bucharest, bearing in mind the adverse effect of pollution within internal waters on the marine environment of the Black Sea, authorized representatives of Republic of Turkey, Republic of Bulgaria, Romania, Ukraine, Russian Federation and Georgia had signed the Convention on the Protection of the Black Sea Against Pollution (hereinafter referred to as Bucharest Convention) and agreed to take individually or jointly, as appropriate, all necessary measures to prevent, reduce and control pollution thereof in order to protect and preserve the marine environment of the Black Sea.

The area of cooperation, identified by Bucharest Convention, is pollution by hazardous substances and materials from land-based sources, ships, in emergency situations, provoked by dumping or continental shelf activity, from atmosphere or through it, by hazardous waste during their transboundary movement, as well as protection of marine living resources, scientific cooperation and monitoring.

It is obvious, that the Black Sea is on the thresholds of intensification of anthropogenic impact on its ecosystem, which creates the background of labelling it as extremely ecologically "vulnerable". This means that ecological loses are accompanied by economical ones, in particular due to sharp decrease of the sea natural resource potential. That's the reason of arising of an idea to conduct an audit of how countries carry out their commitments of compliance with the signed convention.

Image 8. Participants of the I Expert Team Meeting for Coordinated Parallel Audit of Protection of the Black Sea against Pollution, June 23, 2010 – Kyiv, Ukraine
Source: The Accounting Chamber of Ukraine archive

Preamble

The initiative of conducting the Coordinated Parallel Audit on Protection of the Black Sea against Pollution was introduced by the Accounting Chamber of Ukraine during the XII INTOSAI Working Group on Environmental Auditing (hereinafter INTOSAI WGEA) meeting, that was held on January 25-29, 2009 in Doha, State of Qatar.

In July 2009 the Accounting Chamber of Ukraine has send invitation letters to the potential participants of the parallel audit, in particular to SAIs of Black Sea region countries: Republic of Turkey, Republic of Bulgaria, Romania, Russian Federation and Georgia, as well as to SAIs of Danube river basin: Federal Republic of Germany, Republic of Austria, Republic of Hungary and Slovak Republic.

The initiative of conducting audit was supported by 10 SAIs (Republic of Austria, Republic of Bulgaria, Republic of Hungary, Federal Republic of Germany, Georgia, Russian Federation, Romania, Slovak Republic, Republic of Turkey and Ukraine), 6 of which agreed to participate in it. In terms of this, the draft of the Common Position on Cooperation for the Coordinated Parallel Audit of Protection of the Black Sea against Pollution was introduced during the VII EUROSAI Working Group on Environmental Auditing (hereinafter EUROSAI WGEA) meeting, that was held on October 5-8, 2009 in Sofia, Republic of Bulgaria.

The official approval of the Common Position on Cooperation for the Coordinated Parallel Audit of Protection of the Black Sea against Pollution was conducted via electronic correspondence in May 2010.

The audit objective was to assess the implementation of commitments resulting from international agreements and collaborative projects on prevention of disasters and catastrophes and pollution of the Black Sea marine environment as well as to monitor and assess the efficiency while utilizing the public funds allocated to this end.

The scope of the audit:
- implementation of international agreements regulating pollution of the Black Sea marine environment;
- organization efficiency of the national system for control, prevention and consequences elimination of marine environment pollution;
- utilization efficiency of the public funds allocated to protection of the Black Sea basin waters against pollution;
- implementation of international collaborative projects on protection, monitoring and assessment of the waters quality in the Black Sea catchment area.

Common Audit Questions were to:
- establish main pollution sources of the waters in the Black Sea catchment area;
- identify the common legal framework for the cooperating countries that falls within this audit and assess the compliance level;
- assess and compare the systems for control, prevention and consequences elimination of the marine environment pollution;
- assess the activities of the authorities regarding the protection of waters in the Black Sea basin;
- determine and assess the implementation efficiency of international, national and regional programs as within the frames of this audit;
- determine the dynamics of the qualitative composition of the Black Sea waters.

The cooperation was based on the rules contained in the official publication by the INTOSAI WGEA titled “Cooperation between SAIs, Tips & Examples for Cooperative Audits”, approved in 2007 at the INTOSAI WGEA Meeting.

The participants of audit included SAIs of: Republic of Turkey, Republic of Bulgaria, Romania, Ukraine, Russian Federation and Georgia (hereinafter audit participants). The audit coordinator: SAI of Ukraine.

The audit covered the following period:
- referring the issues of policy performance – from the date of coming into effect of the Convention on the Protection of the Black Sea Against Pollution signed on April 21, 1992 in Bucharest;
- referring the funds utilization efficiency – years 2007-2009, depending on each SAI's national approach.

In addition, the Accounts Chamber of the Russian Federation and the Accounting Chamber of Ukraine, from September 2009 to July 2010, within the scope of the Coordinated Parallel Audit of Protection of the Black Sea against Pollution, have conducted the Parallel inspection of state funds and funds from other funding sources utilization, allocated for regulation, protection, research and reproduction of water biological resources and for provision of environmental safety in the Sea of Azov and the Black Sea fishing basin. The Resolution on conducting parallel inspection was approved by chairmen of SAIs on December 28, 2009 in Moscow, Russian Federation, and the Memorandum on its results was signed on December 2, 2010 in Kyiv, Ukraine.

Three expert team meetings were held before signing the Joint Report.

The First Expert Team Meeting was held on June 23, 2010 in Kyiv, Ukraine.

During the meeting, participants reported on the national audits' status and preliminary results, agreed to break collaboration on the Coordinated Parallel Audit of Protection of the Black Sea against Pollution into three phases, endorsed the following preliminary structure of a Joint Report and also approved in whole the list of data for comparative analysis and main addressees of the Joint Report.

The Second Expert Team Meeting for the Coordinated Parallel Audit of Protection of the Black Sea against Pollution was held on October 20-21, 2010 in Istanbul, Republic of Turkey.

During the meeting participants heard the presentation by the Executive Director of the Commission of the Protection of the Black Sea against Pollution, Prof. Ahmet Kideys, on the subject: "The regional environmental governance in the Black Sea – The Bucharest Convention". Also, the participants finally approved the list of data for comparative analysis, the Joint Report structure and the list of its main addressees.

The Third Expert Team Meeting was held on April 12, 2011 in Bucharest, Romania. The meeting was organized in order to discuss the SAIs suggestions and amendments to the draft Joint Report, to prepare the final steps for the approval of the Joint Report and to decide the procedure and the way it is to be signed, as well as to prepare for its presentation at the VIII EUROSAI Congress, that is to be held on May 30 – July 2, 2011 in Lisbon, Portuguese Republic.

In addition the SAI of Republic of Bulgaria has conducted national audit regarding this matter in 2008-2009 and has updated the audit data in accordance to the time period stipulated in the Common Position.

Table 1. The number of auditors participating in the audit

3	3	2	7	5	3

While compiling the Joint Report, participant countries were guided by the following approaches.

Introduction contains information about the significance of the Black Sea to each country.

The Preamble contains information concerning the history of conducting this audit, its general provisions and the information on resources used.

The first section contains joint conclusions and recommendations made audit participants, worked out in accordance with national audits and main topics of the third section.

The second section contains summaries of national audits, conducted by audit participants, as the basis for carrying out joint conclusions or recommendations.

The third section contains the comparative analysis of auditing data, and is divided into 4 chapters:

1.1. National strategies – information about the documents, which implement the regulations of the Bucharest Convention in a specific country and its main executors, volumes of the funds allocated for the purpose of pollution prevention from land-based sources on the Black Sea coast. This chapter allows us to evaluate intentions.

1.2. The current Black Sea pollution state and dynamics: information regarding the volumes of water discharges, including polluted water, evolution of main water quality indicators of the Black Sea and the outflow of its basin main rivers. This chapter shows how loaded the ecosystem is and the results of the state policy in this sphere.

1.3. Monitoring and supervision – this chapter testifies the possibilities to receive current and reliable information for effective management.

1.4. Data access – shows state policy transparence, as a feedback indicator with its main consumer – population.

The fourth section is devoted to improving international and regional collaboration to deal with pollution.

Image 9. Participants of the II Expert Team Meeting for Coordinated Parallel Audit of Protection of the Black Sea against Pollution, October 20-21, 2010 – Istanbul, Turkey
Source: The Turkish Court of Accounts

Section I. Joint conclusions and recommendations

Joint Conclusions

1. In terms of significance of the Black Sea and its basin for sustainable development of the Black Sea region countries, their governments have taken main necessary measures for implementing provisions of the Bucharest Convention on Protection of the Black Sea Against Pollution in their national legislature. Every country of the Black Sea region has identified the government executive authority, responsible for implementation of provisions of the Bucharest Convention on its territory. In addition, the authorities, responsible for supervision and protection of environment against pollution have been identified, as well. As a result, state policy of these countries was oriented on decrease and prevention of the Black Sea pollution from land-based sources, as well as on intensification of supervision and responsibility for the caused damage. However, "polluter pays" principle has not been fully implemented and the issue of oil pollution from ships remains unsolved.

2. Despite the efforts at national and regional level, the eutrophication phenomenon of the sea by compounds of nitrogen and phosphorus (nutrients), largely as a result of pollution from agricultural, domestic and industrial sources, is still the main challenge for the Black Sea Environment.

3. Although there is a growing trend in investments on the sewage systems and waste water treatment plants in both the river basins and coastal cities, there is yet much more to do since the current situation is still inappropriate. Inputs of untreated sewage and industrial waste water are not adequately controlled, and therefore significant funds are necessary for the implementation of river basin management.

4. The Black Sea region countries managed to establish sufficiently wide Black Sea water monitoring system, which allows receiving reliable and rather complete data on marine ecosystem quality changes. However, the issues of financing the development and functioning of the existing monitoring systems activities on the national level, as well as financing issues of scientific laboratory researches conduction, create certain risks in well-timed receiving of high-quality data concerning marine environment.

5. The Black Sea countries contribute to pollution struggling in the Black Sea marine environment via reporting relevant data and information to the BSC. However there are gaps in data availability and data reporting due the insufficient correlation among national standards. This leads to gaps also in Black Sea Information System (BSIS), and as a result of the lack of a comprehensive common database, data production and reporting activities become less effective in achieving the anticipated targets.

6. Insufficient financial support of monitoring is one of the common challenges of the Contracting Parties in carrying out their national monitoring programs. They affect adversely both the quantity and quality of the data as well as sustainability and efficiency of monitoring programs of the coastal countries.

7. Lack of harmonization and standardization between the national monitoring programs makes it more difficult to develop common strategies for the collaborative struggle against pollution.

8. The appropriate conditions for population and interested parties to access environmental information regarding the Black Sea ecosystem conditions and issues were provided in each and every country of the Black Sea region. This fact testifies the existence of premises for understanding and support of the measures necessary to improve qualitative and quantitative indicators of government activities in the area of protection of the Black Sea against pollution by the population of the Black Sea region states.

Joint Recommendations

1. In order to protect the Black Sea Environement against untreated waste water dumping, concrete and continuous measures should be taken by all coastal countries. The number of waste water treatment plants should be increased and the level of treatment at the available treatment plants should be improved. For this purpose, sufficient and adequate funds should be allocated for treatment systems.

2. Supervision systems need to be improved especially to deal with illegal dumping into the rivers and the Black Sea. It is neceesary to strenghten the capacity building of the national supervisory authorities in order to properly control all polluters and all sources of pollution that affect the Black Sea Environment.

3. It is imperative that strategies for the controlling of pollution carried by rivers be adopted by all Black Sea coastal countries. In this regard, river basin management programs should be prepared and implemented effectively by the above mentioned countries, especially the ones which do not have yet. It is essential that *"the best agricultural practice"* be adopted and implemented by all the Black Sea coastal countries, for the purpose of reducing nutrient inputs from agriculture sources.

4. Data quality assurance and quality control procedures should be developed by the BSC (AG IDE) for all the data and information regarding its activities. The Contracting Parties should follow these procedures to ensure the reliability, relevance and completeness of the data and information included in their national reports so that BSIS could be an effective mechanism able to achieve the anticipated targets through the common efforts of countries and the BSC.

5. Harmonization of monitoring programs and standardization of sampling and sample analysis techniques among the countries should be achieved in order to ensure the sustainability and efficiency of the monitoring programs in the countries.

6. With the purpose of comprehensive and practical risk assessment due to gradual increase of oil shipping in the Black Sea, it is essential to ensure better cooperation, scientific data exchange and implementation of "polluter pays" principle.

7. To improve scientific regional cooperation.

8. Good environmental protection for the Black Sea not only depends on the strong regional collaboration but also requires international initiatives. Regional and international initiatives to protect the Black Sea should be enhanced especially via developing the operational capacity of the BSC. Within the scope of the BSC activities, efficient strategies are needed to be emphasized in order to obtain the necessary funds from the UN and other international donors.

9. To improve the collaboration between the BSC member countries in order to practically provide sustainable development of the Black Sea.

Section II. National audits on protection of the Black Sea against pollution

Turkish Court of Accounts

I. GENERAL OVERVIEW

With its rich ecosystem the Black Sea provides diverse opportunities for economic and social life and has a vital importance for Turkey. But, because of over exploitation of its resources and increasing level of marine pollution, this invaluable asset is under great threats.

The narrow coastal area of the Black Sea is densely populated and due to weaknesses in the regional management systems, human activities and natural disasters have great stresses on the Black Sea. Both degradation of the ecosystem due to unsustainable use of the marine resources and land based sources of pollution composed of domestic, industrial and agricultural wastes as well as ship based pollution sources increase the vulnerability of the Sea.

Turkey has launched many international, national and regional initiatives in order to protect the Black Sea against pollution and had considerable progress in many areas. But Turkey still needs to develop its institutional and financial capacity to restore and protect the invaluable environmental, economic and cultural resources of the basin for both current and future generations.

Image 10. Presentations during Expert Team Meetings
Source: The Turkish Court of Accounts

II. LEGAL FRAMEWORK, INSTITUTIONAL CAPACITY AND INTERNATIONAL COOPERATION TO DEAL WITH POLLUTION IN THE BLACK SEA

The principal national authorities responsible for implementation of the laws and regulations on the protection of the Black Sea can be stated as Ministry of Environment and Forestry, Ministry of Agriculture and Rural Affairs and Undersecretariat of Marine Affairs with their provincial directorates and also the municipalities.

Since Ministry of Environment and Forestry is the coordinator body in implementation of the Bucharest Convention and its Protocols, its success in establishing and managing the coordination among all responsible bodies in order to both assess and respond to existing challenges in the region is vital.

Turkey has been actively participating in the joint projects that are carried out to improve the international cooperation in the frame of Bucharest Convention and has been trying to do its part in order to add value to information exchange network. However, international activities cannot be attributed to public opinion as expected so that a sufficient level of public participation cannot be obtained to dealing with the basic challenges in the region.

Instead of considering "international information exchange" as the main objective, it should be better considered as a tool to achieve specific goals. That's why it should be ensured that reported and shared information is functional in developing common policies and strategies and also putting of concrete cooperation tools into practice on the basis of action plans and projects.

III. DEALING WITH LAND BASED POLLUTION

The Black Sea is under the threat of many land based sources of pollution. Solid waste, municipal and industrial discharges, rivers loads and agricultural activities can be stated as the main sources of pollution in the Black Sea region.

1. Waste Management in The Black Sea Region.

In Turkey, the necessary legal framework for the implementation of a sound waste management is in place. Especially the environmental legislation that ensures the control of the wastes and the disposal of them in an environment-friendly manner offers the necessary legal framework for the protection of the marine environment. However, there are some problems emerging in the implementation process in the region.

The processes of collection and transportation of waste to the landfills are functioning well in general, but there aren't sufficient treatment facilities in the region. First of all, despite the law, solid waste isn't controlled and minimized properly at source. A huge amount of waste is one of the main threats for environment of the region and the Black Sea. Because the number and capacity of sanitary landfills are very limited and the most serious challenge confronted in waste management in the region is the storage of the waste into unsanitary landfills.

There is a progress in construction of new landfills and other environmental infrastructure investments in the region during last few years with guidance and financial contribution of Ministry of Environment and Forestry. To promote a sound waste management system, main requirement is to enhance institutional, technical and financial capacity of municipalities and increase the support of central government for environmental investments. The contributions of private sector and waste producers are essential as well.

2. Waste Water Management in the Black Sea Region

Discharge of inadequately treated waste water is another main pollutant for the Black Sea marine environment. Admittedly, the basic components of sound waste water management are the collection of waste water into sewage system and proper treatment. Central areas of all provinces in the region have sewage infrastructure. But some rural areas are not still connected to sewage system. In these areas, sewage is being discharged directly or via brooks into the Black Sea.

The number of waste water treatment plants or the level of current treatment systems in the Black Sea region are still not adequate to deal with improper sewage discharges. However, almost all municipalities have ongoing projects on waste water treatment plants. Therefore, it is expected that significant progress will be made in that area in the nearest future.

Since financing problem is the main hindrance for municipalities, their financial means to use for environmental investments should be increased and the amount of central funds allocated to municipalities should be improved. Effective supervision and control by the Ministry could force municipalities to take serious measures for promoting their waste water management.

3. Dealing with Pollution Through Rivers

As one of the main sources of land based pollution, many brooks and rivers in the region play an important role in carrying the pollution from agricultural and husbandry activities into the Black Sea. Especially, Kızılırmak, Yeşilırmak and Sakarya River basins are the areas where the adverse effects of pollution from agriculture and husbandry activities are observed the most seriously.

In order to protect the Black Sea against pollution from agricultural sources, significant projects have been conducted by government agencies. For example, Anatolia

Watershed Rehabilitation Project has been conducted by the Ministry of Environment and Forestry with the Ministry of Agriculture and Rural Affairs. The Project that aimed at rehabilitating Kızılırmak and Yeşilrmak River Basins and fighting against agricultural pollutant sources in these basins is supported by World Bank and Global Enviroment Fund (GEF). Within the scope of this project, activities have been carried out to combat with agricultural pollutant sources and rehabilitate natural resources in micro-catchments in six provinces that are in the drainage area of the Yeşilırmak and Kızılırmak Rivers.

Another project related to agricultural pollution is "The Project on Capacity Strengthening and Support to Implementation of the Nitrates Directive in Turkey". It is aimed with this project supported by European Union to reduce water pollution caused or induced by nitrates from agricultural sources, to develop and apply "good agricultural practices code" and to develop implementation capacity.

It is crucial that such projects should be regarded as good practices and be set as an example for new projects covering all catchments in the Black Sea basin in order to protect the sea environment effectively against agricultural pollution through rivers.

Image 11. Oil pollution
Source: The Black Sea Commission

IV. DEALING WITH POLLUTION FROM SHIPS

1. Marine Transportation and Environmental Safety

There is an intensive ship traffic in the Black Sea and its potential threats on the marine environment are increasing continuously. The most intensive and risky area in the region is the connection point of the Black Sea to the Istanbul Strait. More than 50 000 ships of which 1/5 carry oil and other hazardous chemicals pass through the Istanbul Strait lead great threats for the Bosphorus and the coastal zone of Istanbul. Since the ship traffic is one the most important source of oil pollution in the sea, necessary measures should be taken in case of any incident that may affect sea environment and coastal zones.

It is obvious that a sound environmental protection depends on thorough coordination of preventive, contingency and combating measures, and requires fast and effective action of the responsible national authorities and international cooperation. Unfortunately it is difficult to state that all these conditions are valid and effectively implemented in the Black Sea region. But there is a considerable progress to ensure effectiveness of administrative measures for preventing pollution from ships and strengthen mechanisms in the region for detecting marine pollution incidents and eliminating their consequences.

Still, there is an urgent need for comprehensive and realistic risk assessments because of the dramatic increase in oil shipping in the Black Sea. In general, there is a need for more cooperation, exchange of information on research and sharing of good practice.

2. Waste Reception Facilities in the Ports

For preventing waste disposal from ships into the sea, the most important thing is providing adequate facilities in ports for ships to dispose of their waste in an environmentally sound manner. The ports in the Black Sea shore have adequate waste reception facilities. But they cannot use their capacity because of the lack of demand from ships. Ship traffic is not intensive and only a small amount of waste is being received by ports.

In contrast to seashore ports, Istanbul Bosphorus has very intensive ship traffic that has effects on the oil pollution in the Black Sea. For that reason, it is important to take relevant measures to improve waste reception facilities of Istanbul Port and increase ship inspections for preventing illegal waste disposal to the sea.

Image 12. Friendly meeting of audit participants, April 12, 2011 – Bucharest, Romania
Source: The Romanian Court of Accounts

3. Prevention and Removal of Pollution

The intensive traffic in the Black Sea and its composition (oil and other hazardous chemicals) pose great risks for the region, especially for Istanbul. According to official data, 154 million tons of oil was transported via the strait zone in 2009. In the past, many ship accidents have occurred in the region and most of them were devastating for marine environment.

Experiences in the world show that any tanker accident in the Black Sea will affect marine environment more dramatically because of its close situation. So, oil pollution prevention, preparedness and response represent a growing challenge for Turkey in view of increasing oil transportation and exploitation in the region.

Dealing effectively with the ship based pollution depends on the availability of adequate equipment with this purpose and employment of the qualified personnel who can get use of them in case of a need. Apart from the barriers with a limited number in some ports and shore facilities at the Black Sea coast, neither governmental nor private facilities have the adequate equipment and capacity. That's why only penalties are imposed in the detected pollution incidents and no activity for the removal of the pollution is carried out. Therefore, the polluters face only with the payment of those penalties not being obliged to bear the cost of pollution removal as required by "polluter pays" principle.

There are also severe sanctions and high penalties in the case of detection of ship based pollution incidents. Correspondingly, there has been a fall recently in the pollution incidents caused by ships. In dealing with ship based pollution, ship surveys and port state control activities have important roles and there is a need to improve especially port state controls in the Black Sea ports.

Image 13. Turkish Expert Team
Source: The Accounting Chamber of Ukraine archive

V. MONITORING FACILITIES AND CONTROL ACTIVITIES

1. Monitoring and Assessment of the Black Sea Pollution

Monitoring systems have the key role in observing the damaging effects of the main pollutants and in developing the appropriate policies and strategies to deal with the pollution threat on the basis of the assessments of those observations. As stipulated in the Bucharest Convention with its Protocols and Black Sea Strategic Action Plans, both international and national monitoring systems should be put into practice to better analyze the pressures for the Black Sea.

As a part of the Black Sea Monitoring System, Turkey has been carrying out its national monitoring programme under the responsibility of the Ministry of Environment and Forestry and with the technical assistance of the Institute of Marine Sciences and Management of Istanbul University since 2004.

Turkey adopted BSIMAP (Black Sea Integrated Monitoring and Assessments Programme) and integrated it into its national monitoring and assessment program and support observations of all mandatory parameters in the frames of the BSIMAP. Samplings have been made at 69 stations along the Black Sea Coast of Turkey in which there are 10 hot-spots identified as high priority point sources.

Beside this programme, there are some other monitoring activities along the Black Sea coast that are carried out by different institutions such as the Ministry of Agriculture (monitoring of agricultural pollution in the river basins), the Ministry of Health of Turkey (monitoring of the sea water quality in the seasides) and municipalities (monitoring activities related to their missions). There are also ongoing water quality monitoring activities in the river basins to explore the effects of agricultural and nitrate pollution that are carried within the scope of Anatolia Watershed Rehabilitation Project and implementation projects of the Nitrate Directive.

Inadequate level of specialized human resource and technical capacity as well as non-integrity and discontinuity of monitoring activities are the major challenges in Turkey in the area of water quality monitoring. So, national agencies responsible for monitoring need to be adequately staffed and strengthened with technical expertise. Moreover, necessary resources should be allocated in order to develop their institutional and technical capacity.

2. The Need for Developing a Common Database and Its Importance in the Phase of Strategy Development

The fact that numerous monitoring activities in the Black Sea coast cannot be carried out in a standardized manner and the incapability of carrying out long-life monitoring projects are the main causes of the lack of a comprehensive database in the Black Sea region. This situation weakens the functionality of the monitoring activities in addressing the main challenges and taking the appropriate steps to deal with the pollution sources.

For the Black Sea region, the sources of pollution or risks are put forth somehow as results of monitoring activities but strategy development facilities should be improved. There is a need for comprehensive and realistic risk assessments for the dramatic increase of pollution in the Black Sea. So, national information derived from monitoring activities should be evaluated together with regional information and national strategies should be promoted for national issues; but most importantly regional strategies should be developed collaborated with other parties based on monitoring results submitted by each country to the Black Sea Information System (BSIS).

Regular updating of the hot spots defined highly vulnerable to the pollution is also an important indicator of the success of the monitoring activities. A recently finalized project put some recommendations forward to update/review the hot spots and sensitive areas of all the coasts of Turkey. In addition to existing hot spots in the coastal region of the Black Sea, it is now on the agenda of the Ministry of Environment and Forestry that new "non-coastal" hot spots are to be included in the monitoring programme in line with the revised "Protocol on the Protection of the Marine Environment of the Black Sea from Land Based Sources and Activities (2009)" on the issue of basin based approach in dealing with the land based pollution.

Image 14. Participants of the III Expert Team Meeting for Coordinated Parallel Audit of Protection of the Black Sea against Pollution, April 12, 2011 – Bucharest, Romania
Source: The Romanian Court of Accounts

The Black Sea is a unique body of water resembling a lake. Its only contact with the World Ocean is the Bosphorus Strait which is 35 km long and 700 m wide. Therefore it has taken several centuries for the Black Sea to exchange its seawater with that of the Mediterranean. It is therefore extremely vulnerable to pollution. The pollution of the Black Sea ecological system is caused not only by marine activity but also by activities on the land and in the coastal regions or the upper streams of rivers which carry polluted water into the sea. This fact is of great importance for the Black Sea into which flow more than 300 rivers. The largest rivers that run into the Black sea are the Danube, Dnepr and Don.

The Bulgarian Black Sea coast consists of well organized and developed resorts with nearby settlements that produce not well purified wastewater, discharging directly into the sea or into the rivers that flow into the sea. Furthermore, there are also big industrial, chemical and oil processing plants.

Being aware of the great significance of the Black Sea marine environment as regards economy, social issues and health care, the countries from the Black Sea region have joined forces to protect their common interest. The Convention on the Protection of the Black Sea Against Pollution was signed in Bucharest in 1992. Its provisions are focused on undertaking all necessary measures to prevent, reduce and control pollution in view of preservation and conservation of the Black Sea marine environment. The Bucharest Convention was ratified by the Bulgarian National Assembly through a law, adopted on 26.11.1992 which was enforced for Bulgaria as of 15.01.1994.

In order to achieve the audit objectives, the activity of the Ministry of the Environment and Water (MOEW) was examined, with respect to the prevention, decrease or control of the marine environment pollution by all land based sources.

MAIN AUDIT FINDINGS AND ASSESSMENTS

1. Legal framework.

The adopted regulations in the field of water management provide a high degree of harmonization of the Bulgarian legislation with the European one. Legal terms have been elaborated for effective implementation of the activities aimed at achieving the Bucharest Convention objectives.

2. Provision of resources for carrying out the activities in MOEW for implementation of the Bucharest Convention.

2.1. Administrative capacity

Structural units have been set up in MOEW, the Executive Environment Agency and the Regional Inspectorates of Environment and Water in line with the tasks assigned to them by the regulations. The fluctuation of manpower and the vacant expert positions create a risk for non-effective implementation of the tasks assigned to them. The MOEW management has endevoured to enhance the qualification and develop the professional skills of the employees in the field of water management which has added value to the effectiveness of their work.

2.2. Provision of funds

In order to fund the water protection activities and projects incl. Black sea water, the following sources were used:

- State budget;
- MEW budget;
- Enterprises in charge of management of environment protection activities;
- Pre-accession funds ISPA and PHARE for EU candidate countries.

Financial prerequisites have been established in MOEW for implementing the Bucharest Convention objectives. Funding is provided by different external and internal sources and the funds from internal sources amount to 94%, thus providing for the implementation of the projects.

3. Analysis and assessment of the activities for implementation of the Bucharest Convention.

Issuing licenses for discharge into water objects (for the Black Sea region).

The issuing of licenses for wastewater discharge in water object (Black Sea) corresponds to the legal requirements.

No regulation was adopted by the Minister of environment until completion of the audit on the form and contents of the discharge license registers, maintained by the Water Directorate.

Development and implementation of plans, programmes and projects.

Two strategic documents have been in function during the audited period:

- The National Strategy for the environment and action plan 2000 -2006;
- The National Strategy for management and development of the water sector until 2015.

The objectives included in these strategic documents do not contradict and are in conformity with the objectives set in the Bucharest Convention.

The following documents have been implemented during the audited period:

- National programme of a special priority for the establishment of urban wastewater treatment plants for settlements having a population of above 10 000 in the Republic of Bulgaria;
- Strategic Action plan on the rehabilitation and protection of the Black Sea;
- The Project "Rehabilitation of the Black Sea Ecosystem": is implemented by the United Nations Development Programme for assisting the countries from the Black Sea Region in the application and implementation of Bucharest Convention Strategic plan and policies.
- The development of a National programme for priority in the construction of urban waste water plants for settlements of more than 10 000 p.e. and of the Programme for application of 91/271/EU Directive for waste water treatment are in compliance with the requirements and obligations of our country under the Convention on the Protection of Black Sea Against Pollution.

A serious delay has occurred in the implementation of the National programme for objects of priority which is poses a risk for the achievement of its objectives as well as for the observance of the provisional terms agreed.

Participation in the Working Groups of the Bucharest Convention. During the audited period 16 experts from MEW have taken part in the work of all advisory groups. Their participation was most active and regular in the activity of the Advisory Group on Pollution Monitoring and Assessment, Advisory Group on Integrated Coastal Zone Management and Advisory Group on Control of Pollution from Land Based Sources.

No specific rules have been elaborated for the experts' activity which poses a risk for the implementation of all commitments undertaken, due to the fact that many structural units and administrations were included in the groups.

4. Analysis and assessment of control activity.

The aim of the control carried out is to observe the environmental normative acts as well as to prevent water pollution above admissible limits.

Following an order issued by the Minister of Environment and Water the Regional Inspectorate of Environment and Waters was assigned with the task to control the objects that produce wastewater and also the provisions and requirements set forth in the licenses for waste water discharge. The Basin Directorate Director was entrusted with the task to control the implementation of the issued licenses, including the discharge licenses and this caused overlapping of control activities.

The Regional Inspectorate of Environment and Waters and the Black Sea Basin Directorate control the objects that discharge into surface water objects including the Black Sea by means of conducting checks according to annual plans, approved by the Minister of Environment and Water. As a result of the control carried out infringement statements were issued and sanctions imposed for cases envisaged in the legal framework.

The overlapping of control activities, assigned to both regional structures, the Regional Inspectorate of Environment and Waters and the Basin Directorate, poses a risk of ineffective control.

5. Analysis and evaluation of the Black Sea Monitoring System.

The Black Sea monitoring network consists of stations and points for monitoring the condition of coastal and territorial sea water. They are situated along the whole coastline and reflect to a great extent the chemical condition of sea water in the area close to the coastline.

The monitoring of surface waters on the territory of the Black Sea Basin Management is conducted in accordance with the Program for river, lake, dam and seawater monitoring and the Group of indicators for analysis for 2005 and 2006. Both of them have been approved by the Minister of environment and water. The certified points for sample collection in sea waters are 23 in total, 17 of which are located in coastal waters, and the other 6 – in territorial waters. The samples from territorial waters are taken not only from the surface, but from a deeper water layer as well.

The control of water quality and the change of its characteristics over time is done in accordance with the norms establishing maximum allowed concentrations of indicator substances in coastal sea waters. Those norms were introduced with specialized ordinances.

The number and location of stations and the indicators monitored conform to the requirements of international conventions.

The planned sample collections were not carried out in full due to the lack of an own sea vessel, with a year-round capability for sample collection for physical, chemical and biological monitoring in areas away from the shore.

The seawater monitoring system provides information, necessary for making analyses, assessments and forecasts as well as for taking appropriate measures by the MOEW in order to achieve the Bucharest Convention's objectives.

6. Reporting to international organizations and informing the public on the Black Sea state.

The Executive Environment Agency issues annual reports to the European Environmental Agency, the Advisory Group on *Pollution, Monitoring* and *Assessment with the Commission* on the Protection of the *Black Sea* Against Pollution, *on the quality of coastal sea waters*.

The Executive Environmental Agency reports to the *European Environmental Agency at 16 different locations, reflecting the condition of sea waters. Bulgaria reports the condition of sea waters to the Commission* on the Protection of the *Black Sea* Against Pollution on 5 locations and 15 sources of pollution – 10 wastewater treatment plants and 5 industrial pollutants. Data from the physical and chemical monitoring of sea waters and analysis of the sea water quality trends have been submitted by the observation points in Shabla, Varna, Obzor, Bourgas and Ahtopol. A report was submitted, detailing the condition of waste waters in the wastewater treatment plants in Balchik, Asparouhovo, Tsarevo, Pomorie, Ravda, Obzor-Byala, Meden Rudnik, Kiten, the sewerage of Sozopol, as well as the industrial pollutants "Solvei sodi" JSC, the main site of Lukoil Neftohim Bourgas and its bases in Rosenetz, Varna Harbour and Bourgas Harbour.

The deadlines for submitting reports to the relevant institutions have been observed and so were the respective criteria, established by those institutions.

The Executive Environmental Agency effectively carries out Bulgaria's commitments to share information with the countries, which have ratified the Bucharest Convention as well as with other international bodies.

7. Coastal sea waters assessment for the period 2005-2007.

The analyses made during the audited period, even though based on incomplete amount of sample collections, show that the general trend of improving the quality of Black Sea waters from North to South has been maintained.

The Ministry of Environment and Water has initiated prerequisites for implementing the activities needed to achieve the aims of the Bucharest Convention. Actions have been taken to reduce, control, and prevent pollution of the Black Sea. The delay in implementing the National Program poses risk to the achievement of the following objectives: reduction of substances, discharged into the sea; achieving the standards of quality for Black Sea waters before the expiration of the negotiated postponed deadlines.

RECOMMENDATIONS

The following was recommended to the Minister of Environment and Water:

1. Actions should be taken to fully staff Directorate "Water management" in the MEW.

2. Actions should be taken to amend the Water Act in order to stop the overlapping of control functions, delegated to both the Regional Inspectorate of Environment and Water and the Basin Directorate.

3. Actions should be taken to publish the Ordinance for issue of licenses for wastewater discharge in water objects and determining the individual emission limitations of pollution sources.

4. The rights and obligations of participants in the advisory groups of the Commission should be specified.

5. Actions should be taken to overcome the delay in implementing the National Program in order to meet the negotiated postponed deadlines.

6. Actions should be taken to ensure that sample collection for physical, chemical and biological monitoring is carried out throughout the year.

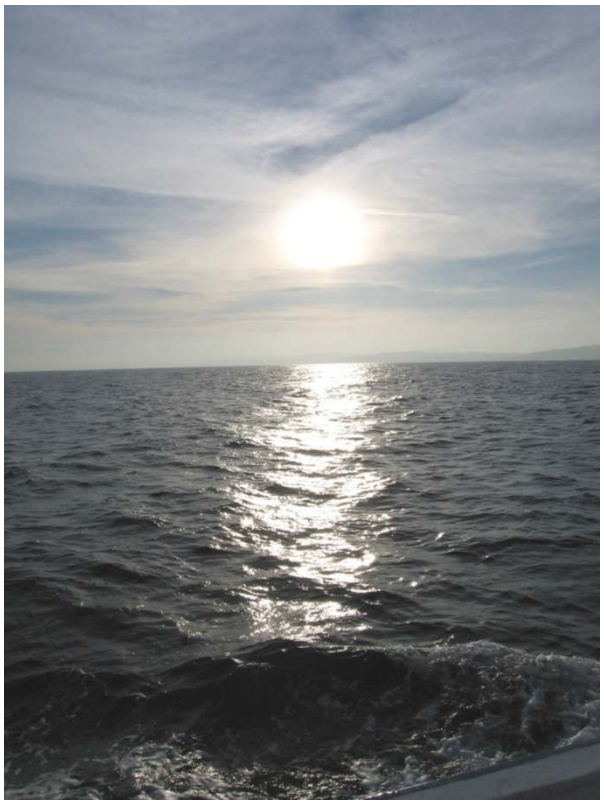


Image 15. The Black Sea Sunrise
Source: The Black Sea Commission

Audit Objective. The audit objective was to assess the implementation of commitments resulting from the Convention on the Protection of the Black Sea Against Pollution, signed on April 21, 1992 in Bucharest.

Audited entities:

- Ministry of the Environment and of Forests
  - Water Basin Administration - Dobrogea Littoral
  - National Institute for Marine Research and Development "*Grigore Antipa*"
  - Constanta Environmental Protection Agency
  - Regional Commissariat Galati / Constanta County Commissariat
- Ministry of Health / Constanța County Public Health Department
- Ministry of Transport and Infrastructure / Romanian Naval Authority
- Ministry of Administration and Interior / Inspectorate for Emergency Situations – *"Dobrogea"* of Constanța County.

STATE OF THE ROMANIAN COASTAL AND SEA WATERS QUALITY

The state of the Romanian coastal and sea water quality depends mainly on the following:

- The Danube river, which transports significant quantities of pollutants originating from the entire Danube basin;
- Other rivers (Dnieper, Dniester, South Bug, Don, Kuban);
- Atmospheric deposition;
- Off-shore activities (oil/gas exploitation platforms, navigation);
- Pollution sources located in the North-East of the Romanian littoral;
- Local pollution sources on the Romanian Black Sea coast (the contribution of the local pollution sources is insignificant, they have a limited impact as compared to the Danube River intake and the sources located on the North-East of the Romanian littoral).

The state of the Romanian coastal water quality has improved slightly but continuously, after 1990, due to the decrease of the economic activities in the Central and Eastern European countries within the Danube basin and to the modernization of the wastewater treatment plants of human settlements and industrial units in the EU Member States.

Regarding the water management major issues, the following four main categories have been identified: water quality degradation, eutrophication, reduction of the aquatic flora and fauna biodiversity and the coastal erosion of the Romanian Black Sea shoreline.

1. Water quality degradation is determined by the pollutants discharge generated by the anthropogenic activities. Pollutant load of the Danube led, through the process of sedimentation in the coastal areas, at increased levels of nutrients, heavy metals and organic pollutants in the marine sediments. Furthermore, the predominantly N-S direction of marine currents favours dispersion in the Romanian coastal waters of pollutants originating from the North-East of the Romanian littoral.

2. In the instance of coastal and sea waters, eutrophication has been the main cause of the Black Sea ecological unbalance, especially in the North-Western and Western sector. The change of the trophic status of the Romanian coastal waters was due to the nutrient intake of the Danube River, as the main source and as the favouring source, climate change.

3. The process involving reduction of biodiversity especially displayed in the Danube River – Danube Delta – Black Sea system, was caused by different types of pressure which often act synergistically, their effects being cumulated. These include pollution of marine water, over-fishing and emergence of invasive species. The

assessment of biodiversity reduction in the instance of the Danube River – Danube Delta – Black Sea system was conducted in a causality relation with the pressures in the upper and middle sectors of the Danube, given that upon entry in the country the Danube has modified physical – chemical and biological characteristics, to which are added the chemical and hydro-morphological pressures (embankment works) within the Romanian sector of the Danube.

4. Coastal erosion – in recent decades, the Romanian Black Sea shore has suffered due to coastal erosion, as a result of new conditions arising in the pre-existing landscape, including climate change and sea level rise.

Coastal erosion has resulted in reduction of the Romanian seaside beach areas, affecting about 127 km (57% of the Romanian shoreline length) and is mainly determined by the reduction of the sediment discharge carried by the Danube (consequence of the hydro-technical works from the entire Danube river basin) and by the reduction of the amount of biogenic sand, following reduction in the shellfish population, consequence of the coastal water pollution increase.

Image 16. Romanian Expert Team
Source: The Accounting Chamber of Ukraine archive

ROMANIAN MARINE MONITORING SYSTEM

Romania, as Contracting Party of the Bucharest Convention, has established and carries on a program of water pollution monitoring and assessment of the national transitional, coastal and marine water quality (Article XV 4);

Romania, as member state of the European Union, has the obligation to harmonize and implement EU legislation in the field, namely: Water Framework Directive, Directive on bathing waters, Shellfish Directive, Birds and Habitats Directives and NATURA 2000 Network, Integrated Maritime Policy, Marine Strategy Framework Directive (2008/56/CE), including the obligation of monitoring;

Romania is also Contracting Party to other European and international conventions, namely: INSPIRE Directive (*Infrastructure for Spatial Information in Europe),* containing the water component of WISE (*European Water Information System*), Initiative on Global Monitoring for Environment and Security (*GMES*), common policies on fisheries, European maritime policies, including maritime spatial planning, ACCOBAMS Convention.

Romania has one of the most comprehensive monitoring systems, with a network of stations located along the Romanian shoreline, covering transitional, coastal and marine waters; it has the capacity to report to the Black Sea Commission Secretariat complete data sets on the physical and chemical parameters, hazardous substances (in the water, sediments and biota), as well as the biological ones. The results obtained through the marine *integrated environmental* quality *monitoring* allow knowledge of the current state of the marine ecosystem, as well as of the dynamics of the physico-chemical and biological components at the spatial and temporal scale.

PRESENT STATE AND EVOLUTION TRENDS OF THE ROMANIAN BLACK SEA COASTAL ENVIRONMENT, IN THE PERIOD 2007-2009

- The state and evolution trends of Romanian marine and coastal environment continued to be physically, chemically and biologically monitored in the period 2007-2009, and the results were compared with the historical data (reference periods from the early '60s or more recent years).
- The state of the marine and coastal environment in 2009 confirms a general trend of improvement of the monitored parameters.

THE BLACK SEA AND ITS SUSTAINABLE DEVELOPMENT

The strategic documents for sustainable development implementation are: the National Strategy for Sustainable Development of Romania and the 2009 - 2012 Governance Program.

INTEGRATED COASTAL ZONE MANAGEMENT – THE KEY TOOL OF SUSTAINABLE DEVELOPMENT

The European strategic documents for the Integrated Management of Coastal Zones (ICZM) implementation are: the ICZM Strategy Directive; the Water Framework Directive; the Shellfish Directive; the Birds and Habitats Directives and NATURA 2000 Network; the Integrated Maritime Policy; Marine Strategy Framework Directive; the INSPIRE Directive containing the water component of WISE; the Initiative Global Monitoring for Environment and Security (GMES); the common policies on fisheries; the European maritime policies, including maritime spatial planning.

INSTITUTIONAL FRAMEWORK

It has been established the National Committee of the Coastal Zone, within which there is a Permanent Technical Secretariat and Working Groups have been set up (responsible entity: NIMRD Constanța).

REGIONAL COOPERATION

The NIMRD Constanța has five national focal points operating within the Black Sea Commission Advisory Groups in the following areas: Marine Pollution Monitoring and Assessment; Land-based sources of pollution; Biodiversity Conservation; Fisheries and other living marine resources management; ICZM.

ANTHROPOGENIC PRESSURES

Accentuated development of the various socio-economic activities within the natural space of the coastal zone: Tourism and recreation; Agriculture and food industry; Shipyards; Petrochemical Industry/Oil-refineries; Mining/Extractive Industry; Constructions/holiday houses; Aerial transport/Airports; Ports/Navigation; Tourist Ports; Manufacture Industry; Nuclear Industry; Military and Defence Activities.

FINANCING THE BLACK SEA ENVIRONMENTAL PROGRAMS. ENVIRONMENTAL PROGRAMMES FINANCED BY THE EUROPEAN UNION

During the period of 2000 - 2006, Romania was the beneficiary of ISPA financial assistance - Instrument for Structural Policies for pre-Accession.

Since January 2007, the date of its accession to the EU, Romania is the beneficiary of the Cohesion Fund for Environment Infrastructure.

- EX-ISPA IN CONSTANȚA, one of the main international ports and a city with a flourishing tourist activity.

The implementation stage. The non-reimbursable financial assistance granted through the ex-ISPA Program in order to finance the measure „Constanța sewerage and Wastewater Treatment Plant Rehabilitation, Romania" is of 96 556 653 Euros, out of which the EU contribution is of 72 417 490 Euros.

The general objective of the measure consists in the improvement of the Environment infrastructure in Constanța. More specifically, through this measure, the Black Sea and the coastal line will be protected against the pollution caused by the uncontrolled disposal of untreated industrial wastewater and sewerage, through the building and extension of Wastewater Treatment Plants that will treat the wastewaters according to the accepted standards of the effluent quality.

The objectives of this project have been achieved to a great extent, the project being in its final implementation stage.

- SECTOR OPERATIONAL PROGRAM FOR THE ENVIRONMENT (SOP ENVIRONMENT).

Projects in the area shall be further financed through the SOP ENVIRONMENT, the document which sets the strategy for the allocation of European funds for the environment sector in Romania, having a total budget of about 5.6 billion Euros and the enforcement period – 2007-2013.

CONCLUSIONS

Following the examinations conducted, an assessment was made of the progress in the implementation of commitments resulting from the Convention on the Black Sea Protection Against Pollution, as well as the monitoring and analysis of the efficiency of the use of public funds allocated for this purpose (year 2009) and a reasonable assurance was obtained relating to the following aspects:

- Romania has made entreaties and has taken measures relating to the compliance of the engagements undertaken by means of the Bucharest Convention.
- An institutional structure is in place in this respect as well as systems for control, prevention and consequences elimination of the marine environment pollution.
- Financial programs have been provided.
- The reporting activity to the Permanent Secretariat of the Commission on the Protection of the Black Sea Against Pollution (BSC) is performed according to the Work Program of the BSC.

RECOMMENDATIONS

At regional level

- Improving the collaboration between the BSC member countries in order to carry out a sustainable development of the Black Sea;
- Improving the coordination within the BSC;
- Improving the scientific regional cooperation;
- Enhancing efforts to reduce pollution of the Danube basin waters.

At national level

- Improving the coordination between national authorities in order to carry out a sustainable development of the Black Sea coastal zone;
- Improving the capacity of the health authorities to control the implementation of the legislation in the field of bathing water;
- Continuing entreaties for the adhesion of the European Union, represented by the European Commission, to the Convention on the Black Sea Protection Against Pollution, in order to facilitate the European funds accession process;
- Strengthening the administrative capacity regarding the European funds management and implementation at central, regional and local level;
- Continuing the works for wastewater collection and treatment in the human settlements, consisting in the rehabilitation, modernization and extension of wastewaters sewerage networks, as well as of the wastewaters treatment plants and installations, so as to comply with Directive 91/271/EEC, respectively modernization of all treatment plants on the coastal zone;
- Continuing the actions to integrally protect and rehabilitate the coastal zone, from the North to the South, and the environmental factors.

PREAMBLE

Within the scope of the Coordinated Parallel Audit of Protection of the Black Sea against Pollution the Accounting Chamber of Ukraine has conducted two audits on national level:

First. Audit of Utilization of the State Budget Resources by Scientific and Research Institutions of the National Academy of Sciences of Ukraine in Sevastopol City (Report approved on February 9, 2010, no. 2-4).

Audit aim – to ascertain the real state of utilization of the state budget resources allocated to research institutions of the National Academy of Sciences of Ukraine in Sevastopol City in 2007-2009, including those allocated for researches of the ecosystems of the Black Sea and the Azov Sea Basins.

Audit objects: The National Academy of Sciences of Ukraine, The Institute of the South Seas Biology Named after A. Kovalevsky, The Sea Hidrophysical Institute of the National Academy of Sciences of Ukraine.

Among common general activities of the institutions mentioned above, are the researches on development of effective measures for biological diversity conservation in the Black Sea and the Sea of Azov, establishment of scientific basis for efficient utilization of their resources and prevention of the negative impact of anthropogenic activity on marin environment. The effectiveness of implementation of these challenges was the audit subject.

Second. Audit of effectiveness of utilization of the state budget resources, allocated for providing ecological safety in the Azov-Black Sea Basin, its protection, regulation and reproduction of the water biological resources (Report approved on March 9, 2010, no. 5-2).

Audit aim – to ascertain real state of effectiveness of utilization of the state budget resources allocated for providing ecological safety in the Azov-Black Sea Basin and for regulation, protection, researches and reproduction of the biological water resources.

Audit objects:

- The Ministry of Environmental Protection, State Ecological Inspection, state authorities of environment protection in Odessa and Donetsk regions, State Ecological Inspection in Odessa region, State Ecological Inspection in North-Western Black Sea region;
- The State Committee of Fisheries and Fishing Industry, East Black Sea and Sea of Azov Basin Administrations for protection, utilization and reproduction of water living resources and fishing industry regulation;
- Business entities – state budget funds recipients.

One of this audit questions was the assessment of implementation of the Accounting Chamber of Ukraine recommendations on the results of the Audit of implementation of Provisions of Convention on the Protection of the Black Sea Against Pollution, conducted jointly with Bulgarian National Audit Office in 2009 (Report approved on January 21, 2009, no. 2-1).

Audit aim – was ascertaining and assessment of the real state of implementing of the provisions of the Bucharest Convention by Ukraine. According to this aim, three main issues were covered by audit:

- legal and normative regulation of implementation of provisions of the Bucharest Convention on the Protection of the Black Sea Against Pollution;
- organization and results of ecological monitoring conduction;
- implementation of the State Program on Protection and Reproduction of the Black Sea and the Sea of Azov Environment.

Audit objects:

- The Ministry of Environmental Protection of Ukraine;
- State authorities of environment protection on regional level;
- State Ecological Inspection of Ukraine;
- State Ecological Inspection on regional level;
- Scientific Institution «Ukrainian Scientific Center of Ecology of the Sea».

AUDITS RESULTS

In order to ensure the implementation of requirements of the Convention on the Protection of the Black Sea Against Pollution, in Ukraine, its main provisions have been consolidated in national legislation as obligatory for all entities. Audit objects have developed and approved main aims and directions of state policy realization in this sphere. The responsible executive authorities have been assigned.

Main regulatory document, which ensures the implementations of regulations of the Convention on the Protection of the Black Sea Against Pollution on the territory of Ukraine is the State Program on Protection and Reproduction of the Black Sea and the Sea of Azov Environment, adopted by the Law of Ukraine in 2001. Organizational support and coordination of Program realization activities are entrusted to the Ministry of Environmental Protection.

The Program object is the Black Sea and the Sea of Azov environment within inner sea waters, territorial sea, exclusive (marine) economic zone of Ukraine and coastal line.

Besides, in order to implement state policy, aimed at prevention of increase of anthropogenic impact on environment in Ukrainian rivers basins, the Supreme Soviet of Ukraine have approved the State Program for Water Industry Development by adopting a Law of Ukraine in 2002.

The Programs stipulated:

1) necessity of improving water resources management by implementing the basin management approach;

2) development and implementation of programs and action plans for improving environmental state of basins of Dnieper, Danube, Dniester, South Bug, Siver Donets and small rivers by the Black Sea and the Sea of Azov;

3) coordination of activities using the basin approach, which is illustrated on the scheme of regulatory and organizational provision of ecological safety in the Black Sea and the Sea of Azov Basin, Figure 2.

State authorities of Ukraine have established auxiliary structures, stipulated by Bucharest Convention and assigned legal principles of sea waters and territorial sea protection.

In Ukraine, the Ministry of Environmental Protection is a central executive authority responsible for carrying out commitments, which result from the membership of Ukraine in the Commission of Protection of the Black Sea Against Pollution.

In 2002, the Ministry of Environmental Protection has assigned active center for monitoring and assessment of pollution from land-based sources – Ukrainian Scientific Center of Marine Ecology, which is located in Odessa.

Image 17. Working process at the III Expert Team Meeting for Coordinated Parallel Audit, April 12, 2011 –Bucharest, Romania
Source: The Romanian Court of Accounts

Figure 2. Scheme of regulatory and organizational provision of ecological safety in the Black Sea and the Sea of Azov Basin

Figure 3. The Black Sea waters monitoring system in Ukraine

Information from monitoring subjects is forwarded to the Center of Sea Ecology annually. The received data is included in the Black Sea and the Sea of Azov pollution state indicators data base – "SeaBase" – as the components of the integrated geographic information system, established within TACIS Black Sea environmental projects. The Black Sea waters monitoring system is illustrated on Figure 3.

The requirements regarding prevention of pollution and obstruction of inner sea waters and territorial sea of Ukraine by enterprises, establishments, organizations of all patterns of ownership, citizens of Ukraine, as well as by foreign legal, physical bodies and persons without citizenship, and also by Ukrainian and foreign vessels, which are situated in these waters, are stipulated by Regulation on Protection of Inner Sea Waters and Territorial Sea of Ukraine against Pollution and Obstruction, dated February 29, 1996.

The ensuring of ecological supervision realization is carried out by State Ecological Inspection on Environment Protection in North-Western Black Sea Region, State Black Sea and Sea of Azov Ecological Inspection and State Azov Sea Ecological Inspection.

According to their provisions, the inspections mentioned above are special sub-sections of the Ministry of Environmental Protection of Ukraine and are under its management.

The inspections activities extend to inner sea waters, territorial sea, exclusive (marine) economic zone and continental shelf of Ukraine, and estuaries.

The mechanisms of implementing the Bucharest Convention provisions regarding responsibility and supervision over damaging the Black Sea marine environment in regions under the sovereignty of Ukraine, were not adequately adopted, and one of the main environmental principles "polluter pays" is ensured inadequately.

The dynamics of the Black Sea pollutants intake from main rivers of Ukraine testifies the downward tendency from 1995 to 2003. However starting from 2003 this tendency became upward, as result of economic activity resumption in the Black Sea region.

At the same time main amount of the Black Sea pollutants come from the Danube river flow. The Danube river flow volume makes up approximately 80 per cent of total flow of other rivers, which fall into the North-Western part of the Black Sea. Second place after the Danube river by the amount of pollutants, which flow to the Black Sea, belongs to Dnieper.

It has been determined, that Ukraine is not using all possibilities of Bucharest Convention, regarding more effective mobilization of funds for maintenance of institutions stipulated in it.

Audits testified, that impact of anthropogenic factors on natural complexes has reached an enormous extent and may be compared to a number of natural processes, and besides pollution issues, one of priority areas of solving main issues regarding the Black Sea ecological condition is preservation and reproduction of its biological diversity.

Anthropogenic changes of the Black Sea ecosystem led to the decrease of biological productivity of the major part of fish species. Pollution level of the Black Sea exceeds capability of water bodies to self clean and poses a threat to human health. In connection to this, measures aimed at regulation, protection, research and reproduction of water biological resources and provision of environmental safety in the Black Sea basin gain special significance.

RECOMMENDATIONS

With regard to the results of conducted audits, the Accounting Chamber of Ukraine carried out recommendations to The Cabinet of Ministers of Ukraine and The Ministry of Environmental Protection:

- to hasten the implementation of the basin approach to water resources management, which is declared by the Water Code of Ukraine, and, in particular, to set standards for maximum allowed pollutant dumping;
- to take measures to increase coordination of activities among state ecological inspections;
- to improve financial support of implementation of the State Black Sea and Sea of Azov Ecological Monitoring Program using the funds of entities, which implement it, in particular, to conduct annual field researches of the state of marine environment;
- to liven international cooperation in order to mobilize additional funds for conducting activities in the sphere of protection of the Black Sea against pollution.

Image 18. Working process at the II Expert Team Meeting for Coordinated Parallel Audit of Protection of the Black Sea against Pollution, October 20-21, 2010 – Istanbul, Turkey
Source: The Turkish Court of Accounts

Image 19. Working process at the III Expert Team Meeting for Coordinated Parallel Audit of Protection of the Black Sea against Pollution, April 12, 2011 – Bucharest, Romania
Source: The Romanian Court of Accounts

The legal basis for the international cooperation in the area of Black Sea basin marine environment protection is the international agreement – The Convention on the Protection of the Black Sea Against Pollution, adopted in Bucharest in April 1992 and ratified by Russian Federation in August 1993.

The integral parts of Bucharest Convention are Protocol on Cooperation in Combating Pollution of the Black Sea Marine Environment by Oil and other Harmful Substances in Emergency Situations, Protocol on Protection of the Black Sea Marine Environment Against Pollution from Land Based Sources, Protocol on the Protection of the Black Sea Against Pollution by Dumping.

The Bucharest Convention regulations are harmonized with the separate norms of other international agreements, including the International convention on prevention of pollution from ships, International conventions on providing preparedness in case of oil pollution, control and cooperation, Convention on international guidance for prevention of accidents at sea, International conventions on civil responsibility for the damage caused by oil pollution.

The Parties of Bucharest Convention as for now are: Russian Federation, Bulgaria, Romania, Georgia, Ukraine and Turkey.
During the 22nd session of Black Sea Commission, in January 2010, it has been noted that the current environmental state of the Black Sea is not satisfactory, first of all due to the continuing pollution of the water area by oil and oil products, as the results of high density of tanker shipping of hydrocarbons and general increase cargo traffic through Black Sea ports. At the same time, during the discussion on the national reports of Bucharest Convention implementation, member countries have acknowledged positive progress, caused by the Parties' effort on protection of the Black Sea against pollution.

According to the requirements under the Bucharest Convention Russian Federation has the obligations to develop and adopt national action plans and potential response options in case of Black Sea pollution, as well as commitments to timely inform other Parties about the cases of pollution and measures taken for their elimination.

It has been established, that Russian Federation is currently completing its domestic procedures, necessary for making a decision to sign the Contingency plan on cooperation in fighting the Black Sea marine environment pollution by oil and other harmful substances.

According to the Russian Federation government direction, dated February 11, 2002, no. 166-p, the organization of commitments fulfilment by Russian Federation, which are resulting from the Bucharest Convention on Protection of the Black Sea Against Pollution, is assigned to the Ministry of environment and natural resources of Russian Federation.

The inspection has shown, that the regulations of the ratified in 1993 Bucharest Convention meet the international foundations and norms of the Russian Federation legislature. There are no issues in the area of protection of the Black Sea against pollution, that aren't settled in the Russian Federation legislature.

According to the articles XVII and XVIII of the Bucharest Convention, in order to achieve the declared targets the Commission on Protection of the Black Sea Against Pollution (hereinafter referred to as – the Black Sea Commission) has been established.

Seven consulting groups have been established within the Black Sea Commission on: environmental aspects of navigation; pollution loads monitoring and assessment; land based pollution control; information sharing; coastal area comprehensive

management; biological diversity preservation and environmental aspects of fisheries.

In order to implement the regulations of Bucharest Convention the Global Environment Fund has established the Black Sea Environmental Program in 1993. The Program's coordination center was established in 1994 in Istanbul. Six coordination centers for implementing the Program regulations with the following distribution of responsibilities have been set up: for Bulgaria – center of response to the emergencies situations relating to navigation; Georgia – coordination center on biodiversity; Russian Federation – coordination center of activity on development of the methodology for comprehensive coastal area management; Romania – coordination center on fisheries; Turkey – coordination center on land based pollution control and for Ukraine – coordination center on monitoring programs development.

The Black Sea Environmental Program was completed in 2008 by carrying out the GEF project "On the Black Sea ecosystem rehabilitation". The main purpose of the project was to support the Black Sea basin countries (Bulgaria, Georgia, Russian Federation, Romania, Turkey and Ukraine) in implementation of practical measures on rehabilitation and protection of the Black Sea, declared under the Strategic Action Plan on Black Sea rehabilitation and protection in 1996.
The Black Sea Commission session was held in April 2009, during which the Declaration, that establishes general policy for countries regarding Black Sea, and an updated Black Sea Strategic Action Plan, that reflects main working directions within the Black Sea Commission, were adopted.

In accordance with the Protocol on Protection of the Black Sea Marine Environment Against Pollution from Land Based Sources, which is an inevitable part of the Convention on the Protection of the Black Sea Against Pollution, the Parties shall take all necessary measures to prevent and reduce pollution of the marine environment of the Black Sea caused by discharges from land-based sources on their territories such as rivers, canals, coastal establishments, outfalls, as well as pollution emanating from any other land-based source, including through the atmosphere.

In order to provide protection of water objects against pollution by discharging waste and drain waters, the environmental and water legislature of Russian Federation stipulates the establishment of the permissible norms for pollutant discharges into water objects according to the norms of the permissible impact on water objects.

The legal protection of the water objects is expressed by establishing measures and control of the water protection zones and coastal strips, water objects under special protection, and by conducting compulsory state environmental inspection, which justifies planned economic and other activity within inland sea waters, territorial sea, adjacent zone, continental shelf and exclusive economic zone of Russian Federation, as well as within the natural territories under special protection.

All rivers, flowing to the Black Sea (except the Psou River), flow through the territory of one constituent of Russian Federation – Krasnodar region.

The intensive economic and anthropogenic activity causes negative influence on the natural bioproductivity and functionality of the Black Sea ecosystem, which is one of the most important regions of international significance for fishing and recreation and tourist industry.

The geographical reticence of the Black Sea stipulates its vulnerability regarding the environmental balance. The sea accumulates pollution, brought by waters flowing from the territory of coastal states. The Black Sea pollution level exceeds the self-cleaning ability of the water body and endangers water bioresources and human health.
Intensification of shipping has gradually increased the risk of pollution of water bodies, including pollution by transferring

pollutants together with fouling and ballast waters.

The stirring up of dredging in recent years presents a special danger. The movement of major volumes bottom sediments in water bodies leads to degradation of bottom biocoenoses and marine environment pollution by suspended and toxic matters.
In the course of inspection, it has been established, that discharge overregulation and reallocation, which disturbed natural hydrological conditions of rivers of the Black Sea basin, caused the reduction of biological productivity of the majority fish species, and the natural productivity of sturgeons has been practically lost. As a result of Black Sea environment state deterioration the population of living organisms is steadily reducing, the number of separate fish species has reduced and is kept only at the level of existence.

In 2009 the total amount of water users (including water intakes from underground water objects) is 294, which is less than in 2008 by 3 and less than in 2007 by 7. The volume of intakes from surface water sources of the Black Sea basin in 2009 has reached 1 080 thousand cu. m, or by 12.2 % less than in 2008, and the volume of water discharges – 138 800 thousand cu. m, or by 1.2 % less than in 2008. Still the wastewater discharge into surface water sources in the Black Sea basin in 2009 has increased by 47.8% comparing to 2008 and reached 18 860 thousand cu. m.

For the last three years the total number of water users drafting water from the Black Sea or discharging it into the Black Sea reached 105. The volume of water drafted from the Black Sea in 2009 was 408 thousand cu. m, and the number of water users drafting water from the Black Sea – 27. In 2009, 104 water users discharged water into the Black Sea, the volume of water discharged by the mentioned water users reached 218 400 thousand cu. m, including 18 240 thousand cu. m of waste water, as the result the 2008 level has been exceed by 50%.
The main source of Black Sea pollution on the territory of Russian Federation is waste water, flowing into the sea through deep-water and river discharges of water treatment plants at the enterprises of housing and communal services.

High level of economic activity in the Black Sea, which has half-closed ecosystem, is the reason for high level of environment vulnerability of this region. One of the most serious hazards to the Black Sea ecosystem is pollution by oil and other harmful substances, first of all considering high density of shipping and coastal fishing in the Black Sea, which requires the coordination of efforts on possible emergency situations elimination at the regional level.

In Russian Federation the functions of state policymaking on legal regulation in the area of research, utilization, reproduction and protection of natural resources, including water objects, their pollution, as well as environmental monitoring are implemented by the Ministry of natural resources and environment. The provision of environmental safety and protection of the Black Sea against pollution is implemented by regional authorities and establishments of federal services and agencies, which are part of the Ministry of natural resources and environment network.

The state monitoring of water objects and organisation of its conduction; development of the scheme of comprehensive utilization and protection of water objects of The Black Sea Basin rivers; development of permissible norms of impact on rivers of the Black Sea basin is implemented by the basin administration of the Federal agency of water resources.

Great role in protecting natural environmental systems and biological diversity belongs to specially protected natural territories: Caucasian state nature reserve; Sochi national park and Sochi state natural wildlife preserve of federal importance.

According to the Regulation on state monitoring of water objects conduction, adopted by the Russian Federation governmental regulation on April 10, 2007,

no. 219, the organisation and conduction of state monitoring of water objects is implemented by the Federal Agency of Water Resources, Federal Agency of Subsoil Utilization, Federal Service of Hydrometeorology and Environmental Monitoring together with the Federal Service of Nature Management Supervision, Federal Service of Environmental, Technological and Atomic Supervision, Federal Service of Supervision over Protection of Consumers and Human Prosperity, Federal Agency of Fishing, Federal Service of Supervision over Transportation, empowered authorities of the Russian Federation constituents, owners of water objects and water users.

Conduction of monitoring of the Black Sea environment is provided by regional and federal structural subdivisions of the Federal Service of Hydrometeorology and Environmental Monitoring and its research institutes.

The monitoring of the Black Sea marine environment in the area of Adler-Sochi-Adler is also conducted by: NGO "Typhoon"; Center of Oceanographic Data at the All-Russian Research Institute of Hydro-Meteorological Data; Federal State Authority "State oceanographic institute" and Institute of Global Climate and Environment at Hydro-Meteorological Committee of Russian Federation and Russian Academy of Sciences.

The permissible norms of impact on water objects of the Black Sea basin of Russian Federation have been developed by the Kuban Basin Administration and adopted by the Federal Water Resources Agency for all 26 water objects. Frequency of sample drawing, the set of objects under supervision and supervision parameters and geographical scale of the water body under supervision are not quite sufficient.

In addition the monitoring of bottom sediments, suspension, aerosols, biota and structural biological indices pollution, as well as monitoring of microbiological characteristic of beaches and floating trash assessment is not being conducted. Due to the absence of proper craft the observation of background state of waters distant from shore has not been conducted. The control over pollutants is conducted using minimum quantity of indices.

In order to prevent exhaustion of water resources and irreversible environment deterioration, and protect human activity and business entities against floods and other harmful impacts of natural and anthropogenic waters, the Federal Water Agency implements the provision of rational and safe water utilization, establishes the norms of acceptable impact on water objects of the Black Sea basin.

The developed norms of acceptable impact are intended to set safe levels of pollutants and microorganisms content, volumes of water resources catch and water pumps, considering the climatic and natural peculiarities and established natural and anthropogenic conditions in the corresponding region.

According to point 226.7 of the sub-program "Objects Construction and Reconstruction for Development of the City of Sochi as a Mountain Climatic Resort" of the Program for Olympic Objects Construction and Development of the City of Sochi, by the Order of the Federal Water Resources Agency dated April 1, 2010, no. 69, the Program for Water Objects Monitoring, situated in the Olympic Objects Construction Area in the City of Sochi has been approved. This program stipulates the order of conduction of water resources, bottom, coast and water protection areas monitoring, as well as monitoring of hydroeconomic systems and facilities in the Olympic objects construction area.

CONCLUSIONS

In Russian Federation the normative legal base in the sphere of protection of the Black Sea against pollution corresponds to international principles and norms of the Russian Federation legal acts.

At the same time, the absence of coordinated interstate policy of coastal countries on several normative acts regarding the Black Sea protection still exists. Clear distribution of powers of federal executive authorities in the sphere of fish industry and subjects of Russian Federation in the process of distributing coastal water resources quota, is in lack.

As result of control and supervisory activities of Russian Natural Supervising Authority, conducted on the Black Sea in 2009, 224 infringements have been detected, while the share of removed violations made up 77,7%. 8.8 M rubles have been exacted from 11.4 M rubles, presented for reimbursement, or 77%.

328 water users have been prosecuted, 7.5 M rubles of penalties charged, 6.4 M rubles – exacted, or 85%.

The monitoring of bottom sediments, suspended matters, particulate pollutants, biota pollution and structural biological indicators, as well as beach microbiological characteristics and floating waste assessment is not being conducted. Due to the absence of corresponding vessels the observation over background state of remote waters is not being conducted. Supervision over pollutants is being conducted on minimal quantity of indicators.

The instrumental stock and developed methods allow conducting content analysis of the main groups of pollutants (oil hydrocarbons, surfactants, heavy metals, pesticides) in water environment in adequate volume, however, a part of instruments requires modernization and replacement with more modern ones.

In 2008, comparing to 2007, the quality of sea water hasn't changed significantly and is labeled as "moderately polluted" – "conditionally clear".

Image 20. Russian Expert Team
Source: The Accounting Chamber of Ukraine archive

Image 21. Russian Expert Team
Source: The Romanian Court of Accounts

INTRODUCTION

The Black Sea is one of the most remarkable regional seas in the world. It is almost totally isolated from the world Oceans, is more than 2200 m deep and has water inflow from basin over 2 million km^2 including 1/3 of the continental Europe. The only channel connecting it to the rest of the world is the Bosphorus Straight, which is 35 km long and is as shallow as 40 m at some places.

Isolation from the neutralizing features of the world oceans and its huge catchment area made the Black Sea especially susceptible to the eutrophication (a phenomenon of over fertilization by nutrients and subsequent bloom of phytoplankton). Eutrophication has caused radical changes in the Black Sea ecosystem during the last three decades, negatively affecting sea biodiversity as well as recreational quality of the waters.

The Black Sea Coast has a huge social and economic importance for Georgia, for recreation and tourism development. Lately the state policy aimed at the realization of the country's tourist potential and sharp increase in the number of the holidaymakers on the Georgian Coast has increased the importance of achieving and maintaining high quality of Black Sea waters a great deal.

In order to combat the deterioration of the ecological state of the Black Sea, the Black Sea basin countries have signed a convention against the Black Sea pollution in 1992 in Bucharest.

The ratification of the Bucharest Convention by the Parliament of Georgia emphasized the importance of the Black Sea for the country and the Parliament's commitment towards implementation of the obligations assumed by the Bucharest Convention itself

CORRESPONDENCE OF THE LEGAL FRAMEWORK AND REGULATIONS WITH THE OBLIGATIONS ASSUMED BY THE BUCHAREST CONVENTION

In order to ensure compliance with the measures foreseen by the Bucharest Convention Georgia has enacted appropriate laws and regulations , such as laws „About Water", „About Environmental Impact Permits", order of the Minister of Health „About the Approval of the Sanitary norms" and others.

These norms regulate issues related to the water use, determine the terms and conditions for issuing the environment impact permits, set level of maximum allowed discharges and concentrations into the water objects etc. However, the existing legislations needs further improvement for harmonization with the EU norms. Currently the new framework for the water law is being drafted which will incorporate River Basin and Integrated Coastal Zone Management Principles and will be in compliance with EU legislation. According to the Second National Environmental Programe the new water law is set to be approved by 2011-2012. Furthermore, the economic instruments for stimulating the pollution reduction should be used more widely.

Image 22. Georgian Expert Team
Source: The Turkish Court of Accounts

ORGANIZATIONAL STRUCTURE OF THE REGULATING BODIES, THEIR ROLES AND DESCRIPTION OF ACTIVITIES

Entities charged with the protection of the Black Sea and its river basin belong to the various levels of Government**:**

THE MINISTRY

The main responsible body for the implementation of the Bucharest Convention is the Ministry of Environment Protection and Natural Resources. The ministry contains: regional territorial units (Samegrelo-Zemo Svaneti and Central West directorates), Directorate of the Water Resource Management ,National Environment Agency, Inspection of The Environment Protection.
The responsibility of the regional directorates of the Ministry of Environment among others is to control the accuracy of the water registration by the water users:

- The Directorate of the Water Resource Management
- National Environment Agency
- Inspection of Environment Protection
- Directorate of Environment Protection and Natural Resources of Adjara

The entities involved in the Black Sea protection and monitoring belong to the different levels of management. Without the integral structure with clearly defined responsibilities some instances of duplication of functions has been observed. As the entities charged with the protection of the Black Sea belong to the different levels of government (local, regional and central), the lack of clearly formed structure impairs coordination, exchange of Information and generally reduces efficiency and effectiveness of their actions.

CONTROL MEASURES

In Georgia waters used by industrial, construction, agricultural and other organizations, firms and institutions (water users) are subject to state registration in spite of the supplying and receiving water bodies. List of water users for which the water usage has to be registered, is defined by the Ministry. Potential water user is obliged to present Ministry a document "Project of the Normatives of the Polluting Substances Flowing into the Surface Waters with the Discharged Waters", where technological process has to be described: what polluting substances may flow into the water and calculations of MAC (Marginally Allowed Concentrations). Ministry is reviewing the document and in case of no objection the water user gets Environmental Impact Permit within the "Marginal Allowed Normatives for the Polluting Substances Flowing into the Water with Discharged Waters", which is mandatory to comply with**.**

Registration of discharged water and pollutants from the water users in the Black Sea basin Rivers is carried out by the entity within the Ministry-Directorate of Management of Water Resources. In this unit information about the used/discharged water by the water users alongside with the pollutant substances for a whole year is gathered annually. Data provided by every water user has to be in accordance with the marginal allowed concentrations that are defined in the Technical Reglament for environmental protection approved by the Ministry.

The Directorate is making sure that the provided data is correct (makes adjustments of technical nature) and consolidates it in one database, groups according to the sectors of economy, river basins, territorial units and produces annual reports.

MANAGEMENT OF THE DISCHARGED WASTEWATER FROM THE MUNICIPALITIES

One of the sources of the pollution of the Black Sea is the inadequately treated municipal waste water. The numerous infrastructure development projects that are under the way in the littoral regions of Georgia, especially the ones related to the rehabilitation of the sewage and water supply systems will significantly improve the ecological state of the Georgian coast, but

further investments in the wastewater treatment facilities and other infrastructure projects are necessary.

CONSERVATION ACTIVITIES

In 1998, the World Bank approved a USD 4.4 million loan to Georgia Integrated Coastal Management Project (GICMP), which was also funded by a USD 1.3 million grant from the Global Environment Fund, a USD 1 million grant from the Dutch Government, and USD 0.9 million contributed by the Government of Georgia for a total project cost of USD 7.6 million. According to the World Bank Project Appraisal Document, GICMP was designed to "strengthen institutions in Georgia to manage the coastal resources of the Black Sea by developing, testing and evaluating methods to effectively integrate environmental planning and management into economic development activities along the Black Sea coast," and "to assist Georgia in meeting its international commitments… including conservation of biodiversity at sites of international significance on Georgia's Black Sea coast, such as the Kolkheti and Kobuleti wetland Ramsar sites." The two main components of the GICMP project are the establishment of the Kolkheti National Park and the development of the State Consultative Commission on Integrated Coastal Zone Management which is intended to integrate development with environmental management.

BLACK SEA MONITORING

Monitoring is one of the prerequisites for the protection of the Black Sea and elimination of the polluting hotspots. Monitoring in itself implies constant supervision of the quality of surface (and marine) waters, gathering data for compiling databases and in order to take prompt action if needed.
The Black Sea monitoring system is unevenly developed. In the Adjara Autonomous Region the monitoring is carried out irregularly. In years 2007 and 2008 within the framework of the coordinative plan of Directorate of the Environmental Protection and Natural Resources the monitoring of the physical and chemical qualities of marine water had taken place. The samples have been taken at the 8 points of the water use. The sample taking and monitoring took place from the 1st of July to 10 of October. In Poti the monitoring has been done by the LTD "Laboratory Research Center". In the audited period every year in June-September the Center was conducting monitoring on the Black Sea water quality. Samples have been taken from 3-4 points and few physical and chemical, as well as microbiological parameters been measured.

Rivers have been monitored by the National Environment Agency. The monitoring has a regular character and its data is put into the databank. On the grounds of this information further reports and newsletters are prepared. By the main parameters the pollution standards are within the allowed limits set by the Order N297/N.

Georgia is a party to the Aarhus Convention and the monitoring data is available at the web page www.aarhus.ge. The Ministry of Environment cooperates with the Black Sea Comission and presents it with the annual reports about the ecological state of the Black Sea.

RECOMMENDATIONS

- The legislative framework has to be optimized in order to ensure the meeting the obligations assumed by the Bucharest Convention.
- The optimization of the structure of the bodies responsible for the Black Sea protection has to be carried out; more centralized, integral and efficient structure has to be created with clearly set duties and responsibilities. Such structure has to be conducive to the collection and exchange of information.
- The Ministry has to develop monitoring network for the Black Sea and its river basin.
- Cooperation in Black Sea protection measures and scientific research should be intensified on a regional level.

Section III. Comparative analysis and assessment of auditing data of SAIs – participants of the audit

3.1. National strategies

The Bucharest Convention stipulates that each Contracting Party shall ensure the application of the Convention in those areas of the Black Sea where it exercises its sovereignty, as well as its sovereign rights and jurisdiction.

The Contracting Parties take all necessary measures to prevent, reduce and control pollution thereof in order to protect and preserve the marine environment of the Black Sea.

With the purpose of carrying out and adopting specific measures on implementation of Bucharest Convention, the Ministers of environment of participant countries of convention on October 31, 1996 in Istanbul, Republic of Turkey, have agreed and signed the Strategic Action Plan for the environmental protection and rehabilitation of the Black Sea, that has been updated on April 7, 2009 in Sofia, Republic of Bulgaria.

According to the Strategic Action Plan, it has been determined that main issues of the Black Sea environment pollution, and their causes, could be most effectively and appropriately addressed through the aims of four Ecosystem Quality Objectives (EcoQOs):

EcoQO 1: To preserve commercial marine living resources

EcoQO 1a: Sustainable use of commercial fisheries and other marine living resources

EcoQO 1b: Restore/rehabilitate stocks of commercial marine living resources

EcoQO 2: Conservation of Black Sea Biodiversity and Habitats

EcoQO 2a: Reduce the risk of extinction to threatened species

EcoQO 2b: Conserve coastal and marine habitats and landscapes

EcoQO 2c: Reduce and manage human mediated species introductions

EcoQO 3: Reduce eutrophication

EcoQO 4: Ensure Good Water Quality for Human Health, Recreational Use and Aquatic Biota

EcoQO 4a: Reduce pollutants originating from land based sources, including atmosphere emmissions

EcoQO 4b: Reduce pollutants originating from shipping activities and offshore installations

National audits, which had been conducted by SAIs within the scope of the parallel audit, have generally testified that all countries of the Black Sea coast had implemented main regulations of the Bucharest Convention in their national legislation.

The main legislative acts of the Black Sea countries on implementing the Bucharest Convention in their national legal framework are:

- Republic of Turkey – The Law on Ratification of Bucharest Convention, dated March 29, 1994; The Environment Law (Official Gazette (O.G.): dated August 11, 1983, no. 18132) with modifications and amendments (Law no. 5491 dated 2006); The Law About the Emergency Interference and Indemnification In Case Of The Pollution Of Sea Environment By Petroleum and Other Harmful Substances (O.G.: dated March 11, 2005, no. 25752); Organic Agriculture Law (O.G: dated December 1, 2004, no. 25659).

- Republic of Bulgaria – The Law on Ratification of Bucharest Convention, dated February 23, 1993; The Environmental Law.

- Romania – *Law* no. *98/1992* for the ratification of the Convention regarding the *Black Sea* protection against pollution; Water Law no. 107/1996 with modifications and amendments; Law on environmental protection no. 137/1995, repealed and replaced by Government Emergency Ordinance no. 195/2005, *with further modifications and amendments;* Government Decision no. 546/2008 on the management of the bathing water quality – that transposes the *Directive 2006/7/CE* concerning the management of bathing *water* quality.

- Ukraine – Resolution of Verkhovna Rada of Ukraine (Parliament) "On ratification of the Convention on the Protection of the Black Sea Against Pollution" dated February 4, 1994, no. 3939-XII; Law of Ukraine "On the basis of national security" dated June 19, 2003, no. 964-IV; Law of Ukraine "On Environmental Protection", dated June 25, 1991.

- Russian Federation – The Supreme Council of Russian Federation Regulation "On Ratification of the Convention on Protection of the Black Sea Against Pollution, dated August 12, 1993, no. 5614-1; over 20 legislative acts, including the Water Code of Russian Federation dated June 3, 2006, no. 74-ФЗ, Federal Law "On Environmental Protection", dated January 10, 2002, no. 7-ФЗ and other, as well as over 10 Parliament of Russian Federation standard and legal acts.

- Georgia – The Law on Ratification of Bucharest Convention, dated September 1, 1993; Georgian law on environmental protection.

Figure 4. Anatolia Watershed Rehabilitation Project

Republic of Turkey is implementing
the Anatolia Watershed Rehabilitation Project

The aim of the Project supported by the Word Bank and GEF is:

- ✓ providing a stabilized natural resources management;
- ✓ increasing the income of the people living in the Anatolia and Black Sea Regions;
- ✓ decreasing the pollution originated by agricultural activities and transported by means of Kızılırmak and Yeşilırmak rivers.

Duration of the Project which has gone into action in 2005 is 7 years.

The components of the Project are:

1. Animal waste management system;
2. Pollution coming from agricultural industries;
3. Monitoring of the water and soil quality;
4. Public awareness;
5. Identification of the legal framework of organic agriculture;
6. Preparation of the good agricultural practices guideline;
7. Improvement of the institutional and political structures necessary for adaptation of the European Union.

Objectives of the Project are:

1. Identification of the effects of the agricultural pollutants on water and soil resources with using N and P analysis;
2. Getting under control the nutrients transported to Black Sea through Kızılırmak and Yeşilırmak Rivers and getting the nutrient concentration level to comply with the standards determined in the legislations;
3. Ensuring international quality standards in parameters and measurement methods;
4. Making inventory works to identify agricultural industries and pollutants originated from these in the Project site;
5. Making an action plan to prevent the pollutants coming from agricultural practices;
6. Implementation of the Regulations of "Protection of the Water Resources Against Nitrate Pollution Coming From Agricultural Activities" (18.02.2004/The Official Gazette No:25377).

In addition, national plans (strategies) of realization of measures on protection of the Black Sea against pollution were developed and implemented in several states, e.g.:

- Republic of Turkey – The fulfilment of the regulations of the Law About the Emergency Interference and Indemnification In Case Of The Pollution Of Sea Environment By Petroleum and Other Harmful Substances.

Republic of Turkey has put into effect several important documents on the issue of environmental protection such as EU Integrated Environmental Approximation Strategy (2007-2023), National Action Plan on Land Based Pollution in Black Sea Region, The National Action Plan on Wastewater Treatment Management (2008-2012), National Action Plan on Waste Management (2008-2012).

- Republic of Bulgaria – National strategy of environmental protection and action plan on 2000 – 2006. National strategy of water sector management and development till 2015, adopted by the Councils of ministers, Water resources management plan (Black Sea region).

- Romania – Government Emergency Ordinance no. 71/2010 on establishing the strategy on marine environment, Government Emergency Ordinance approved by Law no. 280/2003 concerning Integrated Coastal Zone Management.

- Ukraine – State program of water industry development, adopted by the Law of Ukraine, dated January 17, 2002, no. 2988-III, State program of the Black Sea and the Sea of Azov environment protection and reproduction, adopted by the Law of Ukraine, dated March 22, 2001, no. 2333-III.

- Russian Federation – State Strategy of environmental protection and sustainable development provision, adopted by the President of Russian Federation Decree, dated February 4, 1994, no. 236, Federal Target Program "The Great Ocean", adopted by the Parliament of Russian Federation Regulation dated August 10, 1998, no. 191, Program for Olympic Objects Construction and Development of the City of Sochi as a Mountain Climatic Resort, adopted by the Parliament of Russian Federation Regulation, dated December 29, 2007, no. 991.

National audits have testified that the main institution responsible for national strategies implementation by government is the supreme government executive authority in the area of environmental protection:

- Republic of Turkey – Ministry of Environment and Forestry;
- Republic of Bulgaria – Ministry of Environment and Water;
- Romania – Ministry of Environment and Forests;
- Ukraine – Ministry for Ecology and Natural Resources;
- Russian Federation – Ministry of Natural Resources and ecology;
- Georgia – Ministry of Environmental Protection and Natural Resources.

In addition, with the purpose of state policy implementation the ministries of the following fields were drawn in: agriculture and rural affairs (Republic of Turkey, Russian Federation, Ukraine); maritime affairs (Republic of Turkey); public health, transportation and infrastructure, home affairs (Romania, Ukraine, Russian Federation); foreign affairs (Russian Federation).

In addition, the issues of the Black Sea protection are dealt with by specially established public scientific institutions: National Institute for Marine Research and Development "*Grigore Antipa*" Constan a (National Research and Development Institute for Environmental Protection – INCDPM) (Romania); Institute of oceanography named after P.P. Shirshov, All-Russian scientific institute of hydro-meteorological information, State oceanographic institute named after N.N. Zbruyev, Institue of global climate and ecology, All-Russian scientific institute of fish industry and oceonography (Russian Federation); Institute of Biology of Southern Seas named after O.O. Kovalevsky, Marine Hydro-physics Institute, Southern Scientific

Institute of Marine Fish Industry and Oceanography, scientific institution of the Ministry for Ecology and Natural Resources (Ukraine).

As the national audits have testified, the funds for implementation of activities on protection of the Black Sea against pollution during 2007 – 2009 were allocated basically from two sources: state and local budgets.

It is worth mentioning that there is no fund specifically allocated for the purpose of pollution prevention from land-based sources on the Black Sea coast in Republic of Turkey. Relevant agencies use funds to perform their missions on protection of the Black Sea against pollution but it is not possible to calculate an exact volume of funds.

In Georgia, funds for pollution prevention from land-based sources on the Black Sea coast were not allocated.

In Romania and Republic of Bulgaria a significant financing source of the mentioned activities consisted of pre-accession funds (ISPA, PHARE, SAPARD) and EU funds after these countries have obtained EU membership. As a result during 2007 – 2009 investments in Romanian coastal area from EU funds, such as pre-accession funds (ISPA, SAPARD) and *post-accession funds (*Structural Funds, Cohesion Fund), as well as loans from international financial institutions for instance EBRD, WB topped 738.5 M USD, which is 15.7 times more than the volume of funds, allocated from all other sources. The volume of EU funds, invested during 2007 in Republic of Bulgaria, was close to 3% of the whole volume of funds, allocated for implementing the activities on protection of the Black Sea against pollution in this country.

Figure 5. Volumes of funds allocated for the purpose of pollution prevention from land-based sources on the Black Sea coast in 2007 (M USD)

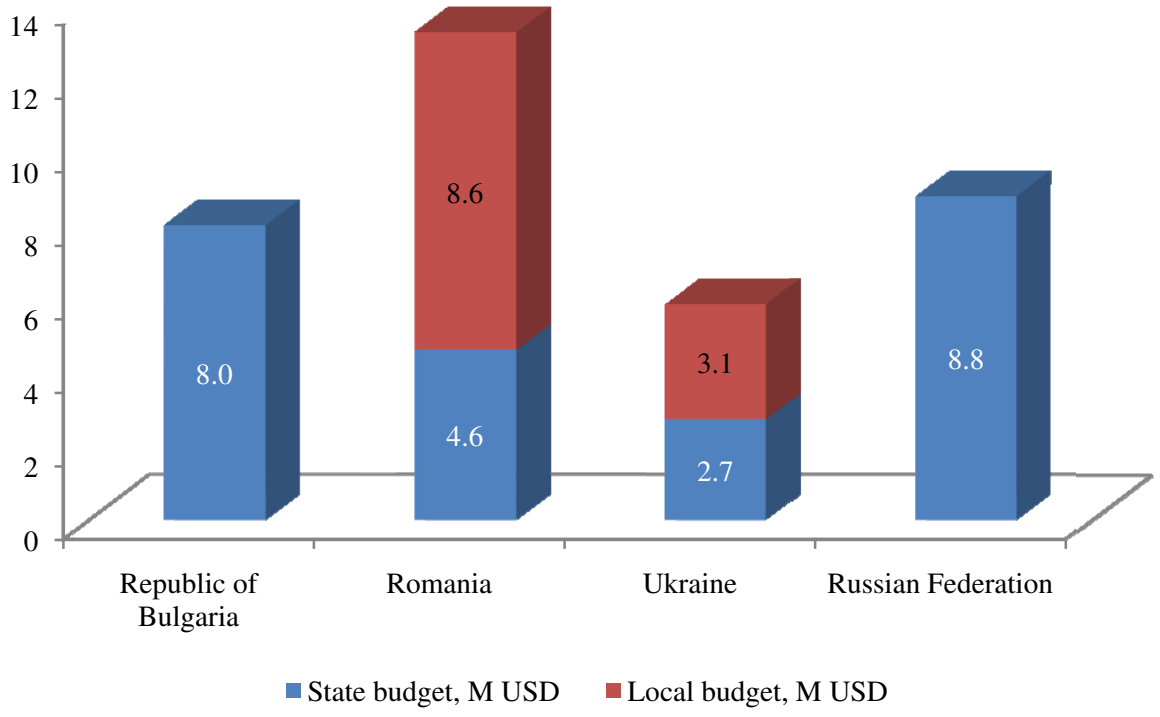


Figure 6. Volumes of funds allocated for the purpose of pollution prevention from land-based sources on the Black Sea coast in 2008 (M USD)

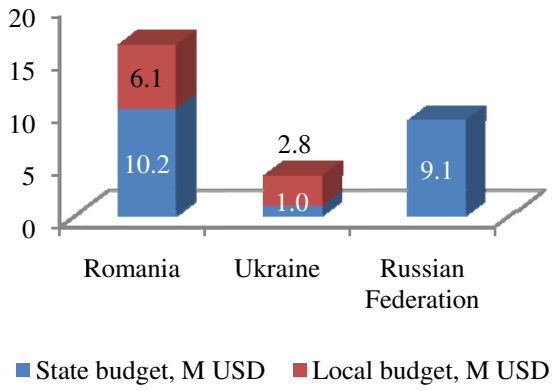
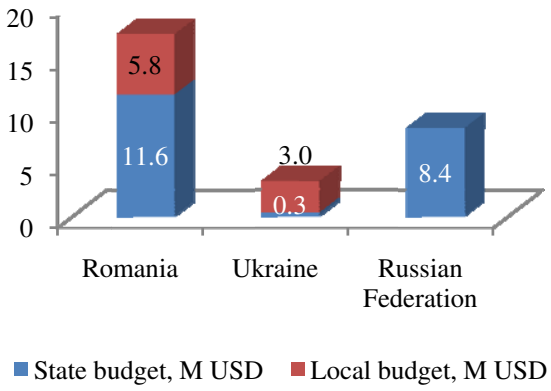


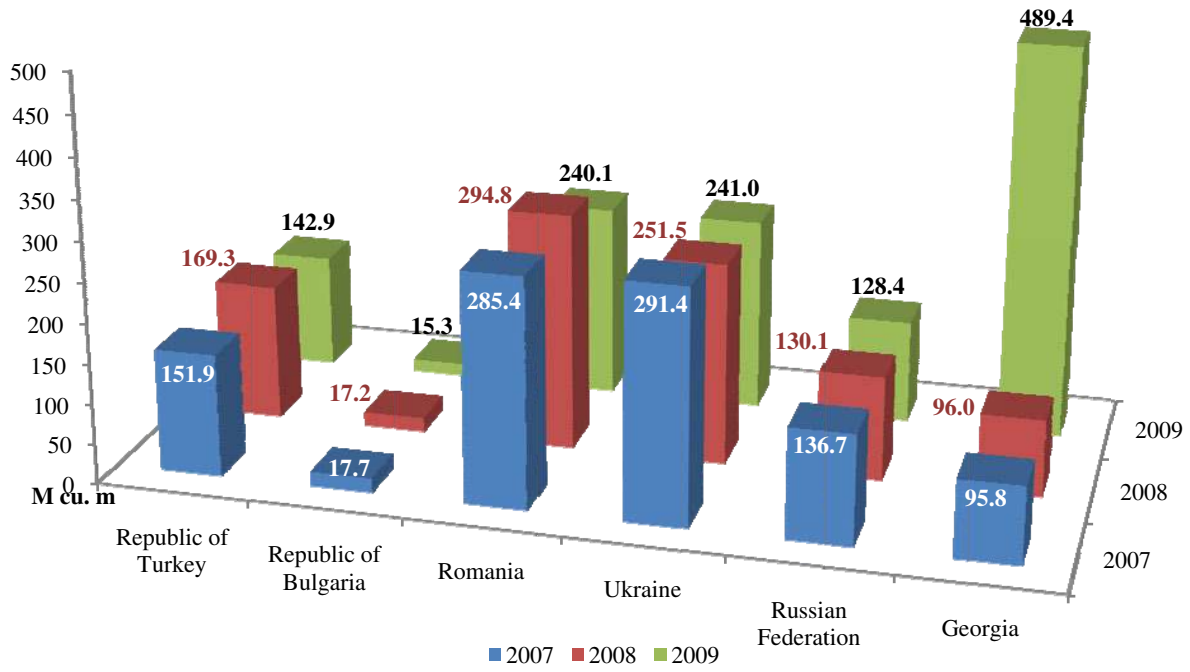
Figure 7. Volumes of funds allocated for the purpose of pollution prevention from land-based sources on the Black Sea coast in 2009 (M USD)



3.2. The Black Sea current pollution state and evolution

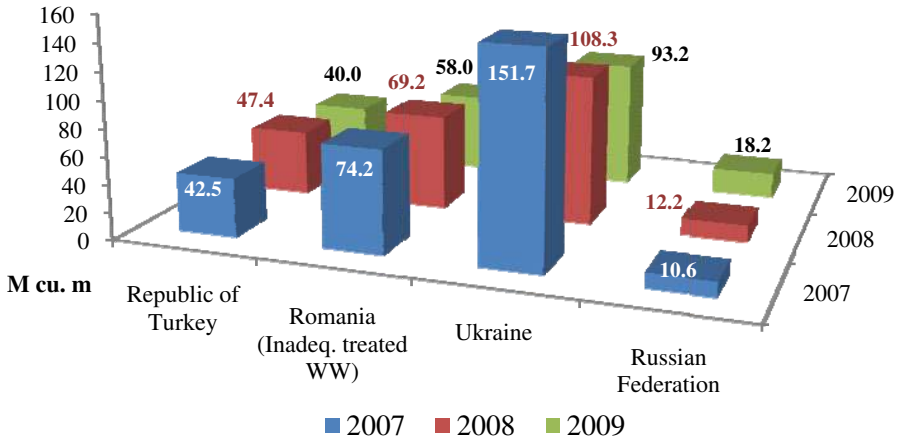
The analysis of the data, acquired while conducting the audit, regarding the issues of the Black Sea pollution from land-based sources has shown gradual decrease in volumes of waste water discharges into the Black Sea almost in all Black Sea coast countries.

Figure 8. Total volume of waste water discharges into the Black Sea (M cu. m)



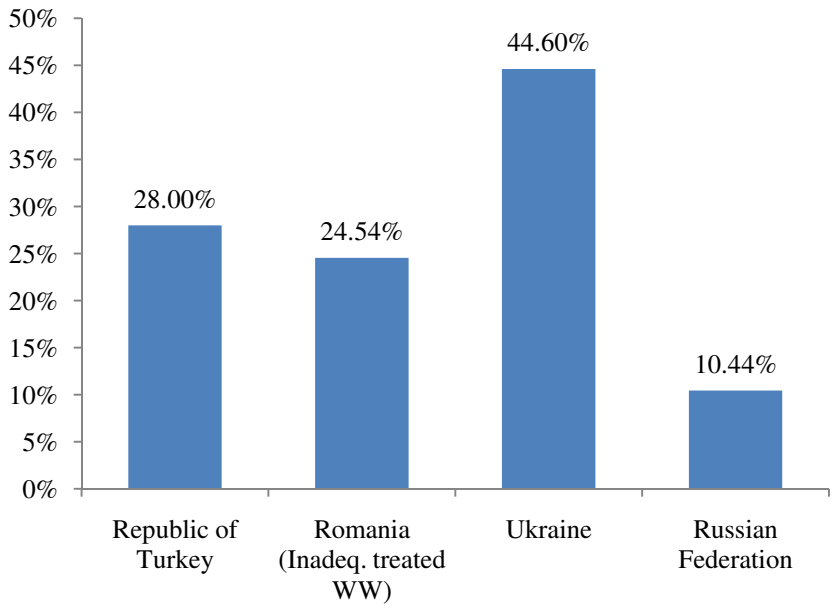
In addition the volumes of discharges of polluted/inadequately treated waters into the Black Sea are decreasing.

Figure 9. Volumes of discharges of polluted/inadequately treated waste waters into the Black Sea (M cu. m)



However, the percentage (%) of polluted/inadequately treated waste water discharges in total discharges into the Black Sea stays significant, that testifies the necessity of implementation of additional measures for discharged water treatment in all Black Sea region countries.

Figure 10. Percentage (%) of polluted/inadequately treated waste water discharges in total discharges into the Black Sea



As a result, change of the main indicators of the Black Sea waters chemical composition is insignificant.

Table 2.1 Main indicators of the Black Sea waters chemical composition

Indicators / States	Suspended matters	Dissolved oxygen	Sulphates	Chlorides	BOD 5 (5-day biochemical oxygen demand)
	Positive change: ↓	Positive change: ↑	Positive change: ↓	Positive change: ↓	Positive change: ↓
Republic of Turkey	↓	→	No data	No data	↓
Republic of Bulgaria	↑	No data	No data	No data	↑
Romania	→	↑	↓	↓	→
Ukraine	↓	↓	↑	→	↓
Russian Federation	↓	↓	→	→	→
Georgia	↓	No data	→	↓	↓

Table 2.2 Main indicators of the Black Sea waters chemical composition

Indicators / States	Ammonium	Nitrites	Nitrates	Phosphates
	Positive change: ↓	Positive change: ↓	Positive change: ↓	Positive change: ↓
Republic of Turkey	↓	↑	↓	↑
Republic of Bulgaria	↓	No data	No data	↑
Romania	↑	↓	↓	↓
Ukraine	↓	↑	→	↓
Russian Federation	↓	↓	↓	→
Georgia	No data	No data	No data	No data

Thereby, the Black Sea countries have generally implemented the regulations of the Bucharest Convention in their national legislation, assigned authorities, responsible for implementation of corresponding measurements, and also the sources of their financing.

In addition, the significant changes of the marine ecosystem quality and the level of pollution were not reached, that may testify the necessity of complex international measures development and implementation.

Figure 11. Agricultural Pollution Control Project

Romania has implemented the Agricultural Pollution Control Project in the period April 2002 - June 2007 in a pilot area of Călăra i county.

The 10.8 million dollars project was co-financed by the World Bank, with funds from the Global Environment Facility (GEF - $ 5 150 000) and from the Government of Romania ($ 5 650 000).

The overall objective of the project was to reduce the long term nutrient discharge (especially nitrogen and phosphorus) and other agricultural pollutants into the Danube River and the Black Sea, through integrated soil and water management and promoting the ecologically sustainable use of natural resources in two agricultural polders.

The global environmental objective is to reduce over long-term nutrient enrichment in the waters flowing into the Danube River and Black Sea, through integrated soil and water monitoring.

The project, to be implemented over five years, includes the following four components:

Component 1: Investments at the commune level focusing on about 86 Nitrate Vulnerable Zones (NVZ);

Component 2: Support for institutional strengthening and capacity building ;

Component 3: Public Awareness and investment replication Strategy;

Component 4: Project Management.

As a result of the interventions done, nutrient discharge (nitrogen and phosphorus) into the Danube, from the implementation area of the Project, has decreased by about 10 %, since 2006, when the livestock manure collecting and management systems became operational in the 7 communes included in the project. The situation continues in the present.

Given the success of the project, acknowledged and given example by the GEF and the World Bank, starting with 2008, it has been replicated at the national level, in 86 localities vulnerable or potentially vulnerable to nitrate pollution through the Integrated Nutrient Pollution Control project financed through a 50 million Euro World Bank loan and a $ 5.5 million non-reimbursable financial assistance from GEF funds.

Current situation

Until 31 December 2009, project disbursements have been made in the amount of U.S. $ 902 933.20 from the GEF grant and EUR 908 112.39 from the World Bank loan. Also, at the reporting date (June 2010), two applications were in process, from the GEF grant, totaling about 640 000 USD. On June 30, 2010, withdrawals from the GEF grant were of 1 194 788 Euro and 1 624 992 Euro from the World Bank loan.

The investments for the livestock manure collecting and management systems in 11 communes, which have been designated as Demonstration and Training Centre, will be completed in 2010, and will become operational in 2011. The effect of these investments, combined with behavioral changes induced by demonstrations and information campaigns organized within the project is estimated to an annual reduction of the amount of nutrients discharged into surface and ground waters, and finally into the Danube River and Black Sea, of about 130 tons nitrogen and about 110 tons phosphorous. Gradually, as the project interventions will be completed in the remaining 75 localities - Nitrate Vulnerable Zones, the nutrients discharges will be reduced.

Quantitative estimates will be possible starting with 2012, based on the monitoring measurements to be carried out.

3.3. Monitoring and supervision

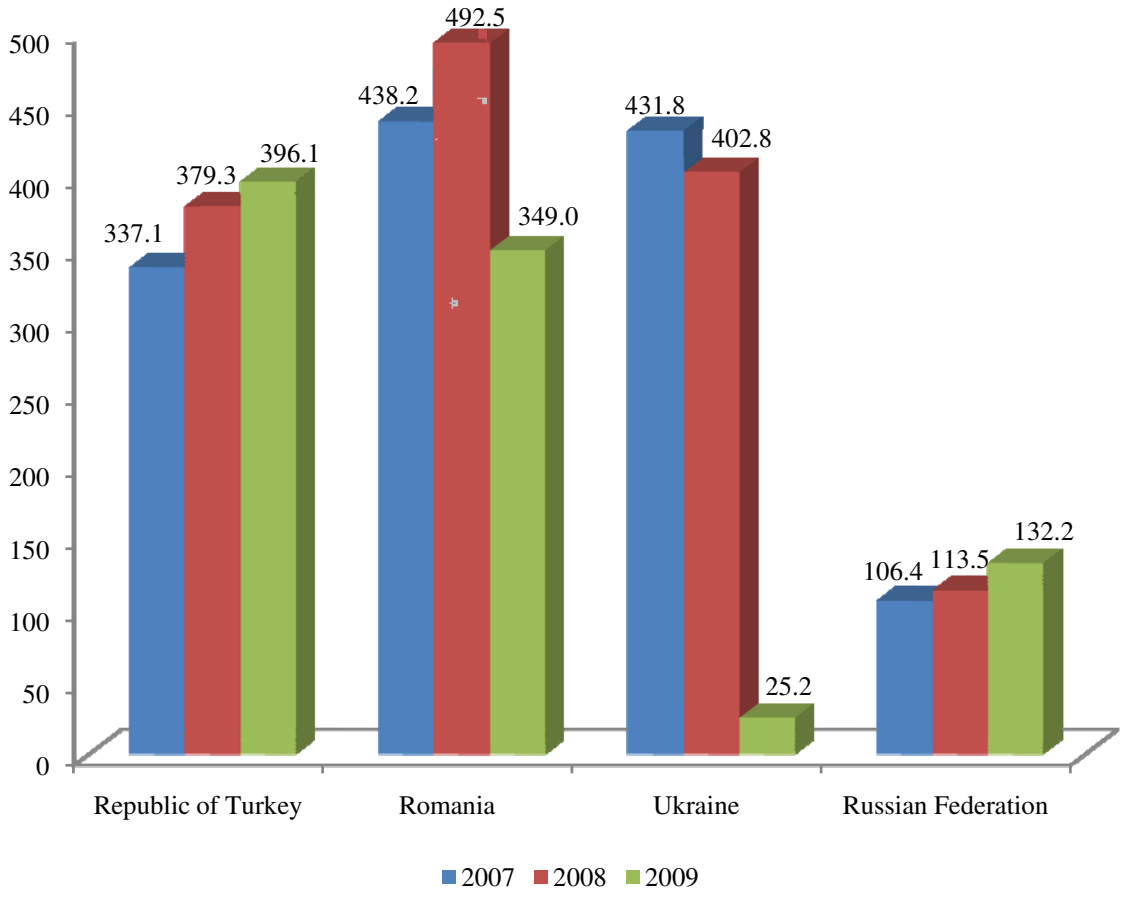
The Bucharest Convention stipulates, that the Contracting Parties shall, inter alia, establish complementary or joint monitoring programs covering all sources of pollution and shall establish a pollution monitoring system for the Black Sea including, as appropriate, programs as bilateral or multilateral level for observing, measuring, evaluating and analyzing the risks or effects of pollution of the marine environment of the Black Sea.

Each Contracting Party shall designate the competent national authority responsible for scientific activities and monitoring.

National audits have testified, that all Black Sea region countries carry out the Black sea water quality monitoring in their territorial waters.

As the parallel audit has shown, the funds allocated for the functioning of the Black Sea water monitoring systems in coast countries during 2007 – 2009 (without data for Republic of Bulgaria and Georgia) totaled 3.6 M USD, about 1.3 M USD annually, except 2009, due to the global economic crisis and public funds saving during this period.

Figure 12. Volumes of the funds actually utilized for the development of the national monitoring system for the Black Sea waters (USD ths)



In Republic of Turkey the water quality monitoring activities have been carried out both at hot spots and in the sea as well as in the river basins.

Hot spot and deep sea monitoring activities in the Black Sea are mainly performed by the Ministry of Environment and Forestry through close collaboration with the Institutes of Marine Sciences of various universities. The Black Sea Pollution Monitoring Project which is conducted by Istanbul University Institute of Marine Sciences and Management is one of the most comprehensive monitoring activities carried out in Turkey.

Water quality monitoring activities in the river basins carried out within the scope of several projects such as Anatolia Watershed Rehabilitation Project and implementation projects of the Nitrate Directive are important by means of exploring the effects of agricultural and nitrate pollution. It is aimed with these projects that monitoring activities will be put in a standardized manner through providing technical and fiscal assistance in the short-term period and institutional capacity of the relevant agencies will be developed in order to achieve an advanced monitoring network system in the mid-term period.

There are also monitoring activities executed by the provincial directorates of the Ministry of Environment and Forestry in order to control the provision of the anticipated quality standards of discharged waste water to the rivers or directly to the Sea. The legal basis for this kind of monitoring activity stems from "Regulation for Water Pollution Control" and "Regulation on the Urban Waste Water Treatment".

inistry of Health is the other complementary authority that is responsible of the quality of the bathing water and therefore public health. The Ministry along with the municipalities performs this mission depending on the "Regulation of Bathing Water Quality".

The implementation of the objectives of the Bucharest Convention in Republic of Bulgaria is regulated by the Environmental Protection Act (EPA), Water Act (WA) and the secondary legislation issued on the grounds of these acts.

The Environmental Protection Act is a basic law that regulates the ecological control over the economic activity. It introduces the main objectives of the legislation, regulating the protection and utilization of the environmental components – water and water objects, soil, air, depths of the earth and biological diversity.

The Water Act regulates the rights and obligations of the state, municipalities, private and legal entities in the protection and use of waters. The Act regulates the water management using the basin principle, the terms of water and water basins utilization, the requirements for water protection against pollution, licenses, monitoring, penalties and compulsory administrative measures upon violations.

The secondary legislation regulates mainly the indicators and norms to which the quality of the coastal sea waters should correspond, the emission norms for admissible degree of some harmful and dangerous substances in wastewaters discharged into water objects. It also regulates the procedure for issuing licenses for discharging waste water from pollution sources into surface water objects, the procedure for setting up water monitoring network and the activity of the National Water Monitoring System on the territory of Republic of Bulgaria.

Main entities are:
- Executive Environmental Agency
- Basin Directorate for water management in Black Sea Region.

In Romania, the following documents regulate the development and management of the Black Sea waters national monitoring system:
- Water law no. 107/1996, with further modifications and amendments – that transposes the EU Water Framework Directive 2000/60/EC;
- Law on environmental protection no. 137/1995, repealed and replaced by Government Emergency Ordinance no. 195/2005, with further modifications and amendments;
- Government Decision no. 686/1999 on the establishment of National Institute for Marine Research and Development *"Grigore Antipa"* Constanța, with further modifications and amendments;
- Government Decision no. 546/2008 on the management of the bathing water quality – that transposes the Directive 2006/7/CE concerning the management of bathing water quality;
- Government Emergency Ordinance no. 71/2010 on establishing the strategy on marine environment.

The ecological status of the Romanian Black Sea transitional, coastal and marine waters is assessed on the basis of the physical, chemical, biological and hydromorphological indicators recommended by the Water Framework Directive and Marine Strategy Framework Directive.

Organizational system of the Black Sea water monitoring in Romania includes:
- National Institute for Marine Research and Development *"Grigore Antipa"* Constanța – responsible for monitoring of physico-chemical parameters, contaminants and biological indicators in transitional, coastal and marine waters (44 monitoring stations / water, sediments and biota), according to Water Framework Directive (2000/60/EC), Marine Strategy Framework Directive (2008/56/EC) and Shellfish Waters Directive requirements;
- River Basin Administration – Dobrogea littoral – responsibilities for monitoring of the water quality for coastal and transitional waters in order to comply with the provisions of the Water Framework Directive 2000/60/EC;
- Constanța Environmental Protection Agency – participation in the activities concerning the water state assessment on the level of Constanța county, through monitoring of the environmental factors quality, including marine environment;
- Constanța County Public Health Department – responsibility for monitoring of the bathing water quality from micro-biological point of view, within the coastal zone.

The main regulatory legal act that determines the necessity for conducting state water quality monitoring in Ukraine is the Water Code, adopted by the Law of Ukraine dated June 6, 1995, no. 213/95-BP. According to the Water Code the state water quality monitoring is conducted with the purpose of collecting, processing, saving and analyzing of data regarding water condition, prediction of its change and development science-based recommendations for management in the sphere of water utilization and protection and rehabilitation of water resources. State water monitoring is a part of the state environmental monitoring system in Ukraine and is being conducted according to the procedure, assigned by the Government of Ukraine.

The state water monitoring conducting procedure has been adopted by the resolution of the Government of Ukraine dated July 20, 1996, no. 815, and it determines the cooperation between the state water monitoring entities, development of the monitoring system, as well as methodological, metrological, material, technical and financial provisions of its conduction.

In addition, the state task environmental program for environmental monitoring conduction has been adopted by the resolution of the Government of Ukraine dated December 5, 2007, no. 1376.

According to this document the main authority in the water monitoring system is the Ministry for Ecology and Natural Resources of Ukraine, which implements its

duties through the specially established institutions (State ecological inspections) and via state authorities under its subordination (Water industry committee, Centre of marine ecology).

In addition, the institutions, subordinated to the Ministry of Public Health and the State Meteorological Service are included in the water monitoring system.

The Ministry for Ecology and Natural Resources of Ukraine has identified the active centre for monitoring and pollution from land-based sources assessment in 2002 – the Ukrainian scientific center of marine ecology, which is situated in Odessa.

The Ukrainian scientific center of marine ecology has developed the Black Sea and the Sea of Azov state environmental monitoring program. This program has been developed as a section of the State environmental monitoring program of Ukraine.

The objective of the program is to secure legal, organizational, methodological and procedural principles of the state marine environment monitoring system functioning, the purpose of which is to establish the information base for environmental state management and efficient use of the Black Sea and the Sea of Azov natural resources within the territorial waters and the exclusive marine economic zone of Ukraine.

The establishment of the monitoring stations network was stipulated under the mentioned program from 2005 till 2009 with the total state budget funding of 2 M USD. The monitoring program had an aim of establishing the observation system on 287 existing and newly created monitoring stations, out which: 206 in the Black Sea and 81 in the Sea of Azov.

However, due to the absence of necessary funding the monitoring stations network is represented only by 16 stations, which stay under direct influence from the coast sources of pollution, as well as in port water areas and do not cover the whole range of necessary indicators (5 stations – State ecological inspection for the Northwestern part of the Black Sea environmental protection, 3 stations – State Black Sea and the Sea of Azov ecological inspection, 8 stations – Centre of marine ecology). This situation has been changed in 2009 by putting into operation the research vessel “Academician Parshyn”, which conducts monitoring researches.

The data from the monitoring stations is directed to the Centre of marine ecology yearly. The received information is included in the Black Sea and the Sea of Azov pollution state indicators data base – “SeaBase” – as the components of the integrated geographic information system, established within TACIS Black Sea environmental projects.

Russian Federation performs the functions of state policy making regarding legal regulation in the area of research, utilization, reproduction and protection of natural resources, including water bodies, their pollution, and also environmental monitoring.

Provision of environmental safety and protection of the Black Sea against pollution are performed by local authorities of the Krasnodar Territory and the establishments of federal services and agencies, which are a part of the Ministry of Environment of Russian Federation system.

In Russian Federation the Black Sea environment monitoring is conducted by organization departments of the Federal Hydrometeorology and Environmental Monitoring Service and its scientific institutions with participation of other federal and constituent territory executive authorities, as well as owners of water objects and water users, in accordance with the Regulation on conducting state monitoring of water objects, adopted by the Government of Russian Federation Regulation, dated April 10, 2007, no. 219.

The Black Sea marine coastal monitoring network under Federal Hydrometeorology and Environmental Monitoring Service includes 6 monitoring spots. The Black Sea marine environment state monitoring is conducted by contact (from vessels) and non-contact methods (satellite monitoring, remote methods of water surface condition control, etc.). Monitoring over hydro-chemical characteristics and the Black Sea coastal waters pollution is conducted by complex environmental pollution monitoring laboratories. Scientific and technological support for monitoring allows conducting adequate content analysis of pollutants in water environment (oil carbohydrate, surfactants, heavy metals, pesticides).

With the purpose of optimizing the Black Sea water environment monitoring program and widening the number of processes and parameters under control, Federal Hydrometeorology and Environmental Monitoring Service has worked out the Draft Complex Black Sea Monitoring Program, which includes description of parameters, frequency and location of the monitoring spots.

The usage of monitoring data after processing includes four levels of information directing:
- informational support of federal (including Federal Nature Management Supervision Service and Federal Water Resources Agency) and regional government authorities (prompt data on emergency and extremely high water environment pollution);
- informational support of population (submitting analytical materials in internet, materials for mass media, etc.);
- informational support of business entities;
informational support of international commitments if Russian Federation.

With regard to holding the XXII Winter Olympics and the XI Winter Paralympics in the City of Sochi in 2014, the Program for Monitoring of Water Objects, located in the Olympic Objects Construction Area in Sochi has been approved, and it will ensure comprehensive approach and coordination of activities of state authorities in the sphere of provision of ecological safety in the Black Sea.

The monitoring in Georgia is supported by the law, "About Environment Protection", granting the Ministry of Environment Protection with the overall supervision and maintenance of the monitoring system. Other important acts are law „About water" , „About Environment Impact Permits" , „About Biodiversity " and other legal acts such as order of the Minister of Health and Social security No 297/N setting the qualitative norms for the surface waters.

The monitoring function is further delegated to provincialities and local governments. Monitoring on rivers is carried out by the Directorate of Environment Protection and samples are taken bimonthly on BS basin rivers at 21 points, analyzed and published monthly on a web site. The Black Sea Monitoring Centre in Batumi studies the state of sea biodiversity. The quality of Black Sea waters is monitored by the Adjarian Directorate of Environment and other local governments .

Within the Black Sea Integrated Monitoring Programme the samples are taken at 5 locations in 1 mile from the shoreline. Monitoring results are provided to the BSC annually.

3.4. Data access

The audit has testified that appropriate conditions for population, public establishments and interested parties to access environmental information, as well as information regarding the Black Sea ecosystem conditions, were provided in each and every country of the Black Sea region.

In Turkey Republic, the website of the Ministry of Environment and Forestry (www.cevreorman.gov.tr) provides information about all the related environmental issues, including the water quality data for the Black Sea Environmental Status Reports prepared by each provincial directorate of the Ministry (81 reports annually) and the General Environmental Status Report of Turkey prepared by the Ministry are also accessible on this website.

The Ministry of Agriculture and Rural Affairs contributes to environmental database by providing data for many topics, especially for agricultural pollution. The data derived from implementation of different projects such as "Anatolian Watershed Rehabilitation Project" and "Twinning Project on Capacity Strengthening and Support of Implementation of Nitrate Directive in Turkey" is published on the website of the Ministry.

In addition to the contributions of the related Ministries, Turkish Statistical Institute also publish data of various environmental indicators for the Black Sea region on its website annually.

The Ministry of Environment and Forestry has been developing a land monitoring system called "Coordination of Information on the Environment (CORINE)" since 1998. This system is composed of six topics "Land Use, Spatial Planning, Biological Diversity, Water, Soil and Forest" of whose data can be accessed on the website http://aris.cob.gov.tr. A comprehensive database about national biological diversity (www.nuhungemisi.gov.tr) has also been active since 2007. As an additional point, the results of bathing water quality analysis are published on the websites of the provincial directorates of the Ministry of Health in the summer seasons periodically. Also, "Law on Right of Information Acquirement" gives the individuals to exercise their right of information acquirement.

In Republic of Bulgaria, the web page of the Ministry of Environment Water has the option "public dialogue", which makes it possible for everyone interested to pose questions and submit proposals on environmental issues, to participate in public discussions on draft legislation, etc.

The web page also contains the national Catalogue of the sources of information regarding the environment. The Catalogue provides data about the type, storage location and means of access to environmental information.

Information centers were created in the Executive Environmental Agency, the Regional Inspectorate of Environment and Waters, and the Basin Directorates.

Basin Directorate – Varna has been preparing weekly, quarterly and annual bulletins regarding the condition of water resources under its jurisdiction. Those bulletins can be seen on the web page and the annual bulletin is printed in a separate booklet. Many initiatives were organized in order to enhance environmental awareness among young people and involve the public in problems such as preservation and improvement of water quality. Among the initiatives there were organized: round tables, open doors days, public inquiries on environmental issues, lectures, exhibitions, best photo contests regarding the World Water Day (22nd March), World Environment Day (5th June), International Black Sea Day (31st October).

In Romania public information and consultation process is an EU member state obligation, according to Article 14 of the Water Framework Directive, transposed into national legislation.

The main annual environmental documentation regarding the Black Sea marine environment is the „Report on the state of marine and coastal environment" (chapter of the National "Report on the state of environmental factors in Romania", prepared by and posted on the National Environmental Protection Agency website: http://www.anpm.ro), prepared by the National Institute for Marine Research and Development "Grigore Antipa" Constanța (NIMRD). The document is made available to central and local authorities and is posted on the NIMRD website: www.rmri.ro.

One of the management goals of the Romanian National Plan for Integrated Coastal Zone Management, as stipulated in the Bucharest Convention, is providing free public access along the coastline.

For the implementation of other important management objectives stipulated in the Romanian National Plan for Integrated Coastal Zone Management, namely on:
- ecological information and education
- public participation in decision-making
- ensuring information flow on the coastal environment,

the following institutions are responsible:
Ministry of Environment and Forests (MEF):
- National Institute for Marine Research and Development "Grigore Antipa" Constanța,
- Constanța Environmental Protection Agency,
- National Administration "Apele Române"
- River Basin Administration - Dobrogea Littoral,

Ministry of Education, Research, Youth and Sports (MECTS),
Ministry of Transport and Infrastructure (MTI),
Non-Governmental Organizations.

With regard to ICZM database, it is posted on the websites of Ministry of Environment and Forests (www.mmediu.ro) and NIMRD.

Also, on the website of the Ministry of Environment and Forests, respectively the Water Management Section, there is the Ocean Forecast Subsection, where the public is informed about the dynamics of physico-chemical parameters of the Black Sea ecological system.

In terms of pollution from ships, the Operative Command for Marine Antipollution (CODM), consisting of representatives of the following institutions: MEF, MTI, MAI (Ministry of Administration and Interior), MND (Ministry of National Defense), Constanța County Council, has the responsibility to inform the population about the present state in case of pollution event, causes and actions taken or to be taken and to prepare the report for the media, in order to inform the public.

In terms of bathing water quality, at the level of Constanța County Public Health Department, the information is made available to the public by posting the monitoring results on beach screens, on the institution website (www.dspct.ro) and through the media (conferences and press releases, radio - TV).

It also should be mentioned that Romania signed the Aarchus Convention, which was ratified by Law no. 86/2000 – Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters, with modifications and amendments.

In Ukraine the provision of free access to the environmental information that is not a state secret and is stated under lists, registers, archives and other sources is granted by the Law of Ukraine "On Environmental Protection" dated June 25, 1991, no. 1264-XII.

According to this standard and legal act the ecological informational provision is carried out by the state and local authorities within their privileges by:
- preparing the National Report on Environmental Conditions in Ukraine for consideration in Verkhovna Rada of Ukraine (Parliament) by the specially privileged central executive authority dealing with the ecology and natural resources issues annually, and after its consideration, publishing it as a separate edition and placing it on the web;
- annually informing the corresponding soviets and population of the environmental state of corresponding territories by the Soviet of Ministers of the Autonomous Republic of Crimea, regional public administrations and by Kyiv and Sevastopol municipal public administrations;
- regularly informing the population via mass media of the environment conditions, their evolution, sources of pollution, waste location and other changes of the environmental conditions, as well as the type of ecological factors that have influence on human health.

The main institution, responsible for providing ecological information is the Ministry for Ecology and Natural Resources of Ukraine.

The web-page of this state authority (http://www.menr.gov.ua) is where the ecological news summary is published and the information regarding state task programs in the area of environmental protection, ecological passports of regions, state environmental monitoring, state environmental policy orientation, the biggest environment pollutants, etc. is placed.

In addition, information on emergency situations occurrence in Ukraine is placed daily, monthly and quarterly on the web-page of the Ministry of Emergencies of Ukraine (http://www.mns.gov.ua), and the National Report on the Anthropogenic and Natural Security of Ukraine is published yearly.

In Russian Federation the right to obtain reliable environmental information is ensured by the Federal Law "On Environmental Protection" (Article 3), dated January 10, 2002, no. 7-ФЗ.

On the web pages of federal executive authorities (including the Ministry of nature resources and ecology of Russian Federation (www.mnr.gov.ru), Federal Hydrometeorology and Environmental Monitoring Service (www.meteort.ru), Federal Water Resources Agency (www.voda.mnr.gov.ru) , etc.) the information regarding the implementation process of federal and target programs in the sphere of ecological development of Russian Federation, activities on environmental protection, announcements and scientific environmental reports is published.

The results of water environment condition and pollution monitoring of the Russian part of the Black Sea and the Sea of Azov basin, as well as monthly and final space monitoring bulletins of this area, and also decade overviews and specialized space monitoring maps are published on the web page of government establishment "Scientific center of space hydrometeorology "Planet" (http://planet.rssi.ru).

Information regarding the results of scientific researches in the Black Sea, conducted within federal and target programs, including target scientific program "Scientific Researches and Developments in the sphere of Hydrometeorology and Environmental Monitoring", is put on the web page of federal government establishment "State oceanographic institute named after N.N. Zbruyev" (www.oceanography.ru).

Section IV. Improving International and Regional Collaboration in the Black Sea basin

4.1. Importance of International and Regional Collaboration for the Black Sea environmental protection

As the most isolated sea in the world, the Black Sea is so vulnerable to pressures from human activity such that if it is not properly managed, the effect of pollutants from lots of sources on its environment could be devastating. A comprehensive and realistic risk assessment of the Black Sea pollution is necessary. Due to its large catchment area including not only the pollution from coastal countries but also from many European countries, the regional collaboration for the Black Sea along with the international initiatives is unequivocally very important. In general, there is a need for more co-operation, exchange of information on research and sharing of good practice.

Bucharest Convention with its Protocols and Black Sea Strategic Action Plans impose many tasks and responsibilities to the Contracting Parties on different issues such as land based pollution sources, pollution monitoring, environmental safety of shipping and biological diversity. As it was so long ago emphasized in the Bucharest Convention, the Contracting Parties to the Convention should commit themselves to take individually or jointly all necessary measures consistent with international law and in accordance with the provisions of this Convention to prevent, reduce and control pollution, thereof in order to protect and preserve the Black Sea marine environment (Article 5, paragraph 3).

There are also multilateral and bilateral projects and scientific researches conducted within the scope of the Black Sea Environment Programme by both the Black Sea countries and other involved countries. The Black Sea Commission, established through the Bucharest Convention, has the key role in the assessment of the implementation of those tasks and responsibilities stipulated in the relevant legal documents and the environmental projects and researches mentioned above.

Image 23. The Premises of the Permanent Secretariat
Source: www.blacksea-commission.org

4.2. Enhancing the Efficiency of the Black Sea Commission and Its Activities

BSC, assisted in its activities by a Permanent Secretariat, is composed of *Advisory Groups* (AG), *Regional Activity Centres* of those Advisory Groups located in each Contracting Party and *national focal points*, as it is presented on the Figure 13.

Figure 13. Institutional Structure of the BSC

The Commission for the Protection of the Black Sea Against Pollution Permanent Secretariat						
Advisory Groups						
AC ESAS	**AGPMA**	**AG LBS**	**AGICZM**	**AGCBD**	**AG FOMLR**	**AG IDE**
Environmental Safety Aspects of Shipping (AG ESAS)	Pollution Monitoring and Assessment	Control ofPoUution from Land Based Sources	Development ofthe Common Méthodologies for Integrated Coastal Zone Management	Conservation of Biological Diversity	Environmental Aspects of Fisheries and Other Marine Living Resources AC ESAS Management	Information and Data Exchange
Regional Activity Centers						
Environmental Safely Aspects of Shipping (AC ESAS), Varna. Bulgaria	Pollution Monitoring and Assessment (AC PMA), Odessa, Ukraine	Control of Pollution from Land Based Sources (AC LBS). Istanbul, Turkey	Development of Common Methodologies for Integrated Coastal Zone Management (AG ICZM), Krasnodar, Russian Federation	Conservation of Biological Diversity (AC CBD). Batumi, Georgia	Environmental Aspects of Fisheries and Other Marine Living Resources Management (AG FOMLR), Constanţa, Romania	Information and Data Exchange (AC IDE), Permanent Secretariat, Istanbul, Turkey
National Focal Points						
Bg, Ge, Ro, Ru, Tr, Ua	Ua, Bg, Ge, Ro, Ru, Tr	Tr, Bg, Ge, Ro, Ru, Ua	Ru, Bg, Ge, Ro, Tr, Ua	Ge, Bg, Ro, Ru, Tr, Ua	Ro, Bg, Ge, Ru, Tr, Ua	Bg, Ge, Ro, Ru, Tr, Ua

Advisory Groups of the BSC are the main sources of expertise, information and support in the implementation of the Bucharest Convention and Strategic Action Plan. The data derived from the activities of the Advisory Groups, as well as all the other relevant information are the basis of the Black Sea Information System (BSIS).

BSIS data are comprised from:
- data obtained in framework of the Black Sea Integrated Monitoring and Assessment Programme (BSIMAP),
- data provided in national reports to BSC organized according to the thematic division of the Advisory Groups and
- data obtained in framework of supportive activities/ projects.

Contracting Parties prepare annual national reports via their national focal points on the issues of each Advisory Group and BSC following the receipt of the national reports prepares the regional reports. These regional reports are meant to facilitate the cooperation, exchange of information and best practice, and common strategies among the countries in order to prevent, reduce and control the pollution of the Black Sea marine environment. However, as the regional reports reveal, the data and information provided to the Permanent Secretariat is either not sufficient or not provided at all for comparative analysis. Such kind of gaps and weaknesses in data availability and in data reporting lead to insufficient time-series data, necessary inclusively for trend analysis and represent the main reason which negatively affects the functionality of BSIS.

One of the relevant reports of the Advisory Groups is on the issue of pollution monitoring and assessment. Pollution monitoring and assessment data has been loaded into BSIS since 2001. However, due to insufficient financial support of monitoring, there are gaps in the data flow and in the BSIS database. There are also differences in sampling and sample analysis techniques and countries follow different approaches in the environmental status assessment. This leads to the lack of harmonization and standardization of the monitoring programs among the countries, consequently to the lack of a common database. The reasons and the results of deficiencies in BSIS are exhibited in the Figure 14 below:

Figure 14. Reasons and results of deficiencies in BSIS

- Insufficient financial support
- Lack of harmonization and standardization of the monitoring programs

→

- Gaps in countries' monitoring programs
- Gaps in data flow and in the BSIS database
- Lack of a common database

The lack of a reliable and comprehensive common database not only hinders to determine the main environmental problems, their effects/impact and solutions but also renders the data production and reporting activities less effective in achieving the anticipated targets. These reports with their anticipated valuable contents are deemed important to achieve the aims of the Bucharest Convention. In consequence, the following actions should be considered as the major steps for ensuring the sustainability and efficiency of the national monitoring programs:

- The cooperation of the countries via the BSC should be enhanced by establishing appropriate rules, general standards and best practice and procedures for the prevention, reduction and control of pollution of the Black Sea marine environment.
- Harmonization of national monitoring programs in order to achieve the Bucharest Convention's requirements and standardization of sampling and sample analysis techniques should be achieved.
- Data quality assurance and quality control procedures should be developed by de AG IDE.

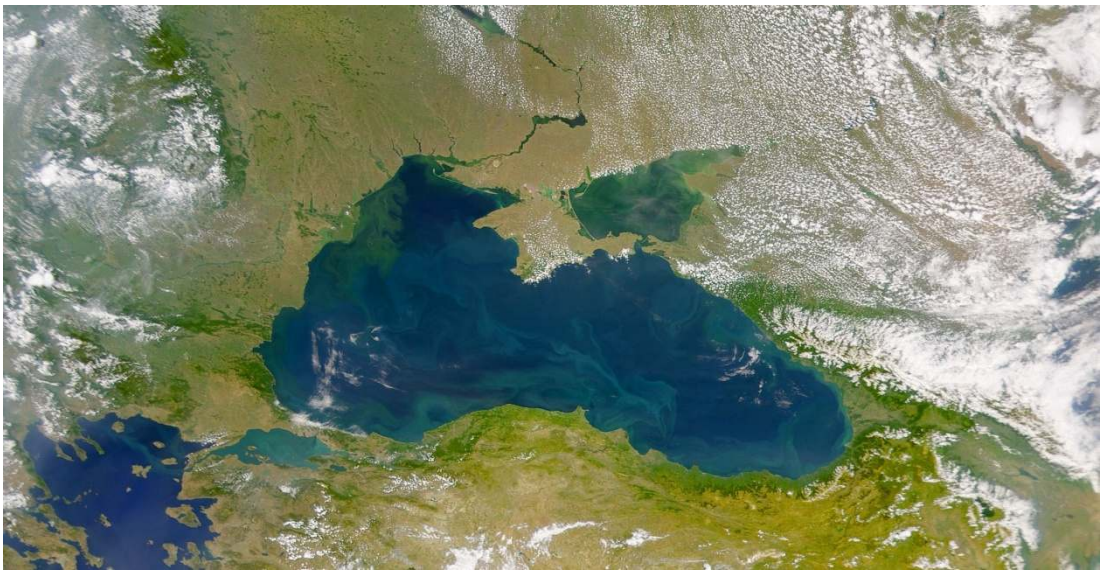


Image 24. Satellite picture of the Black Sea
Source: http://upload.wikimedia.org

4.3. The Need for the International and Regional Initiatives Development for Saving the Black Sea Environment

Good environmental protection depends on thorough coordination of preventive, contingency and combating measures, and requires fast and effective action of the responsible national authorities as well as international cooperation. As the main basis of the international and regional collaboration in order to maintain the protection and sustainable development of the Black Sea environment, the institutional, technical and financial capacity of the BSC should be improved.

Allocation of adequate experts, with expertise in different fields and financial resources for the Permanent Secretariat are the prior issues for the achievement of the environmental targets specific to the Black Sea. This capacity development and achievement of the environmental targets is certainly under the responsibility of not only the Black Sea countries, but also of other related actors and the international community.

Especially the tools to enhance the collaboration with the European Union in the efforts to protect the marine environment against the pollution should be improved. Within the scope of the BSC activities, efficient strategies are needed to be emphasized in order to access the funds of the UN and other international donors.

There are finalized or ongoing projects carried out among some of the Black Sea countries, but it is a fact that the number and scope of the projects that are undertaken by all the coastal countries together remain insufficient. In order to ensure comprehensive and efficient solutions for the Black Sea pollution problems, there should be initiated more collaborative actions among all the Contracting Parties providing common efforts and strategies. In carrying out and obtaining assistance for researches, publications, trainings and communication activities about the Black Sea, a stronger cooperation between the BSC and the relevant countries is a must.

BSC should be more effective in the preparation and assessment of the database, reports, relevant documents and guidelines as well as in the contribution to current projects and undertaking new initiatives. Advisory Group on Information and Data Exchange (AG IDE) has not really started to fulfil its tasks up to now. The active involvement of such an AG within the body of BSC will definitely add much value to data and information exchange. Also data access for all the involved parties – public or private, international organizations, nongovernmental organizations, academicians and public could be facilitated. The results of every implemented action could be made more efficient and applicable through the support and contributions of these relevant actors for the strategies, policies and decisions on the Black Sea.

Image 25. Dolphin in the Black Sea
Source: UNDP

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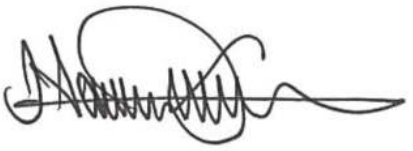

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