

**Implementation  
of the Strategic Action Plan  
for the Rehabilitation and  
Protection of the Black Sea**

**(2002-2007)**

**A report by the**

**Commission on the Protection of  
the BLack Sea Against Pollution**

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2009**



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## 1. Introduction

The Strategic Action Plan (1996) for the Rehabilitation and Protection of the Black Sea (BS SAP) has been one of the fundamental elements of the regional cooperation in the Black Sea which was first settled in 1992 by the Convention on the Protection of the Black Sea Against Pollution. The Plan was based on the findings of the first Transboundary Diagnostic Analysis (TDA) of the Black Sea (1996) and developed with certain principles to include specific policy actions to combat with the identified threats and problems. After an implementation period of the SAP (1996) of more than a decade, it is being revised and an updated SAP (2008) is developed based on the findings of the TDA2007 (<http://www.blacksea-commission.org/main.htm>) and the national (<http://www.blacksea-commission.org/main.htm>) and regional (<http://ps.blacksea-commission.org/kiyvmeeting/gapreport.html>) Gap Analysis reports (2007) of the previous SAP. The latter reports overview the gaps in the SAP1996 implementation on a national and regional levels, giving recommendations for reorganising the priorities and actions therein considering the progress in the Black Sea region and the current state of the environment

The present report is the second periodic assessment of the Implementation of the SAP for the years 2002-2007. It is organized, similar to the first one (2001), as an overview and evaluation of the policy actions and management principles identified in the SAP against the environmental challenges and in annexes (tables and figures) showing the progress made. Only the Articles on the development of "National Black Sea Strategic Action Plans and Financing the SAP" have not been dealt separately to avoid duplications in the text and annexes because all these efforts are well documented under other sections.

Since the gap analysis (including the achievements and the suggestions for improvement) of the SAP and its implementation were previously made (2007) at national and regional scales, these reports were fully made used for the preparation of the present one. Besides, TDA (2007), Black Sea Ecosystem recovery Project (BSERP) Final Report, BSC Database, communications with BSC Permanent Secretariat (PS), BS national/regional experts were also used as major sources of information.

The progress markers selected for policy development, establishment of national frameworks/regulations, programmes/projects run for the BS at different scales, investments made by national and international donors, environmental status and others clearly indicate that there has been a lot of move in the last decade to rehabilitate and protect the Black Sea. In particular, there is a real progress in the development of regional/international cooperation, including joint effort of governmental, non-governmental organizations and private sector in tackling high-priority point sources pollution; contingency planning and emergency response; biological diversity, habitats and landscapes protection, development of Black Sea information system and monitoring program, and sustainable human development. And the ultimate indicator of all our efforts, the state of the Black Sea and its coasts show signs of improvement starting by 1995, however, the challenges faced in the 1990s are still present and urge us to further strengthen the safety aspects of any human activity in the region.





## 2. Challenges

1. *The Black Sea ecosystem continues to be threatened by **inputs of certain pollutants, notably nutrients**. Nutrients enter the Black Sea from land based sources, and in particular through rivers. The Danube river accounts for well over half of the nutrient input to the Black Sea. **Eutrophication** is a phenomenon which occurs over wide areas of the Black Sea and should be of concern to the countries of the Black Sea basin.*

Findings presented in the National Gap Analysis Reports (2007) justify that eutrophication is still a challenge at regional and national levels even though there are substantial improvements in the north western shelf of the Black Sea. According to the comparison of nutrient loads from different sources presented in TDA 2007, the major route of transfer of DIN and P-PO<sub>4</sub> is still the riverine inputs to which Danube continues to contribute more than the other rivers. However, it is difficult to assess in full the contribution of other rivers to the total riverborne nutrient transport since the regime of them have not been everywhere identified properly yet because of lack of systematic monitoring with statistically significant frequency of observations. The second major pathway of DIN load is the atmospheric deposition that said to contribute at a level of 28-45%. Though there is not enough monitoring data to validate the atmospheric deposition models, these figures clearly show the importance of the atmospheric DIN deposition that also counts for the importance of atmospheric emissions. Direct discharges from large waste water treatment plants counts around 8% of the P-PO<sub>4</sub> loads where the contribution of Istanbul Strait makes 21%.

The economic growth of the region as well as the population increase in the urban and rural coastal areas will obviously continue to be a pressure which will eventually be the direct causes of eutrophication if the necessary measures are not planned and applied.

2. *Inputs of insufficiently treated sewage result in the presence of microbiological contaminants, which constitute a threat to public health and in some cases pose a barrier to the development of sustainable tourism and aquaculture.*

Even though a lot of measures have been taken for the untreated sewage, it is still a problem for some parts of the coastal BS. Especially, most of the rural coastal population is still not connected to a sewer system. The number of waste water treatment plants or the level of treatment at the available plants are still not enough to combat with sewage discharges even in the urban areas. Additionally, treatment of storm waters and prevention of littering of the coastal areas could be treated similarly. Bacteriological pollution and littering due to these sources is a possible barrier for the development of sustainable tourism and aquaculture in the region.

3. *In addition, **inputs of other harmful substances, and especially oil, continue to threaten the Black Sea ecosystem**. Oil enters the environment as a result of accidental and operational discharges from vessels, as well as through land based sources. Almost half of the inputs of oil from land based activities are brought to the Black Sea via the Danube river.*

Relatively high contamination levels of some pesticides, heavy metals and PCBs are present at specific sites in the Black Sea, with illegal dumping/discharges (particularly of agrochemicals) being recognised as a particular problem (TDA, 2007). The historically poor enforcement of discharge standards and a failure to consider the Sea itself as a receiving waterbody for discharges to rivers have been considered to be the principal reasons underlying the pollution status of the Sea. During the last years the standards have been revised in some of the Black Sea states and enforcement strengthened.

Besides well known sources of pollution, progressive interest to exploration and exploitation of the Black Sea shelf deposits of oil and gas pose a new threat and increased risk of pollution to the Black Sea ecosystem. Additionally, the high volume of oil being transported across the Black Sea has also increased the risk of oil pollution. Intensive shipping and oil platforms (sea-based oil pollution) is seemingly more important than the land-based oil activities in the region. However, the comprehensive assessment of oil pollution sources contribution for the 1990s (based on *in situ* data, Black Sea Pollution Assessment, eds. L. Mee and G. Topping, UN Publications, New York, 1999) showed the rivers and other land based sources as the main contributors to oil pollution in the Black Sea, compared to rather

## 2. Challenges

low values of accidental spillages from ships. Since 2001 the situation has not been changed and the accidental oil pollution is even at a lower level than in the 1990s.

Eventhough the illegal oil discharges have not been properly assessed yet, it has been initiated under the umbrella of the BSC through inviting JRC to cooperation and concluding with an MOU. The EC Joint Research Centre (Tarchi *et al.*, 2006) undertook an assessment of sea-based oil pollution (most of it due to illegal discharges) using remote sensing imagery for the period 1999-2004, showing likely spills along the main shipping routes: Odessa - Istanbul and Novorossiysk - Istanbul. A substantial concentration of likely oil spills was also detected in the area where the Istanbul Strait enters the Black Sea.

The annual number of likely spills/illicit discharges detected in this study is shown in the Table bellow. The time-scale over which the study was carried out is too short to determine whether the situation has improved or not during recent years. In any case, the illegal discharges are an order of higher magnitude compared to accidental oil spills.

SAR images analyzed and likely oil spills detected for the years 2000, 2001, 2002, 2004 (after Tarchi *et al.*, 2006).

Year	SAR Images analyzed	No. of likely spills detected	Spills per image
2000	710	255	0.36
2001	519	249	0.48
2002	422	200	0.47
2004	1514	523	0.35
TOTAL	3165	1227	0.39

Implementation of the preventive and anticipatory principles to this sector shall become a national and regional challenge. To combat accidental pollution and illegal discharges where intense marine transport of oil and other NHSs (noxious and harmful substances) in the region take place should also be considered as a challenge.

*4. Moreover, the past **introduction of exotic species**, through the deballasting of vessels, has **seriously damaged the Black Sea ecosystem** and constitutes a threat to the adjacent Mediterranean and Caspian Seas.*

The considerable number of records of new aliens between 1996 and 2005 show that the Black Sea is still a favorable region by those transported especially with ballast waters. Therefore, the prediction and prevention of invasion by potentially harmful species continues to be a challenge for the Black Sea.

*5. **Inadequate resources management** and, in particular, inadequate policies with respect to fisheries and coastal zone management continue to **impede the sustainable development** of the Black Sea region. Most fish stocks in the Black Sea, already stressed as a consequence of pollution, have been over exploited or are threatened by over exploitation; many coastal areas have deteriorated as a result of erosion and uncontrolled urban and industrial development, including the resultant construction activities. Consequently, there is a **serious risk of losing valuable habitats and landscape and ultimately, the biological diversity and productivity of the Black Sea ecosystem.***

Due to over fishing in the early 1970s-1980s, the structure of catches has shifted from predatory to non-predatory species significantly. Total fish landings are now about half of what they were in the mid 1980s. Marine living resources have been greatly affected not only by over-fishing but also by alien species introductions, eutrophication and habitats change/damage.

Eventhough there are some recent improvements in fish catch statistics and in predatory fish catches, turbot, sturgeon, dogfish and whiting catches have not shown similar trends and unsustainable fishing practices are still commonly used in the region.

The challenge in this sector would be the development of the regional cooperation and Black Sea wide implementation of the principles of sustainable fisheries.

6. *The above considerations led to suggestions that the process of degradation of the Black Sea is irreversible. However, environmental monitoring, conducted over the past 4-5 years, reflects perceptible and continued improvements in the state of, some localised components of the Black Sea ecosystem. These improvements appear to be the indirect result of reduced economic activity in the region, and to a certain degree of protective measures taken by governments. **The challenge which the region now faces is to secure a healthy Black Sea environment at a time when economic recovery and further development are also being pursued.***

Keeping the Black Sea environment healthy at a time when economic recovery and further development are also being pursued is considered being the challenge of number one priority for all Black Sea coastal states. It puts a strong demand for full implementation of all principles. These include continuous national and regional efforts to control discharges and all human activities to damage biodiversity and habitats of the Sea.

7. *This Strategic Action Plan is a step in the process towards attaining sustainable development in the Black Sea region. Its overall aims are **to enable the population of the Black Sea region to enjoy a healthy living environment in both urban and rural areas, and to attain a biologically diverse Black Sea ecosystem with viable natural populations of higher organisms, including marine mammals and sturgeons, and which will support livelihoods based on sustainable activities such as fishing, aquaculture and tourism in all Black Sea countries.***

The analysis made in the draft SAP (2008) on the subject:

The 1996 BS SAP was a groundbreaking document for the Black Sea region which established specific targets and timetables for implementing the objectives of the 1992 Bucharest Convention. However, it was an overly ambitious document and very few of the targets were accomplished on time. Furthermore, the 1996 BS SAP also suffered from problems of enforcement of national environmental laws and legislation, and the lack of a regional mechanism to ensure compliance with different policy actions. An amendment in 2002 (the 2002 Sofia Declaration) aimed to resolve some of these issues.

The 2008 BS SAP has been formulated through careful consideration of inter alia the 1996 SAP, the 2007 BS TDA and the 2007 BS SAP Gap Analysis. It aims to help resolve the transboundary environmental problems of the Black Sea and is a joint effort of all the Black Sea countries. The SAP was elaborated from consensus reached at a multinational level in relation to a series of proposals that include: Ecosystem Quality Objectives (EcoQOs); short, medium and long term targets, and legal and institutional reforms necessary to solve main environmental problems identified within the 2007 BS TDA.. The process of elaboration of the SAP was characterized by the participation and commitment of the main stakeholders and key institutions of the Black Sea coastal states.



### 3. The Basis for Cooperative Action

The Principles adopted for the Black Sea Strategic Action Plan were fully accepted by the Black Sea States and were introduced into the respective national legislative and regulatory framework:

#### *Principles*

- 8. The **concept of sustainable development** shall be applied, by virtue of which the carrying capacity of the Black Sea ecosystem is not exceeded nor the interests of future generations prejudiced.*
- 9. The **precautionary principle** shall be applied, by virtue of which preventative measures are to be taken when there are reasonable grounds for concern that an activity may increase the risk of presenting hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the activity and the effects and by virtue of which greater caution is required when information is uncertain, unreliable or inadequate.*
- 10. **Anticipatory actions**, such as contingency planning, environmental impact assessment and strategic environmental assessment (involving the assessment of the environmental consequences of governmental policies, programmes and plans), shall be taken.*
- 11. The **use of clean technologies** shall be stimulated, which require the replacement or phasing-out of high waste and waste generating technologies that remain in use.*
- 12. The **use of economic instruments** that foster sustainable development shall be promoted through, amongst other things, the implementation of economic incentives for introducing environmentally friendly technologies and activities; the phasing-out of subsidies which encourage the continuation of non-environmentally friendly technologies and activities; the introduction of user fees and the polluter pays principle; as well as the application of natural resources and environmental accounting.*
- 13. **Environmental and health** considerations shall be included into all relevant policies and sectorial plans, such as those concerning tourism, urban planning, agriculture, industrial development, fisheries and aquaculture.*
- 14. Pending the resolution of ocean boundary matters in the region, **close cooperation among Black Sea coastal states**, in adopting interim arrangements which facilitate the rehabilitation of and protection of the Black Sea ecosystem and the sustainable management of its resources shall be pursued.*
- 15. **Cooperation among all Black Sea basin states**, and, in particular, between the Black Sea coastal states and the states of the Danube river basin, shall be promoted.*
- 16. The involvement of **stakeholders** in the implementation of this Strategic Action Plan, through, amongst other things, the determination of user and property rights shall be promoted.*
- 17. **Transparency and public participation**, shall be fostered through the wide dissemination of information on the work undertaken to rehabilitate and protect the Black Sea and through the recognition and the exercise of the right of participation of the public, including stakeholders, in the decision making and implementation of this Strategic Action Plan.*

8. The necessary legislative arrangements to apply sustainable development principles have been made by all the Black Sea coastal states at different levels. Two Black Sea coastal states Bulgaria and Romania- are already in the European Union; Turkey is in the accession period hence in the process of harmonization its environmental policy with the EU legislative framework. Similar harmonization efforts exist in Georgia and Ukraine, as stated in the National Gap Analysis Reports on the SAP implementation in 2000-2005 (2007). A closer EU-Russia cooperation in the environmental field is found to be essential to move ahead the implementation of the objectives and priorities of the EU-Russia Common Economic Space Road-map (National Gap Analysis Report).

### 3. The Basis for Cooperative Action

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**Bulgaria** follows the principles for sustainable European Union water policy through the implementation of a coordinated and integrated water policy aiming at the protection and sustainable water use. Bulgaria has a national strategy for development and management of water sector in 2004-2015 and a plan for public participation, open and prognostic approach in the water management, and its effective use and fair distribution, as well as protection and recovery of quality of water resources. There is also a national strategy for environment 2000-2006 (**to be revised for the period 2009-2018**) which includes plan for implementation of obligations of Bulgaria for global ecological problems. The basic principles of environmental protection policy in **Georgia**, settled up in the Environmental Protection Law (EPL), include the principle of sustainable development. In **Romania**, sustainable water management has been achieved with the implementation of EU water directives and the principle is widely considered for the sustainable use of marine resources as well as for the conservation of biodiversity. In **Russian Federation**, the Federal Law "On Fishery and Conservation of Water Biological Resources" (2004) ensures the conservation of bioresources and its sustainable use. The "EU Integrated Environmental Approximation Strategy" for the years 2007-2023 of **Turkey** will be a key tool to accelerate the sustainable use of environmental resources where the biological diversity will be protected, natural resources will be managed in a rational manner with an approach of sustainable development, and finally the rights to live in a healthy and balanced environment will be ensured. In **Ukraine**, the elements of the Principle have been incorporated into the national legislation and national (State) Programs. Eventhough the principal document (The Concept of Sustainable Development of Ukraine) has not been adopted yet, the "Concept of Sustainable Development of Settlements" was adopted.

In order to measure the progress in sustainable development in the Black Sea region, legislative arrangements are critical first steps and these have seemingly developed or under development. However, an assessment with the use of socioeconomic indicators (**Annex I.6**) might be meaningful since the socioeconomic welfare is directly linked with the sustainable development policies in place. Population parameters are important indicators to assess the socioeconomic level and according to national statistics the total population of all Black Sea coastal states is above 350 millions in 2007 and there are slight changes in the last 7 years in the Russian Federation, Turkey and Ukraine whereas remained the same in Bulgaria, Georgia and Romania (**Annex I.6, Figure 1**). According to IMF statistics, the GDP per capita has had an increasing trend for all the BS States in 2002-2007 (**Annex I.6, Figure 2a,b**). Human development index provides information on the development level of the region and may also be related to the sustainable development (**Annex I.6, Figure 3**). It is an index directly linked to life expectancy, level of education and living standards where 3 of the Black Sea coastal states (Bulgaria, Romania, and Russian Federation) are evaluated by UNDP as having high level of human development and Georgia, Turkey and Ukraine having medium level of human development.

GDP per unit of energy use is suitably related to sustainable development and indicates economic output obtained from one unit of energy used. The recent UNDP data evaluated for the region (**Annex I.6, Figure 4**) shows that this is most efficiently achieved in Turkey compared to other coastal states of the Black Sea.

9. The application of the precautionary principle have been recognized in the Black Sea region and integrated in national policy documents to protect the environment from pollution and ecological damages.

In **Bulgaria**, the precautionary principle application in the national legislation is secured by the Water Act supported by territory organization law and regional development law which include investment plans and projects. Principles of Preservation of Biodiversity, Minimization of Wastes, Recycling and Restitution, as settled in the **Georgian** Environment Protection Law, assimilate the precautionary principle. In **Romania**, the Precautionary principle is promoted in the integrated water resources management, respectively Water Law. In the Federal Law "On Environmental Protection" (2002) of the **Russian Federation** there are specific principals to address the precautions needed to preserve biodiversity and natural resources while organizing economic activities accordingly. Taking precautions against the diminishing of biological diversity is one of the key elements of the EU-Integration Strategy of **Turkey**. The principle has been integrated within the Strategy referring to waste management, water management, prevention of pollution etc. where legislative framework has been prepared or under development. **Ukraine** has the Principle in its national legislation, however, economic constrictions still do apply for proper application of them. This is the case in almost all the states (apart from Bulgaria where investment plans are also included in the implementation schemes).



**10.** Environment Impact Assessment, Strategic Environmental Assessment, contingency planning and other anticipatory actions have been taken or recognized by all the coastal states at different levels, and gradually become the commonly accepted practices in the region.

In **Bulgaria**, preventive actions for priority elimination of ecological damages from their source are considered in the Environmental Protection Act, Water Act and River Basin Management plans and similarly it is the case in **Romania**. In general, EIA is the most common anticipatory action considered by all the coastal states. In **Russian Federation**, EIA is a compulsory principle of the Federal Law "On Environmental Protection" (2002) in case when decisions are to be made on an economic or other activity. In **Georgian** regulations, EIA is also obligatory and used with the State Ecological Expertise in an integrated way. The By-law on EIA in **Turkey** was revised according to the EU EIA Directive and came into force in 2003 and although it had been always widely used, the studies on strengthening and increasing the effectiveness of the EIA process was still going on. The implementation of EIA in **Ukraine** is compulsory and further actions are aimed at the improvement of its efficiency.

SEA has been integrated in the national legislation of Bulgaria and Romania. The principle was incorporated in the Law of Ukraine on Ecological Expertise. In Turkey, a draft By-law on SEA in compliance with the EU SEA Directive is prepared and at this stage it is necessary to initiate pilot and capacity building projects for an effective implementation. Georgia is a party to the Kiev Protocol on SEA of the Espoo Convention. Except Turkey and Russian Federation, the Black Sea states are signatories to the SEA Protocol.

The Convention on the Environment Impact Assessment in the Transboundary Context was ratified by Bulgaria, Romania and Ukraine and signed by Russian Federation. The Integrated Coastal Zone Management (ICZM) and LBS (Land Based Sources) AGs Joint Meeting in 2007 has initiated to develop Black Sea Regional Guidelines on this matter which had already been included in the work plan (2007/8) of the Black Sea Commission.

BS Contingency Plan- Part I (for oil) was agreed to be adopted by the BS States, and signed by Bulgaria, Romania and Turkey where it is at the final stage of signatures in Ukraine, Russian Federation and Georgia. The Annexes of the regional CP are under regular update as required. National contingency plans exist - recently adopted in the Russian Federation (2003) and in Georgia (2005) or in a draft version (Turkey), some of them need update (Bulgaria, Romania), under Ukrainian regulations all UA marine ports have local contingency plans. Part II (for chemicals) has not been drafted for the region, feasibility study is still pending as well.

**11.** The importance of the use of clean technologies for pollution reduction at source or the phasing out of high waste and waste generating technologies must not be underestimated. BS states are considering such options, however, implementation requires legislative arrangements, enforcement and economic incentives and partnership in taking actions in solving environmental problems and investments to be planned for green technologies.

In **Bulgaria** new techniques for economical water use are applied and the use of clean technologies is one of the requirements according to the Environment Protection Act. In **Romania**, many environmental enterprises, having the investment capacity restructured and modernized their facilities through cleaner production process, BAT implementation and wastes minimisation efforts. The use of innovative technologies in the field of waste management, ecosafety and mitigation of greenhouse gases are determined by a number of legislative acts and programs in **Ukraine**. In this context, a set of laws are elaborated on priority directions of science and engineering development (2001), innovative activities (2002) and their directions (2003). In **Turkey**, the use of clean production technologies and advanced treatment techniques have been accepted as a strategy to prevent and gradually reduce the discharges of dangerous substances to the environment (2006), as well as the use of BAT in industrial pollution control with a cooperative approach among all the related parties is recognized. **Georgia** reports no BATs and BAPs application in practice. BAPs and BATs are mainly applied in **Romania** and **Russian Federation**.

Numerous relevant laws/regulations, presented in **Annex II.1**, include BAP and BAT meaning that they are promoted at the regulation level in all the countries, however, the implementation practices are not measurable for each country so far.

### 3. The Basis for Cooperative Action

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**12.** Economic instruments are an important part of national environmental policies and management. In particular, they are the introduction of user fees and polluter pays principles. A common problem of the Black Sea coastal states is the inadequate financial distribution of these revenues. In many cases these financial resources are not invested into environmental protection, rehabilitation or conservation measures. The application of the economic incentives is not sufficiently implemented in practice although provisioned in the Black Sea coastal states legislations.

Introduction of economic instruments ("polluter pays" principle, sanctions, ecological product fees, consumer fees) are adopted in **Bulgarian** legislation by the Environment Protection Act. They are the elements of EPL in **Georgia**. They were adopted as part of the integrated water resource management in **Romania**. The use of natural wealth for a pay and the reimbursement of a harm inflicted to the Environment are within the basic principles of environmental protection in the **Russian Federation** that are listed in Federal Law "On Environmental Protection" (2002). The application of user fees and polluter pays principles is encouraged through tax reduction and similar measures in **Ukraine**. In **Turkey**, the principle is addressed in the EU Approximation Strategy (2006) to support the establishment of a financing system for identified sectors like waste management.

**13.** Environmental and health considerations are reflected in sectoral plans and appropriate legislation of **Bulgaria**. The quality of bathing waters is secured by Directive 76/160/EEC. The new Bathing Water Directive (2006/7/EC) transposition is expected during the next five years. Beach profiles will be prepared till 2009. Also a national action plan of environment and health was prepared by the Ministry of Health in 2002 to realize projects to solve environment problems from all industrial sectors; to build necessary systems for self control and monitoring of different pollutants spread by big industrial installations and for the determination of laws for stimulation of economic sectors for investments in safety technologies and control environment pollution. In **Romania** environmental and human health aspects are considered within the relevant European legislation for urban waste water management, drinking and bathing waters, transposed into national legislation. In Georgian EPL, the "Principle of Mitigation of Risk" and "Principle of Priority" are the tools to consider human health aspects. There is no monitoring of bathing waters. According to Federal Law of **Russian Federation** "On Sanitary-Epidemiological Well-Being of the Population", criteria of safety and/or concentration of chemical, biological substances and microorganisms in the water objects, which could be used for bathing purposes, are determined in Sanitary Rules and Norms for the Protection of Surface Waters Against Pollution and bathing waters are systematically monitored. In **Turkey**, human health aspects were considered within national legislation for bathing/recreational waters, sea products and drinking water aspects. In the EU Approximation Strategy, setting up better sanitary conditions for drinking water and bathing waters are further targeted. Beach profiles will be prepared till 2013. In **Ukraine**, environmental and health considerations are reflected in relevant policies and sectoral plans, however, implementation and enforcement of them are poorly achieved because of economical constraints of the country.

Bathing Water monitoring and reporting are in general well developed in the BS region, however, criteria and standards are still different for some countries.

**14 & 15.** Cooperation among the coastal states and the basin states (basically concerning Danube and Dnipro basins) have been established at the regional, bi- and multi-lateral levels. Above all, the Black Sea states are parties to important international and global conventions (IMO MARPOL, CBD of UN, etc.) committing themselves to take actions on various environmental issues and problems which are also highlighted in the Convention, its Protocols and the BS SAP (see **Annex I.1**).

The environmental protection bilateral cooperations between Black Sea coastal states and multilateral cooperation in the framework of the Black Sea Economic Cooperation (not only the BS coastal states, but also Armenia, Greece, Azerbaijan, Moldova, Serbia, Albania) are presented in **Annex I.2**.

Regional cooperation among all the Black Sea coastal states has been successfully promoted through: the Convention on the Protection of the Black Sea Against Pollution (1992); its four protocols and the BS SAP (1996) since their adoption. The UNDP GEF BSEP was launched in 1993 to support the implementation of the Convention and its protocols. The 1996 BSSAP was amended in 2002 in terms of the deadlines extension keeping the 1996 context fully.

The Danube River Protection Convention as the legal instrument for co-operation and transboundary water management in the Danube River Basin was signed in 1994 by eleven of the Danube Riparian States and



the EC, including three Black Sea states: Bulgaria, Romania and Ukraine. The two international institutional structures, the BSC and the ICPDR, were established to operate these regional legal instruments and the programmes and to reinforce and coordinate the cooperation among the Black Sea coastal and basin states. The cooperation of these two main bodies was officially established through a MOU between BSC and ICPDR signed in 1997 and an ad-hoc technical working group was established to contribute to the achievement of common strategic goals of both Conventions, particularly the protection of the Black Sea ecosystem.

GEF Strategic Partnership (2001-2007) for Nutrient Reduction in the Danube / Black Sea Basin - the largest and perhaps most ambitious water-related project supported by the GEF anywhere in the world. The Danube **Regional Project** is one of three components of GEF SP. The main goal of the project was to strengthen existing structures and activities in order to facilitate a regional approach, thus strengthening the capacity of the ICPDR and the Danube countries to fulfil their legally binding commitment to implement the Danube Convention.

The Danube Black Sea Task Force (DABLAS), 2001, has the overall goal of developing financing mechanisms for the implementation of investment projects for pollution reduction and the rehabilitation of ecosystems in the wider Black Sea region. The first set of projects of the Task Force was initiated to prioritize water sector investment projects addressing nutrient reduction.

The **Black Sea Ecosystem Recovery Project** (BSERP), a GEF IW Project implemented by UNDP, was designed as a 5-year Project (2002-2007). It was an effort linked to the Danube/Black Sea Strategic Partnership, Danube Regional Project and the Black Sea Nutrient Reduction Facility of World Bank.

In addition to the efforts for DRB, an international cooperation for the Dnipro (Dniepr) River basin was also launched by the three riparian countries (Republic of Belarus, Russian Federation, and Ukraine). The development of the "Strategic Action Programme for the Dnipro Basin and Implementation Mechanisms" (SAP) was the result of the joint effort of these countries with the financial support of GEF and coordination of UNDP. The Dnipro SAP is a policy document, negotiated and endorsed by the riparian countries, to be implemented at the highest level of executive power. It defines the priority areas for action to resolve the priority problems of the Dnipro basin identified in the Dnipro TDA.

**Annex I.3** compiles programmes, major projects and activities run during the period of 1992-2008. This includes an overview of the Strategic Partnership programmes and projects, pilot projects and key achievements of BSERP, DABLAS projects, national programmes/projects, EC FP and other scientific projects, World Bank, EBRD, etc.

Besides, intergovernmental cooperation on oil spill preparedness, search and rescue cooperation, port state control and other relevant agreements and arrangements are successful applications in the region.

**16.** The stakeholders in the process of the BSSAP implementation consist of a variety of concerned groups including governments, international donor organizations, financial institutions, businesses, shipping companies, NGOs, educators, and others. Cross sectional cooperation is a key issue to be achieved.

Involvement of municipalities in problem solving and services is a common application in all the countries whereas there are only few reported good examples of public-private partnership to solve the environmental problems. This approach is built on the ownership of the problems and need to be improved and promoted for the region.

Since 2000 the Black Sea NGO Network (BSNN) being more active than in the earlier years of its establishment has had more formal meetings and developed NGO action plans to contribute to the protection of the Black Sea. The BSNN has implemented/participated a number of projects since 2000. A list of them is presented in **Annex I.3.2** (Small Grant Projects). The profile of BSNN should also be reviewed from time to time for new participants to fully reflect the views of NGO communities of the Black Sea.

Small scale educational projects and other activities regarding the awareness of environmental problems are organized in all the countries and the Black Sea Day -31st of October- has unified the efforts of concerned parties. Ecological education practices in different sectors (tourism, health, etc.) as well as at schools in regular classes have been applied in more or less all countries and should be more widely looked to.

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17. The legislative arrangements in the BS states on **public participation in decision making and information access** have been achieved by almost all the countries. In **Bulgaria**, the national Law on Access to Public Information came into force in 2000 so as to reflect the principles of Aarhus Convention (AC) in the Bulgarian Legislation. The Law is applied to public information that is produced or stored by the state/local authorities and defines the procedure of access. Apart from the Law, the environmental legislation in Bulgaria also makes provisions for public participation in decision making process related to the environment (e.g. EIA, SEA procedures). **Georgia** ratified the AC and it is automatically in force without internal arrangements in the national legislation. For its effective implementation the AC Center was established in the Ministry. This Center provides information to public with the involvement of media. The rights of citizens for public participation and information access have also been secured by the Georgian Constitution and relevant environmental legislation as in Bulgaria. This is expected to be a common approach in all the BS states even if they are not the parties to Aarhus Convention. For example, in **Turkey**, the Law on the Right to Access to Information came into force in 2003 and the By-law was published in 2004 which determined the frameworks of providing information to the public. Based on this law, necessary amendments were made in the Environmental Law and a national Environmental Information Exchange Network is aimed to be established.

In Bulgaria and **Romania**, public involvement in long term decision taking process is also realized through the establishment of River Basin Council which includes different stakeholder groups and public and, in parallel, the establishment of the Water Council in the Ministries which are state public consultative bodies. In **Russian Federation**, public participation in environmental protection is one of the principles established by Federal Law "On Environmental Protection". The order of public participation in decision-making process is not established. In **Ukraine**, the implementation of the principle provisioned by the Aarhus Convention and as follow-up of its requirements, the establishment of NGO networks and the consultative bodies have been established and Aarhus center affiliated to the Ministry of Environment became operational.

Black Sea Information System (BSIS) exists and collection of data is regular since 2001, including time series data from previous periods. The functioning of the System needs to be strengthened with technical and scientific expertise. An information policy was also developed by the Black Sea Commission and presented in **Annex 1.4**. In 2007 on-line BSIS was developed within the BSERP to implement the Information Strategy of the BSC having tools for reporting and communication at different levels of the Black Sea stakeholders. Technical information on the developed system is presented in **Appendix I** of this report. Further developments/enlargement of the BSIS is envisaged to monitor the progress in the Black Sea environment and establish a Clearing House mechanism for the environmental state and information sharing under the umbrella of the Black Sea Commission. New BSIS determinands and components are in process of discussion/elaboration (marine mammals, marine litter, etc).

*The Istanbul Commission*

*18. In order to implement the actions and policies agreed on, it is imperative that the regional mechanisms for cooperation among Black Sea states be strengthened.*

*19. The Istanbul Commission and its subsidiary bodies, including its Secretariat, should be fully functioning, in accordance with the Bucharest Convention, by January 2000. In order to achieve this, Black Sea states agree to make available the necessary financial and other resources.*

*20. The Istanbul Commission having agreed to implement this Strategic Action Plan at its second session, held in Istanbul on September 16-17, 1996, is invited to establish, by November 1997, a body to provide support for specific projects and processes related to the implementation of this Strategic Action Plan.*

*21. It is recommended that, by January 1997, the Istanbul Commission establish, on the basis of the current structure of BSEP Working Parties, subsidiary bodies which can assist it in the implementation of the Strategic Action Plan.*

*22. It is recommended that the Istanbul Commission initially establish the following Advisory Groups as its subsidiary bodies, the description and general terms of reference of which are given in Annex I:*

- a) an Advisory Group on the Environmental Safety Aspects of Shipping, coordinated by the Activity Centre in Varna, Bulgaria;*
- b) an Advisory Group on Pollution Monitoring and Assessment, coordinated by the Activity Centre in Odesa, Ukraine;*
- c) an Advisory Group on Control of Pollution from Land Based Sources, coordinated by the Activity Centre in Istanbul, Turkey;*
- d) an Advisory Group on the Development of Common Methodologies for Integrated Coastal Zone Management, coordinated by the Activity Centre in Krasnodar, Russia;*
- e) an Advisory Group on the Conservation of Biological Diversity, coordinated by the Activity Centre in Batumi, Georgia;*
- f) an Advisory Group on the Environmental Aspects of Management of Fisheries and other Marine Living Resources, coordinated by the Activity Centre in Constanta, Romania; and*
- g) an Advisory Group on Information and Data Exchange, coordinated by the Commission Secretariat.*

*23. It is recommended that the Istanbul Commission regularly review the status and functions of the Advisory Groups and consider the establishment of ad hoc groups for the purposes of implementing this Strategic Action Plan.*

*24. It is recommended that the Istanbul Commission assume the responsibilities from the Black BSEP-PCU for the operation and maintenance of the electronic communication system which has been established for purposes of facilitating communication between the components of the Black Sea institutional network.*

*25. In order to strengthen and coordinate the work of national and regional research institutions, it is recommended that the Istanbul Commission assume the responsibilities from the BSEP-PCU for the clearing house mechanism for the exchange of information on bibliography, data sources and research programmes. In addition, it is recommended that the Istanbul Commission organise bi-annual research conferences on topics related to the goals of this Strategic Action Plan. The first of such conferences will be held in 2004.*

**18-24.** In order to achieve all integrated goals of the Convention and the Protocols, and to implement the SAP, the BSC created a functional institutional structure on the national and regional levels that consists of the Commission itself and its subsidiary bodies functioning on behalf of the Black Sea Commission on the national and regional levels as required by the articles 18 - 22 of the SAP. The subsidiary bodies of the BSC consists of seven Advisory Groups (AG), organized thematically, a national focal point

### 3. The Basis for Cooperative Action

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and representative for each advisory group, and the Activity Centers (AC) placed in and supported by the each Black Sea coastal state individually. This structure, as mentioned in the previous Implementation Report, has not been changed and the theoretical organogram of the Black Sea Commission remained the same.

Unfortunately, the efficient functioning of all the system could not be properly achieved, especially in the functionality of the AC. Information and Data Exchange (IDE) AC, being the Secretariat, prepared the ground for functioning of IDE AG and IDE AG within their formal meetings, recognizing that successful data management implies quality controlled data base. The Black Sea information policy was developed by this Group. In spite of all the efforts the functioning of IDE did not last. Some others, like Environmental Safety Aspects of Shipping (ESAS), Pollution Monitoring and Assessment (PMA), Conservation of Biodiversity (CBD) AGs worked quite efficiently and produced technical and policy papers to support the Commission's work and the implementation of SAP at a regional level. The LBS group improved considerably in 2007 due to the re-establishment of the LBS AC.

As required by Art. 23, the BSC Institutional Review (2006) prepared within the BSERP outlined the major gaps in legal framework, administrative structure, management capacities, budgetary issues and identified remedial actions to be taken in short and longer term.

A detailed analysis of the present structure and functioning of the BSC was also made in the Regional Gap Analysis Report (2007) which was based on national gap analysis reports and expert views. TDA (2007) reviewed the structure and analyzed the problems in the functioning of the BSC.

All these reviews provide clear messages for the need in strengthening the BSC and its subsidiary bodies and recommendations to achieve progress.

**25.** Research conferences are important for scientists to exchange views on acute and fundamental dilemmas in the Black Sea region, to share experiences and to agree upon common approaches for finding solutions to environmental problems. Conference goals should include the improvement of knowledge on the state of the environment of the Black Sea and of the decision making process. International and national assistance will be sought for organizing regular conferences and for creating the clearing house mechanisms for the exchange of bibliographic information, data sources and research programs. The agreed information policy of the BSC is reflected in **Annex 1.4**, as mentioned above.

The First International Scientific Black Sea Conference was held in May 2006, Istanbul, Turkey. This event received very positive reflections and important feedback of recent scientific knowledge to the management of environmental issues. Proceedings of the Conference are prepared, published on CD and widely disseminated.

Biannual Scientific Conferences in the Black Sea region are provisioned in the Black Sea Strategic Action Plan as an effective tool for regular communication of the Black Sea Commission with the scientific community.

The main objective of the first conference was to identify research priorities for the Black Sea as well as to give advice to the Black Sea Commission on indicators of the Black Sea ecosystem state and reference conditions that will allow conducting assessment of efficiency of policy measures taken in the region for its protection against pollution and sustainable development.

The second Conference will be held in October 2008, Sofia, Bulgaria, dedicated to climate change, practices for mitigation and response and adaptation projects.

The Black Sea Env. Series Vol: 1, Black Sea Bibliography has been published in 1995 and covers publications in the period 1974-1994. In support to this complete effort, in 1998 and recently in 2007 Turkish Black Sea Bibliographies have been published by TUDAV. Both editions include a considerable number of SCI referenced publications and even more importantly include gray literature (in English and Turkish) that is difficult to access by all the scientists of the region.

**Annex 1.5.** gives the list of major publications for the Black Sea, those which have been mostly cited in the scientific community of the region.

Newsletters of the Black Sea Commission: How to Save the Black Sea? Your Guide to the Black Sea Strategic Action Plan, have been published on a regular basis, annually. Two very important new books appeared in 2003 and 2006 concerning the ecology of the Black Sea. They are:

"Modern state of biological diversity in the near-shore area of Crimea (the Black Sea sector)" /Edit. V.N. Eremeev, A.V. Gaevskaya; NAS Ukraine, Institute of Biology of the Southern Seas.- Sevastopol: Ekosi-Gidrophizika, 2003, and "North-western part of the Black Sea: biology and ecology". Ed. Y. Zaitzev, B. Aleksandrov, G. Minicheva Kiev: Naukova dumka Publ., 2006.; Multidisciplinary investigations of the North-East Part of the Black Sea , Edit. A.G. Zatsepin; M.V. Flint Moscow, "Nauka", 2002.

### **Wider Cooperation**

*26. Black Sea countries shall individually and jointly encourage the following:*

*a) Enhanced coordination between the regional bodies which contribute towards the rehabilitation and protection of the Black Sea ecosystem and the sustainable development of Black Sea resources, such bodies include the Istanbul Commission and its subsidiary bodies, the Black Sea Economic Cooperation (BSEC), the Parliamentary Assembly for the Black Sea Economic Cooperation (PABSEC), the future Black Sea Fisheries Commission, and the NGO Forum;*

*b) Close cooperation between the regional governmental bodies and the NGO Forum through transparency of the negotiating process, widespread availability of information and documents, and, where appropriate, open access to meetings;*

*c) Close coordination of the activities of donors, including multilateral financial institutions, the European Union, bilateral aid agencies and private foundations, in their aim to secure funding for projects and policies identified in this Strategic Action Plan and to be further developed in the National Black Sea Strategic Action Plans.*

*d) Close cooperation with relevant international organisations, including UN Agencies and international non-governmental organisations in implementing this Strategic Action Plan.*

*27. International agreements relevant to the aims and objectives of this Strategic Action Plan should be implemented by each Black Sea state and, where this is appropriate and has not yet been done, it is recommended that Black Sea states consider ratifying or acceding to such agreements. Consideration should also be given to implementing other relevant international instruments.*

**26. a)** The Black Sea Commission established a mechanism and procedure for cooperation with other regional bodies by creating "the observer status to the Black Sea Commission". Observer status was granted to a number of organizations including BSEC, GEF, UNDP, UNEP, ICPDR, Port State Control, EU, Black Sea NGOs Network, ACCOBAMS etc. Cooperation was also achieved with private sector (OSPRI) and important organizations, such as WHO, IMO, OSCE, EMSA, GESAMP, SIDA, SMA, JRC, IUCN, FAO, HELCOM, MED POL, EEA, etc.

Another tool for strengthening regional cooperation was established through a number of Memoranda of Understanding (MOUs). The MOU between BSC and ICPDR was negotiated and signed in 2001. The MOU between ACCOBAMS and BSC Secretariats was signed in June 14, 2002. MOU between BSC and EEA was signed in May 2003. With UNEP three MoUs (2006-2007) for implementation of targeted projects were signed in the field of marine litter management activities and marine mammals protection and conservation.

Since the Black Sea coastal states are the Contracting Parties to a number of global, European and regional conventions and agreements pertinent to the issues covered by the Bucharest Convention, the Black Sea Commission establishes necessary cooperation with executive bodies and networks of - London Protocol, Espoo Convention, Bonn Agreement, IMO Conventions, CBD, Convention on the Protection and Use of Transboundary Watercourses and International Lakes, etc.

**b)** Close cooperation between the regional governmental bodies and the NGOs (<http://www.bseanetwork.org/> and others) through transparency of the negotiating process, widespread availability of information and documents, and where appropriate, open access to meetings, has continued to be indispensable in the agenda of the Black Sea Commission. Regional projects as a rule incorporate NGO components and a small grants' program in order to support the NGO activities on regional and local levels. The BSERP NGO Small Grants Programme (SGP) was initiated in 2003 with the BSERP Phase 1 where 17 individual projects were supported with grants ranging from \$ 5,000 to \$30,000 (see **Annex I.3.2**, Small Grants projects Table). In the second round of the small grants projects (2006-2007), 36 national



### 3. The Basis for Cooperative Action

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projects in all Black Sea countries were supported with funding. The grants budget per country was US 50,000; the qualifying NGO proposals were evaluated in June 2006 by representatives of the BS Commission Secretariat, the BSERP and the BS NGO Network (<http://bsnn.org/>). In Ukraine the UNDP/GEF Danube grants were managed in parallel to the BS grants.

c) The donor support rendered to the Black Sea Commission since signing the Bucharest Convention incorporates grants and technical assistance from GEF, UNDP, UNEP, European Commission, TACIS/EuropeAid, PHARE, OSPRI, individual governments, etc. The UNDP/World Bank Partnership Program was activated in the Black Sea region. The EC initiative in establishing DABLAS Task force is specifically aimed at the investment components of the implementation of the BSSAP and National Black Sea Strategic Action Plans (**Annex I.3.4**, DABLAS Task Force Activities)

d) The close cooperation with UN agencies, European Commission and related agencies, Regional Seas Conventions, and international NGOs continue to be fostered in the process of the implementation of the BSSAP.

**27.** The international agreements relevant to the aims and objectives of this Strategic Action Plan and to which the Black Sea coastal states are contracting parties are presented in **Annex I.1** and **I.2**.

The "Black Sea Synergy" is a new initiative of EU ([http://ec.europa.eu/external\\_relations/blacksea/](http://ec.europa.eu/external_relations/blacksea/)) aiming at adding a new regional dimension to the European Neighbourhood Policy. This is not only related to the need for an increased EU involvement in the Black Sea area but also considers the adoption of the Thematic Marine Strategy and the related Directive (2008) which refers to Marine Regions including the Black Sea and requires from all member states "good environmental status" by latest 2020. The initiative is not proposing a new institutional structure, however, requires more commitments towards an enhanced and wider cooperation in the area.

## 4. Policy Actions

A full compilation of national policy measures taken at the national levels related to the SAP (1996) actions is presented in **Annex II.1** and the responsible institutes of implementation of national laws/regulations can be found in **Annex II.2**.

The level of investments made/planned to implement the actions is summarized in **Annex II.3**.

### ***Reduction of Pollution***

#### ***Land based sources of pollution***

On a regional level a very important action was undertaken in 2003 - the beginning of the revision of the LBS Protocol 1992. The principal objective of the revision the new Protocol for the Protection of the Black Sea against Pollution from Land-based Sources and Activities (hereinafter Revised BS-LBSA Protocol) is to further improve and strengthen the existing legal basis of environmental cooperation among the Black Sea States in the area of pollution from land.

The work on the new instrument represents a collaborative effort involving the six coastal states, the Black Sea Commission, the Black Sea Ecosystem Recovery Project, and the United Nations Environment Programme (UNEP). It has taken four years to complete the final draft Revised BS-LBSA Protocol and to submit it for the consideration of the Black Sea States.

It was generally agreed that the key objective of the revision was to enhance the 1992 LBS Protocol's normative provisions aimed at reducing nutrient and other pollutant inputs into the Black Sea. The specific reasons for the revision of the LBS Protocol include, among other things, are the following:

- A need to introduce and incorporate new conceptual approaches and notions of environmental law due to outdated content and legal form of the existing Protocol;
- A need to take into consideration developments at the international level, such as the adoption of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) in 1995 and various directives by the European Union (e.g., the EU Water Framework Directive and the Marine Strategy);
- A need to re-examine the environmental priorities in the Black Sea region and to make more clear and precise the respective obligations and rights of the Contracting Parties, due to problems encountered by countries in implementing the existing Protocol.

The Revised BS-LBSA Protocol will include not only the general objectives and commitments, but also concrete measures aimed at the reduction and possibly elimination of land-based pollution sources and prevention of harmful activities, including reference to BEP and BAT. The objectives and modalities of the Revised BS-LBSA Protocol, GPA and regional and national strategic action plans have to be properly harmonised.

### ***Rivers***

#### *Rivers*

*29. A Black Sea Basin Wide Strategy, negotiated with all states located in the Black Sea Basin, should be developed to address the eutrophication problem in the Black Sea. The objective of the Strategy should be to negotiate a progressive series of stepwise reductions of nutrient loads, until agreed Black Sea water quality objectives are met. Such a Basin Wide Strategy may also be required to ensure the reduction of inputs of other pollutants into the Black Sea, in particular oil.*

*30. Given that the Danube is the largest single source of nutrient inputs into the Black Sea, it is imperative that strategies for the reduction of nutrients be adopted for this river. The provisions in the Danube Strategic Action Plan (maintenance of 1995 levels) clearly are insufficient for addressing the eutrophication problem in the Black Sea.*

Eventhough, a regional strategy and plan to address eutrophication problem and reduce nutrient inputs with regional targets do not yet exist in the Black Sea, there are considerable national and multi-national cooperative programs/projects to combat eutrophication which are supported by national sources along as by GEF/UNDP, WB, EC and other international donors. Besides, numerous national river basin programs and cooperative projects supported by international donors have been implemented for two major river basins: the Dnipro and Danube. In addition to them, DABLAS Task Force has been operational since 2001 where both BSC and ICPDR are members of. In the Task Force, 6 projects are finalized or almost finalized in Romania, Bulgaria, Turkey (prepared for financing), and 39 projects are in the pipeline of the preparation phase for water infrastructure related investment in the region. 18 projects were in the pipeline as of 2006 (Regional Gap Analysis Report, 2007). A list of investment projects organized by national and international donors is presented in **Annex II.3**.

A list of other programmes and projects developed for the Protection of the Black Sea basin against environmental damages including eutrophication had been presented in **Annex I.3** and examined under cooperative actions (Arts. 14&15 of SAP).

River basin management programmes (**Annex 1.3.9**) have been adopted in some of the BS states and being considered by others as well. In **Bulgaria** and **Romania**, the WFD has been currently fully transposed into the national legislation, therefore, the RBMP have to be completed by 2009 and implemented by December 2015 which aimed at to achieve "good ecological status" of waters including the coastal waters of the Black Sea. In EU Integrated Environmental Approximation Strategy (2006) of **Turkey**, the investment needs of the water sector on the basis of EU Directives (including WFD) and donor contributions are identified for 2007-2013. Also, the NAP (2005) of Turkey is basically designed for the reduction of pollutants where pollution sources at 6 river basins (Sakarya, Kızılırmak, Yeşilırmak, West Black Sea, East Black Sea and Çoruh) in the Black Sea region were also identified and prioritization of pollution sources were made. Projects were identified and cost estimates prepared. The Anatolia Watershed Rehabilitation Project (2005-2011, supported by GEF and WB) is focused on two Black Sea River basins (Kızılırmak and Yeşilırmak) mostly concerning the reduction of pollutants from agricultural activities.

In **Ukraine**, a basin wide approach to the protection and rehabilitation of the Azov and Black Seas has been included in the national legislation namely Water Code of Ukraine. The preparation of the river basin programs for other Ukrainian rivers flowing into the Black Sea is provisioned by the Program and in progress. A National Program exists for Dnipro river basin, and for the Black and Azov Sea. In **Georgia**, there is no integrated management plan/strategy for rivers. Water basin management principle is considered within the Concept of Agrarian Policy of Georgia. After its adoption, Water Law will be revised to harmonize with WFD. In the Russian Federation, there is no national river basin management plans. Schemes based on general water basin principle will be prepared for at least 10 years. At present, there is no national river basin management plans in **Russian Federation**. Schemes based on general water basin principle will be prepared for at least 10 years.

In order to assess the loads of nutrients carried by rivers to the BS coastal waters, the data submitted to the BSC can be referred. Monitoring data (and therefore load estimates) are available for the majority of rivers, but flow measurements are not available from Georgia and frequency of sampling is still different in the Black Sea states. The LBS AG recognizes the need to further harmonise the monitoring strategies for rivers in the region. The Danube River monitoring strategy was considered. Regionally agreed List of Determinands (mandatory and optional) was the first step towards harmonization. Further the states will unify the frequency of sampling and the methods used for analyses to improve the comparability of river loads.

Ukraine reports for eight rivers, Russia reports six rivers, Georgia and Turkey report five rivers, Romania reports three rivers (branches of Danube) and Bulgaria reports two rivers to the BSC. In the last annual report of LBS AG (2008, **Annex III**), total riverine inputs from each county for 2006 were evaluated for TN, TP, BOD-5 and TSS loads and water fluxes. Total riverine input from Romania (Danube) was very high when compared with the other countries; being in the range of 610.8 - 400 kilotonnes TN/year and 71.6 - 30 kilotonnes TP/year for 2005-2006. An evaluation of such annual data sets for 1996-2005 period is presented in the TDA 2007 and displayed in Annex II, Fig. 1a of this report. According to the presented data, there has been a slight decrease in DIN loads of Danube whereas loads of total phosphorus has drastically decreased from 1990 to 2005 and reached to a level similar to the 1960's.



An evaluation of the coastal waters of the NWBS (Loyeva et al., 2008, in UA National Gap Analysis Report) indicates that during the last decade the phosphates content has been decreasing and the concentration of nitrogen bearing substances has been increasing in the water column (**Annex II.17, Figure 1.b**). The steady increase of nitrogen is mainly due to its organic forms higher concentrations. This tendency is more obvious for the western part of the Black Sea NW shelf. In the last decade, however, some stabilization of nutrients level in **surface** waters was recorded, which explains the lower frequency of algal blooms (being mainly concentrated in the 0-25 meters layer) and the lack of anoxic situations (respectively mortality of living organisms) in the Black Sea.

According to the TransNational Monitoring Network (TNMN, ICPDR, <http://www.icpdr.org/icpdr-pages/tnmn.htm>) measurements, N-discharge from the Danube decreased by about 30-40 % as compared to the 1980s. Such insufficient decrease, despite of the numerous measures taken, was interpreted as continuing contributions from high nitrogen stocks deposited in soils and groundwater in the catchments areas. The TNMN data do not show decrease in TP loads in 2001-2005 (see **Annex III**), which is not in agreement with other available data and reduction of nutrient levels in the NWBS in front of the Danube river.

### **Airborne pollution**

#### *Airborne pollution*

**31.** *More attention should be focussed on the issue of airborne pollutants, particularly those that involve transboundary movements, as well as appropriate measures for controlling them at source. An initial assessment of the magnitude of this problem should be undertaken by 2005*

An assessment of the airborne pollution problem in the Black Sea has not been made yet under the umbrella of the BSC. A cooperation between the Co-operative Program for Monitoring and Evaluation of the Long Range transmission of Air Pollutants in Europe (EMEP) and the Black Sea Commission for regular assessment of inputs of pollutants to the Black Sea will be extremely helpful to fill in this gap, as EMEP performs assessments for nitrogen and heavy metals depositions in the Black Sea region.

A country based assessment of transboundary air pollution by main pollutants (N, S, others) and particulate matter based on model results has been published by EMEP/MSC-W (2007) as complementary to EMEP Status Report 1/2007. The country based trends of emissions and estimated depositions of these pollutants have been displayed in **Annex II.17, Figure 2a**.

Though decreasing trends in emissions and atmospheric deposition of pollutants have been observed in the Black Sea region since the early 1990s, available information suggests that specifically the deposition of nitrogen to the Sea may be of similar order of magnitude to river loads and there is no pronounced change in N-emissions in the region. Risk of damage from ozone and PM is high in all Black Sea states. Since 1995 due to less extensive use of coal the average daily concentrations of CO, MO<sub>2</sub> and SO<sub>2</sub> dropped down significantly in densely populated areas along the Black Sea, however acid rains and smog are still frequent phenomena in the region.

The CO<sub>2</sub> emissions per capita and per unit GDP seemed to be decreased in almost all the Black Sea states according to UNDP-HDR **Annex II.17, Fig.2b**.

The deposition of heavy metals at the regional scale has also been presented in the EMEP Status Report, 2007 and displayed here in **Annex II.17, Figure 2c**. The deposition of Cd, Pb and Hg are more pronounced in the western part of the Black Sea.

In most of the BS countries EU legislation and strategies have been considered as basis for the improvement of the national legislations on air quality assessment and management, fuel quality, reduction of VOC emissions from stationary sources, pollution from combustion, climate change policy and long-range trans-boundary air pollution. Comprehensive national programmes to implement this legislation have been developed in some Black Sea countries. Considerable efforts were also exerted by some states for the monitoring of the airborne pollution in the region.

The UN Convention on Long-Range Transboundary Air Pollution and EMEP (Protocol on Long-Term Financing of Co-operative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe) have also been widely considered by the BS States All states are contracting Parties to this Convention (**Annex I.1**).

#### 4. Policy Actions

In 2008 the BSC PS signed an agreement with the EARTHWATCH GMES PROMOTE EU Project (<http://www.gse-promote.org/>) which is funded by the European Space Agency. The project provides to the Black Sea states Regional Air Quality Forecasts and Air Quality Records Services ([http://db.eurad.uni-koeln.de/promote/RLAQS/riu\\_rlaqs.php?force=BSC](http://db.eurad.uni-koeln.de/promote/RLAQS/riu_rlaqs.php?force=BSC)). The BSC PS invited all the Air Quality measuring Laboratories in the region to become end-users of the provided services. Of all states only Turkey has been involved in the end-users program of the PROMOTE project before, providing at the same time real time data on air quality for verification of the satellite and modelling simulations performed in the frames of the project.

##### **High priority point sources**

###### *High priority point sources*

*32. A list of high priority sites (hot-spots) for reducing discharges of pollutants has been developed. It will provide the basis for the elaboration of national strategies and timetables for realising substantial reductions of inputs of pollutants from hot-spots, in accordance with agreed water quality objectives. The following procedure has been agreed for the purpose of attaining these reduced inputs by 2006. Each Black Sea coastal state, in its National Black Sea Strategic Action Plan, will specify the strategies and timetables for attaining reduced inputs from the hot-spots located in its territory. In those cases where investments (as opposed to policy changes or economic restructuring) are required, in order to address specific hot-spots, pre-investment and investment studies will be pursued, with donor support where possible.*

*33. National reports on the progress made in addressing the identified hot-spots will be presented to the Istanbul Commission and widely disseminated, in 2002 and 2007. It is recommended that the Istanbul Commission prepare a consolidated report on this topic in time for the Ministerial meetings in 2002 and 2007. This report should include an assessment of the progress made on the strategy for each site. If the progress made is found to be insufficient to meet the agreed water quality objectives, further steps to reduce inputs will be decided upon at the Ministerial meetings.*

*34. In addition to the high priority point-sources, comprehensive national studies on the discharges of insufficiently treated sewage will be prepared by each Black Sea state by June 2002. It is recommended that this activity be coordinated by the Istanbul Commission, through its Advisory Group on the Control of Pollution from Land-Based sources. These studies should analyse the national and regional benefits to public health, the environment and recreation as well as the economic costs of installing sewage treatment plants. The studies shall serve as a basis for taking decisions and implementing significant reductions of the inputs of insufficiently treated sewage from large urban areas by 2006.*

Initially 50 hot spots were identified in 1996 TDA and investment plans for the rehabilitation of these spots were required to be made both at the national and regional levels. National BS actions plan were also required to be developed for this purpose. As mentioned in previous reports (National Gap Analysis and Regional Gap Analysis, 2007) none of the countries have had specific national SAPs for the Black Sea, however, adopted other related or closely linked national strategies and programmes. Important actions were undertaken by the States to implement these national programmes and improvements were achieved both at the identified hot spots and at other problem areas identified later. A list of investment projects developed or planned for all these sites are displayed in **Annex II.3** (Ref. TDA2007).

2007 TDA included a review of the present status of 1996 Hot Spots and investments made. In about 50 % of the identified hot spots, upgrading/construction of WWTPs have not been initiated yet and some of them have already been out of national plans. 14 of them have been adequately addressed and the projects were almost completed. Of these the construction work has been completed at: Bulgaria: Rosneta oil terminal WWTP, Varna Port WWTP, Bourgas Port WWTP, Asparuhovo municipal WWTP, Neftochim oil refinery WWTP; Romania: Mangalia municipal WWTP, Sheskharis oil terminal WWTP and Russia: Gelendzhik municipal WWTP. At Pivdenni municipal WWTP (Ukraine), over three times the original estimated investment costs have already been spent improving this facility, so pollution loads from this hot-spot are considered to have been addressed; however, it is planned to spend a further \$37

million on reconstruction/updating of this plant by the end of 2015. Likewise, in Romania, at Constanta North, Constanta South and Eforie South WWTPs, greater sums of money have already been spent on modernisation/updating of the facilities than originally estimated, with considerable further investments to be spent by the end of 2015.

Closure and a change of use of the Fertilchim fertiliser manufacturing plant in Romania have greatly reduced its emissions, meaning that the \$16,750,000 investment originally identified is no longer required. In the case of Dzhoubga municipal WWTP (Russia), the re-assessment of its pollution loads/impacts showed that no updating of the plant is required - this is also included in the list of 14 hot-spots successes.

Upgrading of a further 10 of the originally-identified hot-spots can be considered to have been partially completed. The investment funds originally identified for upgrading/reconstructing the Bulgarian Sodi (soda ash plant) and Tsarevo municipal WWTP appear to have been spent, but construction (in 2006) had not been completed. At the Petromidia petrochemical complex in Romania, capital investments have started, but the majority of modernisation/reconstruction work is planned for completion by the end of 2015. Similarly, in Russia, construction/modernization of Tuapse Port WWTP and Anapa municipal WWTP has started but will not be completed for some years yet.

In Turkey the situation is difficult to assess, since Trabzon municipal wastewater treatment plant was originally identified as being in need of upgrading, but which exact treatment works there was never identified. Investments have begun at several WWTPs serving Trabzon, with further funding to complete this modernisation, now identified in future capital investment plans. Work has been undertaken at Zonguldak WWTP, but the amount of money invested was considerably less than that originally estimated. A similar story to Zonguldak also emerges with regard to capital investments at Yalta and Gurez WWTPs in Ukraine, where the construction/upgrading of Yevpatoria WWTP has started, and is planned for completion in the future.

Around 35% of the originally estimated capital investment has been spent until the end of 2005 and all investments were planned to be completed by the end of 2015. Additionally, new projects for many new points with different scope (WWTPs, waste management, reception facilities etc. (see **Annex II.3**) have been configured and included in the DABLAS list of projects or prioritized in national investment plans.

There is a need to revise the List of BS Hot Spots and as a starting point common standards and criteria (guidelines) for the identification of Hot Spots have been drafted (2007-2008) basing on the experience of Arctic, Baltic, Mediterranean and North Seas. The draft guidelines are under discussion at the moment together with the standards for water quality, discharges, biota contamination and sediments standards. The Black Sea coastal states are expected to report extended Meta data on all available municipal and industrial sources of pollution in the coastal zone. The data compiled will be used to update the list of hot spots, after having agreed the Guidelines and harmonised where possible the standards and definitions of Good Environmental Status.

Status of insufficiently treated or treated/untreated sewage is basically measured with the percentage of population connected to a public sewer system (WHO) and discharge of insufficiently treated waters or untreated waters. In the Black Sea region, rural population not connected to WWTP- varies in the range of 42-95% for different states whereas it is 0.3-34% for the urban population which is about 0-70% of the total population (**Annex II.17, Figure 3**).

### Regulation of point sources

#### *Regulation of point sources*

*35. In order to implement the Protocol on Land Based Sources to the Bucharest Convention and with a view to the gradual reduction of inputs of pollutants in general and the elimination of discharges of persistent pollutants of global significance (POPs) the following actions shall be taken.*

- a) Water quality objectives shall be harmonised on the basis of the uses of water (drinking water; bathing water; aquaculture, ports etc.). It is advised that the Istanbul Commission, upon the recommendations of its Advisory Group on Pollution Monitoring and Assessment, adopt such harmonised water quality objectives and where necessary standards by 2005. Furthermore, these objectives should be subjected to a comprehensive review every five years.*
- b) Procedures used for monitoring the actual discharge of effluent at point sources shall be harmonised. It is advised that the Istanbul Commission, upon the recommendations of its Advisory Group on the Control of Pollution from Land Based Sources, adopt such procedures by 2004.*
- c) Each Black Sea state shall endeavour to adopt and implement, in accordance with its own legal system, by 1999, the laws and mechanisms required for regulating discharges from point sources. The basis for regulating discharges will be a licensing system, through which the harmonised water quality objectives can be applied, and through which effluent charges, based on the polluter pays principle, can be levied.*
- d) Each Black Sea state will also endeavour to adopt and implement, in accordance with its own legal system, efficient enforcement mechanisms by 1999.*
- e) In order to secure the implementation of the actions agreed to in this paragraph, each Black Sea state shall ensure that the national agencies responsible for licensing, monitoring and enforcement are adequately staffed and that the necessary resources are available to them. Where necessary, training courses at local agencies will be organised.*
- f) Each Black Sea state will consider the introduction of policies in which polluters are made to pay for compliance. The application of environmentally friendly production processes or other innovative process which reduce inputs of pollutants may also be encouraged through economic incentives.*

At present status, water quality objectives have been proposed to be replaced with long-term EcoQOs for the Black Sea transboundary issues (TDA, 2007). They are developed within the new SAP (draft, 2008) with targets, indicators and terms of implementation.

In general, it can be stated that national laws and regulations are in place to control discharges from point sources (**Annex II.1**). Establishment of licensing-monitoring-enforcement-compliance mechanism has also been considered in national legislation or necessary improvements are underway. It is also stated in TDA 2007 that environmental policies in all six Black Sea Countries fully apply the "polluters pays" principle, based on laws, provisions, plans, procedures, standards to be met and prohibited activities. Also, enforcement powers are assigned to agencies, fines and other penalties are specified, and monitoring is promoted to ensure compliance.

The use of environmental friendly production (cleaner production) and the application of financial enforcement tools for the implementation of the regulations have been discussed before within this report under "Principles" and obviously they are all recognized by all the states.

### ***Vessel sources pollution***

#### *Vessel sources pollution*

36. *MARPOL 1973/78 shall be more effectively implemented by Black Sea states, especially with a view to giving effect to its provisions on Special Areas, by 2007.*
37. *Due to the rapid increase in traffic to Black Sea ports, the capacity of harbour reception facilities needs to be enlarged in order to comply with MARPOL Special Area requirements. Harbour reception facilities will be installed: for garbage by December 2007; for oil by December 2007; and for chemicals by December 2007. The use of these facilities shall be made compulsory. In installing harbour reception facilities close cooperation with the private sector will be pursued, the advice of the IMO will be requested, and the results of the study conducted by the BSEP and the European Union will be taken into account*
38. *A harmonised system of port state control will be established in the Black Sea region through the adoption of a Memorandum of Understanding on Port State Control. It is advised that the Istanbul Commission adopt such a Memorandum, upon the recommendations of the Advisory Group on Environmental Safety Aspects of Shipping, by December 1998 .*
39. *Black Sea states shall take the necessary steps to enable them to fully exercise their prescriptive and enforcement powers, in accordance with international law, in order to pursue the reduction of illegal discharges by vessels into the Black Sea.*
40. *A harmonised system of enforcement, including fines, will be developed for the Black Sea region. It is advised that the Istanbul Commission, upon the recommendations of the Advisory Group on the Environmental Safety Aspects of Shipping, adopt such a system by December 2007. The primary aim of this system will be to serve as a deterrent for illegal discharges and, where necessary, to exercise enforcement action against illegal dischargers.*
41. *Black Sea states will present a joint proposal to the IMO, in 2004, for conducting an in-depth study on measures to avoid any further introductions of exotic species into the Black Sea through the deballasting of vessels. Given the danger of such species migrating to other seas in the region, the coastal states of the Caspian and Mediterranean Seas will be consulted.*

All the BS states have signed and ratified either all the annexes of MARPOL 73/78 or only some of them (see **Annex I.1**).

Based on the requirements of the Convention, the provision of harbour reception facilities is considered to be of critical importance and it is required to establish these facilities for oil, garbage and chemicals by all the BS states until the end of 2007. The status of these activities is not yet at the satisfactory levels although there are improvements in all countries. There are also mid-term plans for improvements. An example is the Strategy for the Development of the Transport Infrastructure of the Republic of Bulgaria by the Year 2015 which includes planning for improving port reception facilities for collection and treatment of wastes from ships and ports in accordance with the requirements of Directive 2000/59 of the EC after 2007.

Port Reception Facilities development is reported to the BSC using new Data Base developed on the basis of IMO Reporting Format. According to the data available for 2007 in Bulgaria there are 6 PRF for oily water and garbage, with the capacity of more than 150 000 t per year. The capacity of the Bourgas Port to accept delivered wastes has increased around 4-fold from 2002 to 2006 as reported in ESAS AG Annual Report (2007). Two new oily water reception units were also planned for two Georgian Ports in DABLAS (Regional Gap Analysis, 2007, Table 5), waste barge in all ports, ballast reception facilities in Batumi and only ballast barge in Poti are available. In Romania, harbour reception facilities are at a good level, available in the ports for oil, garbage and bilge water and there are plans to extend and improve them. In Russian Federation, all ports (5 ports) have reception facilities for the collection of ship's wastes: oil polluted waters and sludge, garbage, waste waters, rest of cargo (as mentioned in the National Gap Analysis report and the ESAS AG Report, 2007). According to the ESAS AG Annual Report of 2007, 4 new facilities were put into force in 2007 in Turkey for delivery of wastes, and totally 8 port reception facilities are in operation currently. The present status of port reception facilities reported to BSC



#### 4. Policy Actions

is presented in **Annex II.4**. The need to establish a harmonised fee/cost recovery system on ship-generated waste in the Black Sea region is well recognised.

A harmonized system for port state control has been established through a MOU signed by the governments of all the member states. With this tool, common procedures for inspection of the ships have been settled for the region and the system is efficiently operating. The inspection data has been reported by the Black Sea coastal states and the number of inspections for the last 4-6 years showed an increasing trend in Bulgaria and Turkey (**Fig.4, Annex II.17**). According to these reports, the most intensive inspections have been conducted in the Russian Federation.

An agreed/harmonised enforcement system for the region to avoid discharges has not been achieved and the illegal discharges have not been avoided in the BS even though they are completely prohibited and all the states use sanction systems.

EU Directive 2005/35/EC (7th September 2005) on sanctions for ship-source pollution is in place in **Bulgaria** and **Romania**. In **Georgia** since 1995 special Regulations (amended in 2006), approved by the Ministry of Environment of Georgia have been in force. The Regulations establish a varied scale for calculation of the compensation for the damage occurred. In 2002 the Law of Georgia "On Administrative Delinquencies" was amended, in accordance with which a penalty of 65000 GEL (appr. 40 000 USD) is placed for any act of pollution from a vessel (irrespective of the size). At present moment a scheme "penalty (65 000 GEL) + compensation" is used. Pollution fines for all kinds of illegal discharges are established in **Ukraine** by the decision of the Cabinet of Ministers of Ukraine 03.07.1995 No484 and by the administrative code of Ukraine 07.12.84, 8073-X, art.59-1. In Turkey there are administrative fines identified for cargo ships, tankers and other kind of vessels that might discharge oil and oil derivatives (crude oil, fuel, bilge, sludge, slop, refined products, oily wastes etc.), contaminated ballast waters, waste or domestic wastewater and for hazardous substances and waters discharges the fines are 10-fold higher than for oil pollution.

In **Russia** the sanction system is based on the following penalties imposed for infringement of the MARPOL convention:

Type of violation	Fines (in & Sterling)		
	Max	Min	Average
1. Illegal discharge	1086	32	559
2. Oil Record Book	217	22	119.5
3. IOPP Certificate	65	22	43.5
4. Other	1086	32	559

Regarding the issue of ballast water exchange (deballasting) to avoid the introduction of invasive species, a systematic management plan is applied only in the Russian Federation and all rules on management of Ships' Ballast Waters are included in the Collection of obligatory orders on the sea trading port of Novorossiysk. Since 2004 in the port of Novorossiysk the Authorities carry out on a voluntary basis: Tool control of replacement of ship ballast; Monitoring of biological pollution of ballast waters dumped in port areas (deballasting is allowed 12 n.m away from the port); Complex ecological research of plankton (23 stations) together with the Institute of Oceanology and Oceanography of the Russian Academy of Science.

A comprehensive project for the development of the management plan in Turkey has been nearly finalized. Regular monitoring of ballast waters was planned in Romania and Bulgaria, but not in place so far. Unfortunately, this is a core gap for the management of transport related environmental damages in the region., Harmonization of ballast waters rules is still under discussion in the frames of the Black Sea Commission work plan and upon availability of financial support.

The IMO Convention on the Management of Ballast waters and sediments has been adopted by consensus in London in 2004, but not ratified by any of the BS States yet. Due to activities in the framework of the GloBallast Programme (2001- 2007) and the Black Sea Conferences on Ballast Water Control and Management, a ballast water related Regional Task Force (RTF) was implemented to minimize the transfer of harmful aquatic organisms and pathogens in ships' ballast water. Ballast water management was also incorporated in the revised Strategic Action Plan of the Black Sea which is open for adoption at a Ministerial Meeting.

The present status of ballast water management requirements in the Black Sea countries is summarized in **Annex II.5**. The level of existing national ballast water management requirements varies substantially within the Black Sea countries, i.e. a harmonized and agreed upon uniform approach is lacking. Most countries require ballast water reporting and follow the IMO Assembly Resolution 868(20) which contains a ballast water reporting form. Ballast water reception facilities are available in the Georgian ports Batumi and Poti, but it remains unclear if these are only in use for ballast water carried in empty cargo holds of oil tankers. Countries that implement ballast water management rules require exchange for ballast waters originating outside the Black Sea before entering the Black Sea or inside the Black Sea. In the Russian port Novorossiysk non-compliance with BWE causes delay and/or penalties.

### ***Pollution from dumping***

#### *Pollution from dumping*

*42. A total ban on the disposal of municipal garbage in marine, shoreline and estuarine areas shall be imposed by December 1996. Each Black Sea state shall develop a plan setting out the manner in which comprehensive enforcement of the ban will be attained by December 1999 .*

*43. Illegal dumping operations in the Black Sea are a matter of concern. Black Sea states, individually and jointly, shall take measures to control any dumping activities that may take place.*

*44. Black Sea states, through the Istanbul Commission and in accordance with article 3 of the Protocol on Dumping to the Bucharest Convention, shall define concentration levels for trace contaminants in dredged spoils, by 2005.*

*45. Black Sea states shall consider amending the Protocol on Dumping to the Bucharest Convention, in accordance with the London Convention 1972, including its subsequent amendments.*

Dumping of any type of solid waste randomly in coastal waters etc. is prohibited in all the BS countries and the necessary regulations are available to control illegal dumping activities whereas there are no regional measures to control dumping activities in the BS therefore the reporting on the illegal dumping still should be developed. The Protocol on the Protection of the Black Sea Marine Environment Against Pollution by Dumping (1992) which is ratified by all the countries is the only legal instrument for the region at the moment which is basically based on a permit system to control dumping activities. Dumping of any type of hazardous substances is prohibited. However, this Protocol is rather outdated and upon consultation of BSC with IMO the London Protocol will be considered for adaption by the Contracting Parties. If the IMO Guidelines for implementation of the London Convention and Protocol could first be adapted to the regional conditions and later approved by the Black Sea Commission, this would avoid the lengthy and costly procedure of amending the Black Sea Dumping Protocol.

Dumping of dredged spoils is allowed by the Protocol only if the limits of its Annex I contaminant concentrations in the dredged material are not exceeded. Following the recommendations of the AG ESAS the development of limits to Annex I is considered as an outdated approach and full implementation of EIA procedure and proper monitoring were advised in line with IMO recommendations.

According to the recent annual reports of ESAS AG (2006, 2007), which are based on annual reporting of the Black Sea coastal states, volume of dredged spoils dumped into the Black Sea by the coastal states shows increasing tendency (See **Annex II.17, Fig. 5**). The increase in volumes obviously may cause silting of the Black Sea bottom and valuable habitats destruction, if necessary precautionary measures will not be undertaken. This is a vital issue especially for the protection of shallow waters.

The official dumping sites reported to the BSC are presented as of 2006 in **Annex II.6**. Dumping is reported more or less properly by Romania, Russian Federation and Ukraine (**Fig. 5, Annex II.17**).

Guidelines on Management of Dredged Spoils in the Black Sea coastal states were drafted (based on OSPAR Guideline) and recommended by the BSC for testing in the BS States. Upon testing, the Guidelines will be further improved and adopted by the Black Sea Commission

### ***Waste management***

#### *Waste management*

*46. The Black Sea coastal states will cooperate in developing and implementing environmentally sound waste management policies, giving due consideration to waste minimization, recycling and reuse.*

National laws/regulations for waste management are in place in the Black Sea coastal states. Only in Georgia, there is no specific legislation on waste management, a new one is currently being drafted but has yet to be enacted. The current draft contains references to the listing and classification criteria for waste and hazardous waste set out in the Basel Convention as well as in the EU Framework Directive on Waste.

Environmentally sound waste management techniques (sorting, recycling etc.) have been usually integrated in the waste management policies in almost all the countries where the use of landfills (**Annex II.6.1**) has been the only common application at the present status. In Bulgaria and Romania, landfills have been strictly regulated with EC norms. There is considerable progress in organization of new landfills in Turkey and Ukraine. In the EU Approximation Strategy of Turkey (2006), reduction of solid waste production has been considered as the major approach for the waste management and necessary legislative arrangements and development of plans/projects are under way to minimize wastes and use appropriate landfill operations.

By the rough estimate of BS TDA over 100 landfills (**Annex II.6.1**) exists at the Black coast of which around 60 % are authorized. Taking into account the importance of the adequate waste management in coastal areas the BSC intends to strengthen its work in this direction

The Marine Litter (ML) problem in the Black Sea region has been extensively studied in 2006-2007 and continues being in the focus of efforts to tackle this kind of pollution. In 2007 a first assessment was published by the BSC with the financial support of UNEP: MARINE LITTER IN THE BLACK SEA REGION: A REVIEW OF THE PROBLEM. The report evaluates existing data, policies, activities and institutional arrangements, proposes actions to further deal with the problem. Marine Litter Action Plan has been drafted and widely used in the SAP 2008. The whole plan needs to be adopted in the region as well. UNEP Guidelines for monitoring and assessment of ML (when published) will be recommended to the Black Sea Commission for adoption.

### ***Transboundary movement of hazardous wastes (HW)***

#### *Transboundary movement of hazardous wastes*

*47. By 2006, Black Sea states, through the Istanbul Commission, and in accordance with Resolution 1, adopted at the Diplomatic Conference on the Protection of the Black Sea Against Pollution, shall complete and adopt the text of a Protocol to the Bucharest Convention concerning the transboundary movement of hazardous wastes and cooperation in combating illegal traffic thereof.*

The Protocol on Cooperation in Combating Pollution of the BS Marine Environment by oil and other harmful substances in emergency situations is the only tool of the BSC to deal with transboundary movement of hazardous wastes. A Contingency Plan for the Black Sea was formed as an Annex to the Emergency Protocol (<http://www.blacksea-commission.org/main.htm>) which was elaborated in close cooperation with IMO and OSPRI (Oil Spill Preparedness Regional Initiative). The Contingency Plan (Part I, Oil Pollution) was signed by the Contracting Parties Bulgaria, Romania, Turkey and Ukraine

However, a dedicated Protocol concerning transboundary movement of hazardous wastes and illegal traffic does not exist. In order to follow transboundary movement of hazardous wastes in the region, it is necessary to identify priority actions in this direction in cooperation with IMO and Basel Convention and establish cooperation with the relevant stakeholders. Preliminary arrangement for Feasibility Studies on trans-frontier movement of hazardous wastes is high on the agenda of the Black Sea Commission for its development. Bulgaria, Russian Federation and Turkey have ratified the Basel Convention and the other BS states are in the accession period. Further promotion of the Basel Convention in the region,



and efficient implementation of it by all parties could be sufficient to control the transboundary movement of HWs.

A pilot project on Vessel Traffic Oil Pollution Information System has been initiated under BSERP and was finalized by the end of 2007 (See **Appendix II**, Final Report, summary). The developed Information System might be a very useful tool for the region in controlling hazardous cargo as well. The need in Automatic Information System data exchange is recognized and first steps to achieve it undertaken. Transportation of hazardous substances (long-term trend) via the Istanbul straight is presented in **Figure 6.B, Annex II.17**.

### **Contingency Planning and emergency response**

#### *Contingency planning and emergency response*

*48. A Black Sea Strategy for contingency planning and emergency response shall be developed. It is recommended that the Istanbul Commission, upon the recommendation of its Advisory Group on the Environmental Safety Aspects of Shipping, adopt such a Strategy, by December 1997. This Strategy should provide a basis for ensuring that the contingency plans developed within Black Sea states are sufficiently coordinated. It will also serve as a basis for the development of the regional contingency plan.*

*49. National and local contingency plans, covering both vessels and offshore installations, shall be improved and, where appropriate, adopted, by 2008. The responsibilities and obligations of governmental agencies in the event of marine emergencies shall be clearly defined. National contingency plans shall be developed in accordance with IMO guidelines, as well as other relevant international instruments, including the Black Sea Strategy for contingency planning and emergency response.*

*50. A Black Sea Contingency Plan shall be adopted. It is recommended that the Istanbul Commission, upon the recommendations of its Advisory Group on the Environmental Safety Aspect of Shipping, adopt such a plan by 2009. The Black Sea Contingency Plan should address the compatibility of: emergency equipment, reporting forms and oil spill data; classification of the scale of spillage's; methods for evaluating the sensitivity of the coast to hazards; and spill decision support systems, including models for forecasting oil movements. In addition, regionally coordinated national classification and risk assessment systems shall be developed.*

*51. In order to ensure rapid and effective action by national emergency response agencies, each Black Sea state, in cooperation with the private sector and, where appropriate, with international and bilateral agencies, shall ensure that their own national agencies are adequately staffed and that the necessary resources are available to them.*

*52. Close cooperation shall be sought with the shipping, oil and gas sectors in order to ensure that, to the extent possible, the cost of developing and implementing contingency plans are born by these sectors.*

The Black Sea Contingency Plan (response to oil spills, CP) to the Protocol on Cooperation in Combating of Pollution of the Black Sea by Oil and other Harmful Substances in Emergency Situations was signed in 2003. Three countries are parties to the Plan, however, it has been commonly accepted as a fully operational document in the region by all the states and is being implemented. The second part of the plan (for chemicals) will be developed at a next stage. The Annexes of the CP is under regular update. They are as follows:

- Directory of competent national authorities, contact points, emergency response centres, national on-scene commanders and other relevant addresses;
- Maps showing possible sources of pollution, environmental sensitive areas, priorities for protection;
- Communication System;
- Directory of response personnel and inventory of response equipment, products and other means which each party might offer as assistance in case of the activation of the Plan;

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The BSC assists in organising professional trainings, courses and workshops in cooperation with IMO, JRC, OSPRI, etc., supports pilot projects and feasibility studies, and undertakes harmonization of strategies in combating oil pollution at the regional level. Regional drills (BRAVO, DELTA, etc) take place regularly and successfully. The DELTA exercise SULH 2007 (Oil spill preparedness together with Search and Rescue operations) is a good example of this sort of cooperation for the Black Sea emergency response jointly organized by the BSC-ESAS AC/AG, private sector and national authorities. Hosting country was Turkey with a main contribution to the success of the exercise. Regular BRAVO exercises are carried out on a quarterly basis and rotation principle, DELTAs are every two years.

Harmonization of dispersants use in the region is initiated.

Workshops, seminars, courses in 2007 held were as follows:

- Integration of international resources during large oil spills.
- Deployment of equipment.
- Use of dispersants - regional and workshops in Georgia and Turkey.
- Aerial Surveillance Workshop

Workshop and training course on Satellite Monitoring and Assessment of Sea-based Oil Pollution in the Black Sea was carried out in Istanbul, 13 - 15 June 2005, in cooperation with JRC.

Romania and Bulgaria participate in CleanSeaNet.

National and local contingency plans have nearly been developed in all of the countries and there are ongoing efforts to complete/update them. The applications at the national level are summarized in **Annex II.7**.

Guidelines for reporting oil spills and Guidelines for oil spill exercises under the Black Sea Contingency plan have been drafted, tested and submitted to the approval by the BS Commission.

In order to better control and manage the oil spills that may happen in the Black Sea coastal and open waters sensitive areas at national territories and offshore waters have to be identified and mapped. There are limited information and studies at the national level, and the situation is even worse for the offshore areas. There is still a need to identify them taking into account the currents, spawning grounds, migratory routes of the anadromous fish species and dolphins, valuable habitats and other areas vital for the Black Sea ecosystem or human health (15th ESAS AG Meeting Minutes). Sensitivity maps were produced in MARPLOT with the support of BSERP in 2005, however, they require further elaboration and adoption at the national levels. These maps show possible sources of pollution, environmentally sensitive areas and priorities for protection of coastal areas.

The regional cooperation is also being strongly supported by OSPRI which is an initiative of the International Petroleum Industry Environmental Conservation Association and represents an excellent example of public /private partnership.

The numbers of oil spills reported by the Black Sea coastal states for the period 1996-2006 are presented in **Annex II.8 & Annex II.17, Fig. 6A**. Between 1993 and 2002 a total of 580,000 tones of oil were spilled into the Black Sea in more than 470 incidents (<http://www.newscientist.com/article/dn4153-map-flags-up-oilspill-black-spots.html>). In the 1990s the average input of oil from accidents was 136 t/y, and the total input was estimated at 110.8 kt/y (including domestic, industrial, rivers, as the Danube river input was 53.3 kt/y, Black Sea Pollution Assessment, eds. L. Mee and G. Topping, UN Publication, New York, 1999). In 2002-2006 the number of accidents decreased considerably, up to 154 for the whole period and all states, and the average accidental input of oil was estimated at 99.93 t/y.

### Assessment and monitoring of pollutants

#### *Assessment and monitoring of pollutants*

53. A "State of Pollution of the Black Sea" report will be prepared and published every five years, beginning 2006. It will be based on the data collected through the coordinated pollution monitoring and assessment programmes.

54. A Black Sea Monitoring System, based upon biological effects measurements and measurements of key contaminants, will be established in compliance with the Bucharest Convention. It will consist of the integration of obligatory national monitoring programmes, to be included in the National Strategic Action Plans, and an independent quality assurance system. It is advised that the Istanbul Commission develop such a quality assurance system through its Advisory Group on Pollution Monitoring and Assessment, by 2005.

55. A uniform measurement technique for bathing water quality with a common quality assurance support mechanism shall be developed. It is advised that the Istanbul Commission, upon the recommendations of its Advisory Group on Pollution Monitoring and Assessment, develop this uniform measurement technique by December 1997. Transparency shall be encouraged through the publication and free exchange of data from bathing water quality measurements on at least an annual basis.

56. Data regarding actual and assessed contaminant discharge measurements for point sources, rivers, and, where possible, diffuse sources, shall be compiled and freely exchanged beginning 2002 on an annual basis. It is advised that the Advisory Group Control of Pollution from Land Based Sources make these compilations in future.

The State of the Environment Report (SoE) of the Black Sea was published in 2002 by the BSC. The aim of the report was to analyze the pressures and trends in the Black Sea for 1996-2000. The 2nd SoE Report has been finalized in 2008 to cover the period 2001-2005 and presented at the Meeting of the Contracting Parties. It contains chapters on the general geochemistry and oceanography of the Black Sea, eutrophication and pollution, climate change impact, biodiversity, fishery and socio-economy, etc. prepared by 48 experts. Together with the TDA 2007, the SoE report 2008 gives full picture of the state of the Black Sea, pressures and trends, with a special emphasis on the basic transboundary problems - eutrophication, pollution, biodiversity change and overfishing. The main message of both reports is that we gradually improve our knowledge about the loads of pollutants stemming to the Black Sea from different sources, their levels in the water and sediments of the Sea, however, quite poorly knowing so far the level of contamination of biota. The contamination of biota is regularly monitored only by Romania since 2003 (**Annex IV and V**), but only in mussels for trace metals. Since 2001 the levels of major pollutants such as trace metals, pesticides, detergents, radionuclides, phenols and hydrocarbons in water have been more often below the maximum allowable concentrations (MAC), unlike previous periods when they were exceeding frequently the MAC in coastal waters. In impacted areas, such as bays and estuaries, ports and other marine facilities, recreational areas and in the vicinity of large cities the pollutants appear in higher concentrations. Detergents do not accumulate in sediments. All the other pollutants are of several orders of magnitude of higher concentrations in shelf sediments than in water. However, decreasing trends were recorded during the last years in comparison with the 1990s. The sediments of the open region of the Black Sea exhibit no indication of significant pollution, known also from previous investigations performed in the 1990s, with perhaps the exception of zinc.

**A Black Sea Monitoring System:** The Black Sea Integrated Monitoring and Assessment Programme (BSIMAP: 2001 first mentioned, final version adopted in 2006, 13th Meeting of the Commission, see <http://www.blacksea-commission.org/main.htm>, Information & Resources, with outlined optional and mandatory parameters, planned to act in the period 2006-2011) seeks to maximize the use of historical data from previously established monitoring sites for trend analysis, supported by new additional sites to improve the assessment of the current chemical/ecological status of the Black Sea.

**Black Sea Information System (BSIS):** collection of nationally reported data in the fields of land based sources, conservation of biodiversity, fisheries and other marine living resources, environmental safety aspects of shipping, integrated coastal zone management and pollution monitoring and assessment started

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in 2001. Special reporting templates (Excel Format) were developed at that time which were later several times amended to better specify information needs for the decision making of the Black Sea Commission and the elaboration of the indicators necessary for assessments of Black Sea state and efficiency of the implemented policies.

The main purpose of the BSIS and BSIMAP is to provide reliable and consolidated data for 'state of the environment' reporting, 'impact assessments' of major pollutant sources, 'transboundary diagnostic analysis', SAP implementation reports (BSSAP process). The sites, parameters and monitoring frequencies also reflect data requirements for compliance with relevant national and international legislation and agreements.

Number of national monitoring sites included in the BSIMAP, with an indication of spatial coverage:

<b>Territorial waters</b>	<b>Pollution Hot Spots</b>	<b>Sampling Sites</b>	<b>Length of coast, km</b>	<b>Average distance (km) represented per sampling site</b>
Bulgaria	9	5	300	60
Georgia	6	5	310	62
Romania	5	21 (34 in the National Monitoring System)	225	17
Russian Federation	4	5	475	95
Turkey	10	3 (69 since 2007)	1400	466 (20 since 2005)
Ukraine	9	14	1628	116

The most relevant international policies and agreements in terms of monitoring the Black Sea are considered to be not only the SAP for the Rehabilitation and Protection of the Black Sea, but attempts have also been made to harmonize approaches and principles with the Water Framework Directive (WFD) and the proposed Marine Strategy Framework Directive which are obligatory for Romania, Bulgaria and seriously undertaken by Turkey in the accession process. The WFD requires Member States to identify water bodies, to establish type-specific reference conditions, to identify quantitatively the good quality status of an ecosystem, and this is already performed in Romania and Bulgaria. The Black Sea states identify their waters as: transitional, coastal and marine. Ukraine specified 3 stations in marine waters in the frames of the BSIMAP, all other states have stations reported to the BSC only in coastal and transitional waters. TU has not specified the nature of stations sampled. Occasionally Russia reports a transect up to 100 miles.

The Black Sea coastal states agreed and implement in the frames of the BSIMAP:

- **standardised sampling, storage, analytical techniques, assessment methodologies and reporting formats.** Standardised manual for nutrients analyses was written (based on Regional Seas Manual) and a series of workshops were held during 2005 to promote harmonization of techniques and capacity building. The process continues further developing, in 2007 the methodologies for identification of trace metals in sediments, biota and water were harmonized. IAEA (Regional Seas) Manuals will be used in the region. In 2008/9 the PMA AG will address the monitoring and analysis of pesticides.
- agreed **QA/QC** procedures.
- intercalibration and intercomparison exercises.

Almost all Black Sea coastal states adopted BSIMAP and integrated it into their national monitoring and assessment programs, with some difficulties still to be overcome in Georgia and monitoring efforts are not yet focused within a programme. In the Russian Federation an integrated state monitoring programme has been implemented since 2003. Romania and Turkey support observations of all mandatory parameters in the frames of the BSIMAP at a high number of stations and the frequency of sampling in Romania is in agreement with the WFD and BSIMAP.

In order to ensure data quality, in 2004, first Black Sea quality assurance intercomparison exercise for metals, nutrients, chlorinated pesticides and petroleum hydrocarbons was undertaken by seven

laboratories reporting data to BSIMAP. Since that time these exercises became regular for sediments, sea water and recently planned for biota. These exercises were achieved with the financial support of BSC and through technical cooperation with IAEA/MEL and QUASIMEME.

A uniform strategy for bathing waters is being elaborated with attempts undertaken in 2003 and later in 2007. Manual on Bathing Water was initially developed in 1996 by the Black Sea Environmental Project GEF/UNDP BSEP, however during the Bathing Water Experts Workshop in 2007 it was found outdated. Harmonization of methodologies and assessments of compliance was generally agreed, WHO guidelines were recommended for consideration, a decision was taken to develop bathing water quality classification matrix similar to the Mediterranean model for the Black Sea region. Beach profiles are expected to be developed soon in the region and compliance with regulations to be communicated via the WEB page of the BSC.

Black Sea coastal states annually deliver data (see **Annex V**) on sources and inputs to the BSC- before 1st of August, for the previous year by specially developed formats that are regularly improved and recently data quality control was introduced as an integral part of the work with the BSIS. BSC Advisory Groups and Activity Centres play crucial role in delivering, validating and assessment of the reported data and information. In 2008, revision of the existing data base is undertaken with the participation of the Activity Centres and Chairmen of AGs.

Important component of BSIS is the linking of spatial data available in GIS format (Black Sea GIS) with data from national reporting (monitoring, sensitivity zones, land based pollution sources, etc.). Additional data, such as designated protected areas, land use of the coastal zones are currently being digitized/reprocessed based on information presented by the countries. Nationally reported data was made accessible on the web by developing on-line BSIS divided into sectors. However, the on-line BSIS still requires improvement of functionality and refining.

### **Living resources management**

#### *Commercially exploited resources & sustainable aquaculture*

57. Fish are an integral part of the marine ecosystem, fish stocks thrive in a non-polluted and protected ecosystem and the marine ecosystem profits from properly managed fishing activities. The measures to reduce pollution and to protect biological diversity, habitat and landscape, as agreed upon in this Strategic Action Plan, are therefore pre-conditions for the restoration of commercial fisheries in the Black Sea. In addition, spawning and nursery grounds require special protection.

58. In order to rehabilitate ecosystems, which are of particular importance to Black Sea fisheries as a whole, Phyllophora fields and other critical nursery areas will receive special protection, spawning areas of anadromous species will be restored, and coastal lagoons will be rehabilitated. By 2003 each Black Sea state will develop at least one pilot project which will contribute to the restoration of areas vital to the recovery of Black Sea fish stocks.

59. In order to rehabilitate the Black Sea ecosystem and achieve sustainable fisheries in the Black Sea, fisheries management policies need to be enhanced and fishing effort needs to be adjusted to the status of the stocks. In this regard, the Black Sea coastal states are expected to expedite the adoption of the Fisheries Convention as soon as possible so as to develop a fisheries management system which consists of the following components: regular regionally coordinated stock assessments; national fishing authorisations for all Black Sea fishing vessels; a regional licensing system; and a quota system. In addition, enforcement of fisheries regulations urgently needs to be improved. These measures and others, which are required to attain more sustainable fisheries in the Black Sea, should be taken in close cooperation with the fishing sector.

71. Sustainable aquaculture should be stimulated, amongst other things, through the conduct of feasibility studies. In parallel, legislation enabling the regulation of aquaculture should be developed. Such legislation should ensure that aquaculture itself does not present a threat to the environment and should address issues, such as, the location and density of cages, releases of commercial strains, imports and releases of exotic species, quarantining and matters of hygiene. Moreover, aquaculture projects shall be subjected to environmental impact assessments in which the potential effect of the activity upon biological diversity are given careful consideration.



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The decline in natural resources of the Black Sea, particularly the decline in fish stocks, (and the lack of a regional fisheries management system and the incomparable national practices), has been a high priority transboundary issue of the Black Sea to be handled (TDA 2007). The national gap analysis reports are also highlighting the problem in the reduction of fishing capacities and problems of the fishing sector. Commercially important marine living resources have been greatly affected by alien species introductions, eutrophication, over-fishing and habitats change/damage (SoE Report 2008, <http://ps.blacksea-commission.org/kiyevmeeting/soe.html>). The illegal fishing and use of destructive harvesting techniques, lack of cooperative management of fisheries in the Black Sea and eutrophication are recognized as the most significant threats for fish resources. In the last report of the FOMLR AG (2007), it is also stated that the most commercially important species (anchovy, turbot, horse mackerel, whiting etc.) are at the state of overfishing whereas the stocks of sprat, mullets and mussels have improved during 2000-2005. The long-term dynamics of catches of pelagic and demersal fish in the Black Sea is given in **Annex II.17, Fig. 7**.

The SoE report 2008 demonstrated that at present Danube populations of anadromous sturgeons and Pontic shad as well as whiting and turbot in the waters of Turkey have been overfished. In the waters of Turkey the state of striped mullet has also deteriorated due to the increasing fishing pressure. In 2000 - 2005 the state of anchovy, sprat, and aboriginal mullets and mussels stocks improved as compared with previous five-seven year period, horse mackerel stock remained depressed. Eventhough catches of pelagic fish (mostly anchovy and sprat) have increased since mid-90s, the levels are still half of the amount of catch values of mid 80s (TDA, 2007). Demersal fish catches have decreased considerably after 2000. The highly variable stock dynamics and the lack of effective control over the fisheries make stock collapses quite likely in future.

**Annex II.9** presents a summary of national efforts on the restoration of costal lagoons and spawning grounds undertaken in 2001-2005.

Regarding the regional fish stock assessment, the FOMLR AG continues the work on elaboration of regional stock assessments using agreed methodologies. Assistance will be sought from the European Union for the assessment of the Black Sea fish stocks as soon as harmonization of methodologies will be completed. A harmonized methodology for Anchovy was elaborated in 2007 and the Group is soon to finalise the evaluation of the stock of anchovy. BSC has also supported the establishment of a Stock Assessment Operational Group, which ToR included improved collection of data for stock assessments, analysis of data/information and estimation of marine fish stocks, and elaboration of recommendations for sustainable management of stocks.

The SoE report (2008) and some recent publications show that there are changes in the spawning and nursery grounds to the great extent related to climate change and level of recovery of the Black Sea.

SAP Article 59 underlines the need for the rehabilitation of the Black Sea through the establishment of sustainable fisheries for the region and the development of a fisheries management system. A draft legally binding document (LBDF) has been prepared for this purpose and the Sofia Declaration has noted (2002) the intention of the BSC to finalize the legal text to be adopted for the region. The Draft LBDF is based on precautionary and ecosystem approaches. The draft LBDF proposes provisions on fish stocks and fishing capacities (adjustments for fishing fleet and gears), protection of marine mammals, prevention of introduction of non-indigenous species and as well proposing a new organizational structure while defining the role and responsibilities of it. Upon final agreement on the type of the legally binding document in fishery in the BS region further improvement of its text will be undertaken before signature by the contracting parties.

In the frames of the BSERP project maps of fish spawning areas and nursery grounds were elaborated.

The national legislation/policy tools in the fisheries sector has been summarized in **Annex II.1** of this report. According to the nationally reported data, complete ban and seasonal ban on commercial fishing are applicable in all the BS states. Total allowable and permissible catches (TAC) are not applicable only in Turkey. Minimum admissible size, prohibited fishing gears and allowable mesh size for nets are also applicable in all the countries whereas fishing free zones present in Georgia, Romania, and Russian Federation and Ukraine. National Strategic Plan for Fishing and Aquaculture is available in Bulgaria and Romania for 2007-2013 and they implement the European Common Fisheries Policy.

**Annex II.10** shows the total abundance of Russian sturgeon in 1988-2005 as well as its official and unreported catch. It is obvious that both the abundance and catch capacity has considerably decreased until 2005.

**Annex II.11** provides information on the release of young commercial fish to the Black Sea to achieve recovery of stocks. For example, in Turkey re-stocking of *P. maxima* was applied, however, it seems that there are not any more efforts for other species. Also in Bulgaria, Romania and Ukraine there has been continuous efforts for few species revitalization.

Aquaculture activities have developed in production capacities both at inland and marine farms in Turkey. Similar trends have developed in other BS countries after 2001 (**Annex II.12**).

### **Biological Diversity Protection**

#### *Biological diversity protection*

60. *The text of a Protocol on Biological Diversity and Landscape Protection to the Bucharest Convention shall be developed and adopted. It is advised that the Istanbul Commission adopt this Protocol by 2002, upon the recommendations of the Advisory Group on the Conservation of Biological Diversity. The aim is to present the Protocol to the 2001 Ministerial Meeting for signature, after which governments can initiate the national ratification process.*

61. *A regional Black Sea Red Data Book, identifying and describing endangered species, will be prepared and published by December 1998. It is advised that the work on the Red Data Book be coordinated by the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity.*

62. *With the aim of restoring populations of marine mammals the following measures shall be taken:*

*a) A ban on the hunting of marine mammals will be enforced by all Black Sea states with immediate effect.*

*b) Regular population assessments of marine mammals shall be conducted and the first assessment will be completed by 2005. It is advised that these assessments be coordinated by the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity.*

*c) The Centre for the Conservation of Biological Diversity in Batumi, Georgia, shall be provided with the necessary equipment in order to function as a regional rehabilitation centre for captive marine mammals.*

*d) National centres and sanctuaries for the rehabilitation of marine mammals shall be strengthened.*

*e) Consideration shall be given to modify fishing practices in order to avoid catching marine mammals, as by-catch, during normal operations. It is recommended that the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity and its Advisory Group on the Environmental Aspects of Management of Fisheries and other Marine Living Resources, develop a strategy for the reduction of by-catches of marine mammals.*

The Black Sea Biodiversity and Landscape Conservation Protocol was adopted in 2002 and signed by the countries except Georgia and Russia and ratified by Romania (is it ratified by Romania?), Turkey and Ukraine. A draft Strategy and Action Plan (BSBLCP-SAP) was also prepared for the implementation of the Protocol with targets/dates and a work plan was presented for 2005-2007 to be implemented by the BSC. Since 2003, the Annex 2: List of Species of Black Sea Importance and Annex 4: List of Species Whose Exploitation Shall Be Regulated, have been developed and according to the provision of the BSBLCP, they will be revised every 5 years. The Black Sea Commission has standardized regional methodologies for the collection and analysis of plankton and zoobenthos samples. Guidelines were developed (Annex II, 15) and widely used in the region. Inter-calibration exercise for zooplankton has been undertaken, the results are under evaluation

The three marine mammal (cetaceans) species of the Black Sea are classified as DD (data deficient) in the Red Data Book of the Black Sea (1999). They are included in Annex 2 of the BSBLCP as endangered

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species and in the same year the main gaps in conservation and research of them were jointly identified by BSC and ACCOBAMS and the need for a regional conservation plan was stressed. The lack of comprehensive information and data on commercial species, the health of population of marine mammals and human stress on the BS cetaceans has been the major gap for the conservation plan. The population state of the three Black Sea cetaceans is presented in **Annex II.17, Fig.8**. The Monk seal, considered extinct, was sighted in the Black Sea recently.

Assessments of marine mammals populations were undertaken regularly in different parts of the Black Sea in the period 2001-2005. However, data on population of cetaceans are not included in the BSIS yet. Besides, since 2004 cetaceans numbers are monitored in the SW Crimea near Balaklava, Ukraine - this area was identified by ACCOBAMS as a candidate area for pilot project in conservation and management. Funding for the region-wide cetacean survey is still being sought, also a project proposal has been developed in line with recommendations and methodology of ICW sub-committee. A List of Areas eligible for the protection of dolphins (Marine Protected Areas) has been elaborated during a special workshop (December 2006, Ref: <http://ps.blacksea-commission.org/bsc/online/docs>) which recommended improvements of the Marine Mammals component of the BSIS including by-catch and strandings, population dynamics, diseases, implementation of measures, etc.

Bans on direct catches of cetaceans are enforced in all BS states and in four countries there is also international commitment as being Parties to ACCOBAMS (commercial dolphin fishery was banned in 1966 in the former USSR (present Georgia, Russia and Ukraine), Bulgaria and Romania; and in 1983 - in Turkey; since then a number of improvements of national and international legislation have been undertaken in order to protect the Black Sea ecosystem, biodiversity and the cetacean populations, in particular).

The ACCOBAMS~Conservation Plan for BS Cetaceans, as a whole, is a great contribution towards the implementation of the Biodiversity Protocol concerning the issues with marine mammals. The Black Sea Commission initiated national consultations on the adoption of the ACCOBAMS~Conservation Plan for BS Cetaceans as a Plan for all Black Sea coastal states (the Russian Federation and Turkey are not Contracting Parties to ACCOBAMS), negotiations are in progress.

**Annex II.13** provides information on Dophlinaria existing in the Black Sea region, however, they are mostly commercial facilities, keeping dolphins in captivity, main activity -shows, and have no relation to protection of marine mammals in the Black Sea region.

Besides conservations efforts on the cetaceans of BS importance and increase in dolphins numbers, there are some other improvements in the BS ecosystem in the last years as mentioned in the SoE, 2008 report. Formerly "dead" areas of the NW Shelf are once again colonised by biota, with evidence of biodiversity continuing to increase. The pelagic ecosystem of western Black Sea coastal waters improved noticeably due to weakening of anthropogenic pressures. It is inferred by reduced nutrient inputs and fewer algal blooms, lower algal biomass, recovery of some algal populations, increasing plankton biodiversity, decreasing opportunistic and gelatinous pressures, and re-appearance of some native fodder zooplankton and fish species and increasing edible zooplankton biomass. The recovery of the benthic ecosystem is less evident.

However, the picture with the invasive species is still a threatening one. The regions shallower than 30-40 m depths still symptoms of some undesirable disturbances, the most important of which is exerted by the alien opportunistic species such as bivalve species *Mya arenaria*, soft-clam species *Anadara inequivalvis*, gastropod species *Rapana*. The number of registered alien species at the regional level amounts to 217 (parasites and mycelium excluded). Nearly half of them (102) are permanently established, and a quarter - highly or moderately invasive (20 and 35 species respectively). This high ratio of invasive aliens suggests a serious impact on the Black Sea native biological diversity, with negative consequences for human activities and economic interests. Between 1996 and 2005 a total of 48 new alien species were recorded, which represents over 22 % of all registered aliens. The majority belong to phytoplankton (16) and zoobenthos (15), followed by zooplankton (8), fish (5), macroalgae (3) and mammals (1) (Ref. National Reporting CBD AG Annual reports).

In the frames of the IMO GLOBALLAST Program in the BS region (2001-2004) Regional Action Plan to minimize the transfer of harmful aquatic organisms and pathogens in ships ballast water was drafted and its main recommendations were incorporated in the updated SAP2008.



### **Protection of Habitats and Landscapes**

#### *Protection of Habitats and Landscapes*

63. In addition to the actions referred to in paragraphs 57, 58, and 59 of this Strategic Action Plan, the following measures will also be taken to protect habitats and landscape in the Black Sea region.

64. In marine and coastal areas, and in particular in wetlands, new conservation areas shall be designated and the protection of existing conservation areas enhanced. In drafting their National Biological Diversity Strategies, Black Sea states shall take into consideration the integrity of the Black Sea system, by, for example, designating conservation areas which are of regional significance.

65. With a view to enhancing the protection of habitats and landscape in the Black Sea region, both national and regional regulatory instruments shall be improved through the following actions.

a) A Regional Strategy for Conservation Areas shall be adopted, and it shall be reviewed every five years. It is advised that the Istanbul Commission adopt the plan by 2004, and conduct the reviews, upon the recommendations of its Advisory Group on the Conservation of Biological Diversity. The plan, amongst other things, should address the following: priority locations which should be designated as conservation areas; priority locations where current measures for protection should be enhanced; objectives, standards and measures for the protection of conservation areas; and fund raising aspects.

b) Each Black Sea state, by 2000, shall endeavour to revise, and where applicable adopt, in accordance with its own legal system, national laws, regulations and planning instruments for the protection of conservation areas. These laws, regulations and planning instruments shall conform with relevant international instruments, including the Regional Strategy for Conservation Areas. The national instruments, amongst other things, should identify the responsible management authority and the responsible government agency; include procedures for the identification of conservation areas; require that management plans be developed for each conservation area; set standards for managing conservation areas; and, where appropriate, establish procedures for public participation and partnerships between governmental agencies and NGO's for the management of conservation areas.

The total surface of Black Sea marine and coastal protected areas by country has been lately presented in the TDA, 2007 (Table 3.6 of TDA) which indicated a significant progress in conservation of biodiversity in the Black Sea region, especially during 1990s. According to the statistics presented in TDA (2007), the largest MPAs were designated by Ukraine, while largest coastal wetlands and terrestrial areas were designated by Romania. In this analysis, there was no data from the Russian Federation. A more complete picture has been drawn including all the countries and presented in of **Annex II.17, Fig. 9**. Additional information on the present status of Black Sea PAs is also provided in **Annex II.14**.

As stated in the BSERP Final Report (2007), habitat status is a critical component of maintaining high levels of biodiversity within the Black Sea and the ecosystem(s) of the Black Sea are found to be seriously damaged and in need of legal protection. Those habitats most at risk include the neritic water column/bottom, coastal lagoons, estuaries/deltas and wetlands/saltmarshes.

At present, a regional strategy for conservation areas does not exist in the Black Sea. However, process of designation of marine and coastal protected areas is in development, based on the national strategies and plans available in all countries.

The increase of protected areas and the improvement of conservation of species, ecosystems and habitats, with particular attention to marine protected areas, and the management of them in a sustainable and environmentally sound way aiming at establishing the Black Sea Ecological Network are the core objectives of the draft BSBLCP-SAP targeting at:

- - enlargement of Black Sea Reserves taking into consideration the most important breeding, feeding and wintering grounds and migration routes of fish and marine mammals and birds,

#### 4. Policy Actions

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map them using advanced information technologies, and establish a regional mechanism for regular information flow between them.

- - preparation of Black Sea Guidelines for Establishing Marine and Transboundary Protected Areas
- - all protected areas have corresponding management plans and establishment of regular exchange of information between them;
- - The restoration and rehabilitation of damaged areas of previously high biodiversity value, including lagoons and spawning grounds, is also required by the BSBLCP-SAP.

In 2007 a special workshop took place jointly organized by the BSC PS and the EEA- European Topic Center on Biological Diversity. The Workshop produced a full list of Black Sea Habitats, on the basis of which the Annex 1 of the CBD Protocol will be finalised. Simultaneously two important projects run activities in relation to designation of MPAs in the Black Sea region - MATRA (EUCC-The Coastal Union) - The development of an indicative, ecologically coherent network of sub-tidal Marine Protected Areas (MPAs) in Bulgaria and Romania; and EuropeAid (Black Sea Environmental Collaboration Project) working on Marine Protected Area Policy and Strategy. On the request of the Black Sea Commission BSERP assisted and facilitated the process by development of different kind of mapping. The MATRA Project initiated a work which has to be enlarged to all the other BS states - identification of endangered habitats of Black Sea importance, which would need special protection. The need for transboundary MPAs was recognized and maps of areas eligible for designation were prepared. All these different maps together with the available Contingency Plan maps (sensitivity index, risk index) should be used to further proceed with the designation of MPAs in the region and later networking. The EuropeAid project drafted the needed policy document in support of the process and initiated case study in the Karkinitzky Bay.

Information on Black Sea habitats is presented in **Annex II.15**, including list of habitats critical to survival, reproduction and recovery of threatened flora and fauna species.

#### ***Sustainable Human Development***

##### *Environmental Impact Assessment*

*67. By 1998, all Black Sea coastal states will adopt criteria for environmental impact assessments and environmental audits that will be compulsory for all public and private projects. The coastal states will cooperate to harmonize these criteria by 1999 and where possible, to introduce strategic environmental assessments.*

Black Sea States implement EIA procedures and rules developed under appropriate national legislation (**Annex II.1**). SEA is also being considered by most of the countries where efficiently applied only in two European States at present. Both approaches were also dealt under "anticipatory actions" of the principles of SAP (Art.10) and discussed in the beginning of the report.

The EIA in transboundary context is currently under discussion in the Black Sea region. The inspired Convention in this activity, the Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO, 1991) has been ratified by 3 BS states (Bulgaria, Romania and Ukraine) whereas Russian Federation signed but not ratified the Protocol yet.

Two workshops were conducted for representatives of Black Sea coastal states for exchanging experience with experts on the Caspian and Baltic Seas within the context of environmental impact assessments for transboundary projects. The need for the preparation of Black Sea Guidelines on Environmental Impact Assessments for transboundary projects was emphasized and the ESPOO Secretariat was invited to assist in drafting the needed document.

***Integrated coastal zone management and sustainable tourism***

*Integrated coastal zone management and sustainable tourism*

68. In order to ensure proper management of the coastal zone, coordinated integrated coastal zone management strategies shall be developed for the Black Sea region. In order to attain this the following actions will be taken.

a) A Regional Black Sea Strategy for integrated coastal zone management shall be developed. It is advised that the Istanbul Commission develop such a strategy by 2005, upon the recommendations of its Advisory Group on the Development of Common Methodologies for Integrated Coastal Zone Management. The regional strategy should elaborate basic principles and methodologies for land- and water-use planning as well as for designing zoning systems. The methodologies and principles recommended in the regional strategy shall be taken into account when developing or reviewing national strategies and planning instruments for integrated coastal zone management.

b) Each Black Sea coastal state shall endeavour to adopt and implement, in accordance with its own legal system, by 1999, the legal and other instruments required to facilitate integrated coastal zone management.

c) Inter-sectoral committees for integrated coastal zone management shall be established at the national, regional and local levels of public administration, where appropriate, by the end of 1997. These committees shall design and implement national plans for integrated coastal zone management through participatory approaches.

69. Erosion and land degradation have important environmental and social impacts. Coastal erosion, due to the changed hydraulic conditions in many of the regions rivers, is a problem which has transboundary implications. Deforestation is another major factor contributing to land degradation. A survey of coastal erosion problems in the region will be conducted by 2005. It is recommended that the Istanbul Commission, through its Advisory Group on the Development of Common Methodologies for Integrated Coastal Zone Management coordinate the work on this survey. The survey should address the magnitude of the problem, including its economic implications; propose remedial actions, and include suggestions for pilot studies and demonstration projects.

70. Aquaculture and tourism are two areas considered to have scope for economic growth in the Black Sea and to benefit the region in general. In order to avoid environmental damage resulting from these activities, and particularly damage with transboundary implications, their development shall be managed along common environmental norms to be established by 2006. It is advised that the Istanbul Commission, with the support of its Advisory Groups, adopt these common norms and liaise, where appropriate, with the Fisheries Commission, once this body has been established, to adopt an industry code of practice.

72. Eco-tourism should be stimulated in the region, amongst other things, through the implementation of concrete pilot projects in Black Sea coastal states. In close cooperation with the tourist industry and the national tourism authorities, environmental codes of conduct and training courses in sustainable tourism will be developed. The tourism industry, both for the benefit of the industry and for the benefit of the environment, needs to be more adequately planned with a view to incorporating concerns such as those related to water supply, sewage treatment bathing water quality, the use of natural resources and resort development into newly developed projects from the beginning. Moreover, it shall be required that tourist development projects be subjected to environmental impact assessments.

A draft regional ICZM Strategy was prepared and Annex I of it presents proposals at national and regional levels for legislative improvements, creation of ICZM institutional framework, development of economic instruments, development of pilot projects at the local level, ICZM training and education and establishment of ICZM monitoring and reporting system. Clear guidelines of an ICZM approach have also been provided within the Strategy to the Black Sea countries. The updated SAP includes ICZM targets, such as: Further recognise and implement integrated coastal zone management principles into policies;

#### 4. Policy Actions

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Develop and disseminate information, training and education materials on ICZM in regional languages, referring to coastal and marine biodiversity conservation, Identify and make an inventory of Black Sea landscapes of high natural, historical, cultural and aesthetic value; Undertake preliminary regional assessment of coastal erosion, etc.

ICZM AG - BSC has conducted a survey among the BS States to measure the progress made from the year 2000 to 2005 in terms of "aspects of coastal planning and management", "availability of a framework as a basis of ICZM development", "most aspects of ICZM are in place and functioning" and "efficient, adaptive and integrative process embedded at different levels of governance". The evaluations provided by the countries at 3 levels; local, national and regional, for 31 specific question are presented in **Annex II.16.2**. During the mentioned time frame, none of the countries have shown constant and really effective political support for the ICZM process. Coastal planning and management aspects seem to be mostly in place in Bulgaria, Romania and Ukraine whereas less developed in other countries. The framework to carry ICZM forward is almost complete in Bulgaria and Romania, whereas absent in other countries. The improvement by time at the local and national levels is most pronounced in Romania, however, funding is a problem for all the countries to undertake actions on the coast.

Coastal erosion and deforestation have been dealt with national policies, plans and projects, however, a regional survey for Black Sea erosion was not organized due to lack of proper financing and interest of the international donors, including BSERP Nevertheless the Black Sea Commission will continue its efforts in improving cooperation for combating coastal erosion and deforestation based on the BEP and BAT.

A number of pilot projects for testing of ICZM methodology on spatial planning for ICZM were implemented in the Black Sea coastal states with financial support of international donors and based on the methodology drafted by the ICZM Activity Center, Russian Federation in 1999-2000 (**tested initially in the Russian resort town of Gelendzhik**) under the EU funded TACIS project. Within the EuropeAid project ("Technical Assistance to the Black Sea Environmental Program" 2002 - 2004) together with the regional ICZM Strategy, mentioned above, the following documents were also developed:

- Guidelines For Preparation of National Codes of Conduct For Coastal Zones of Black Sea States;
- ICZM Tools and Techniques (Best practices);
- Glossary of ICZM Legal Terms.

BSERP supported a pilot ICZM project in Turkey, *The Akçakoca District Pilot Project* (see final report, [www.blacksea-commission.org](http://www.blacksea-commission.org)), and it proved the methodology can be used successfully for the purposes of protecting, improving and sustaining an area within the context of **Integrated Coastal Zone Management**.

**EuropeAid project (<http://ecbsea.org/en/>) and its ICZM component in 2007-8:** The spatial planning methodology mentioned above so far has proven its value also in Tskhaltminda, Georgia. The maps produced with this methodology will be further refined and used for conflict resolution and illustration of opportunities for village development. A local ICZM plan can be expected for late autumn 2008.

An overview of regional activities in ICZM for the period 1993-2008 is provided in Annex II. 16.1.

## Conclusions

All principles stated in the SAP 1996 are observed in the Black Sea states. Undoubtedly, The Black Sea coastal States share a common desire for the sustainable management of the natural resources and biodiversity of the Black Sea and recognize their role and responsibility in conserving the global value of these resources.

According to the BS SAP 2008 the main challenges in the Black Sea region still remain unchanged: eutrophication, chemical pollution, including oil, biodiversity change, including alien species introduction and decline of living resources. The BS SAP 1996 implementation success was measured against the progress achieved in the region in tackling these major problems.

As before, the majority of underlying causes of nutrient pollution/eutrophication in the Black Sea are shared with those of chemical pollution and are grouped into five main categories, based around major sources:

- Municipal discharges
- Industrial discharges
- River loads
- Shipping/harbour operations
- Agriculture

Since 2001 Black Sea Integrated Monitoring Program has been adopted and Black Sea Information System developed. The main purpose of the BSIS and BSIMAP is to provide data for 'state of the environment' reporting, 'impact assessments' of major pollutant sources, 'transboundary diagnostic analysis' and SAP implementation reports (BSSAP process). The BSIMAP contains optional and mandatory parameters, seeking to maximize the use of historical data from previously established monitoring sites for trend analysis, supported by new additional sites to improve the assessment of the current chemical/ecological status of the Black Sea.

In 1996-2000 the focus in the region was placed on the identification of 'point sources', with a major attention on direct municipal/industrial discharges as sources of eutrophication and pollution. In 2001-2006 better understanding of river loads was achieved, with additional studies on likely contributions of different emissions to river loads. The impact of diffuse sources was recognized during the last years and serious attempts to address them came into place already in the region.

To tackle eutrophication and chemical pollution relevant national legislation is in place, new programs, plans and projects were developed after 2001, including river basin management plans. Harmonization of river monitoring strategies in the region is well advanced.

Of the 50 hot-spots originally identified 14 can be considered to have been adequately addressed in terms of required capital investments or a re-assessment of the impacts (pollution loads) discharged from the sites. Additionally, projects for many new points with different scope (WWTPs, waste management, reception facilities etc.) have been configured and included in the DABLAS list of projects or prioritized in national investment plans.

The number of Port Reception Facilities increased in the region since 2001. However, outdated storage and treatment technology is still in place at some ports, providing only partial treatment at best. The lack of PRF for deballasting and emptying bilges (from a chemical pollution perspective) is an issue. There is also a problem of poor enforcement of regulations in shipping - the illegal discharges are of serious concern. At present there is no effective monitoring and intervention plan for pollution from ships, without which enforcement of existing regulations is likely to remain very weak. The need to establish a harmonised fee/cost recovery system on ship-generated waste in the Black Sea region is well recognised.

A special Vessel Traffic Oil Pollution Monitoring System has been developed, however, it needs regionally agreed AIS data exchange and further development of the Back-tracking component. Besides, the regional preparedness in emergency situations and the safety of navigation have been greatly advanced. Different courses and workshops have been organised, Contingency Plan and Annexes developed, Guidelines for oil spills reporting and exercises drafted and agreed. The first regional DELTA exercise took



place combining oil spill preparedness and search and rescue operations. Regional SAR training course project proposal has been drafted.

In some of the Black Sea countries there is either a lack or poor enforcement of environmental protection regulations in agriculture. The adoption of best agricultural practice, recognized in the new SAP2008 should improve matters in the future, even if it hasn't done so yet. The widespread move to smaller-scale private farming has diminished government control and it is difficult to effectively assess the input of nutrients and pollutants from agriculture in the Black Sea Region. There is a regional legacy from the over application of agro-chemicals, so residues of historically-applied pesticides/herbicides are still being exported to the Sea from catchments; and stores of out-dated and highly toxic agro-chemicals are still thought to exist on some farms. However, the monitoring during the last years showed very low concentration of pesticides in the Black Sea waters, usually below the detection limit. Occasional appearance of local patches with a very high concentration of pesticides is usually related to extreme events (for instance, floods in 2005). Besides, the level of pesticides in bottom sediments still remains high almost in all coastal waters of the Sea, though with a decreasing trend in comparison with the 1990s. In general, the pollution by pesticides could be considered as an 'old' one (due to low part of DDT and lindane in comparison with its metabolites), in other words it is not caused by recently used pesticides.

Serious advancements were achieved or initiated in the Black Sea coastal states at national and regional levels in: Capacity-building and training of marine scientists; Evaluations of major marine systematic (biological) groups in each of the BS countries, using the latest IUCN criteria and guidelines for application at the regional level; Mapping of habitats, migratory routes, spawning areas, nursery grounds, etc.; Enforcement of habitat- and ecosystem- oriented approach to biodiversity management. Regular update of List of Commercially Protected Species, Red Lists, Exotic Species and Habitats of Black Sea importance is being undertaken. The latter serves as a tool for conservation management at the regional level. Other important achievements are the increased number and area of coastal and marine protected areas, improving management strategies to prevent the introduction of new invasive species, targeting the priority vectors of introduction - ships (ballast water) and aquaculture. Monitoring systems for early detection of alien species, especially in "hot-spots" - ports, aquaculture areas are in place in some BS states, though based on a voluntary or project basis.

In Decline of Living Resources unsustainable/destructive fishing and harvesting practices, poaching, lack of a common and effective monitoring system of fishing activities around the Black Sea and lack of legally binding document are still the greatest bottlenecks in the region to achieve sustainable exploitation of commercially important species. Valuable commercial species are not yet recovered. The highly variable stock dynamics and the lack of effective control over the fisheries make stock collapses quite likely in future.

The legally binding document in fishery, drafted in the early 1990s, is still not finalized though many times redrafted. Further negotiations are needed to reach a political agreement on the nature of the document - Protocol to the Bucharest Convention or self-standing Convention. Harmonized methodology for Stock Assessment has been regionally agreed only for Anchovy. The next step in regional cooperation is the finalization of the stock assessment methodology for turbot.

National legislation/policy tools in the fisheries sector is in place in all states. Complete ban and periodic ban on commercial fishing is applicable. Total allowable and permissible catches (TAC) are not applicable only in Turkey. Minimum admissible size, prohibited fishing gears and allowable mesh size for nets are also applicable in all the countries whereas information on fishing free zones needs further clarification and improvement. National Strategic Plan for Fishing and Aquaculture is available in Bulgaria and Romania for 2007-2013 and they implement the European Common Fisheries Policy. Release of young commercial fishes into the Black Sea is in place in Bulgaria and was up to 2002 in Turkey. Aquaculture is well developed in all states and it is expected to reduce the stress on natural populations.

Following the provisions of the BS SAP Chapter III C Sustainable Human Development the Black Sea coastal states introduced compulsory EIA procedures and rules developed under appropriate national legislation. SEA (Ref. SEA Protocol, [http://www.unece.org/env/eia/sea\\_protocol.htm](http://www.unece.org/env/eia/sea_protocol.htm)) is also being considered by most of the countries where efficiently applied only in two European States at present. In Ukraine SEA is explicitly written in the Law on Ecological Expertise and includes not only programs or plans but also Laws

Integrated Coastal Zone Management was recognised as a major principle in the BSSAP1996 and received a new momentum in the updated BS SAP 2008. However, despite of the existing already legislation in Bulgaria, Romania and Georgia, this kind of management is not always considered in practice. Extensive construction, erosion, deforestation and destruction of coastal habitats are observed along the coasts of the Black Sea in certain areas. Black Sea ICZM Strategy is drafted, however its adoption needs to be accelerated. ICZM spatial planning methodology was developed by the ICZM Activity Center (Russian Federation), further tested in Ukraine, Turkey and presently in Georgia, proving its vitality and usefulness and it will be wider promoted in the Black Sea coastal states and elsewhere.

Black Sea experts and scientists explicitly outlined the improved knowledge about the state of the Black Sea today supported in many cases by official national reporting of the Black Sea coastal states, namely:

### ***Eutrophication***

<b>Issue</b>	<b>1995-2000 situation</b>	<b>2001-2006/7 situation</b>
Impact of eutrophication	Described in simple terms, but with no real description of status	Much clearer idea of how eutrophication impacts on biodiversity/habitat change, and of the effects of nutrient enrichment on the pelagic ecosystem and marine living resources Quantification of nutrient levels within the Sea itself
River loads	Data absent from many rivers. Estimated of nutrient inputs to the Sea from the Istanbul Strait included River loads are overwhelmingly the major source of nutrients to the sea	Monitoring data (and therefore load estimates) are available for the majority of rivers, but flow measurements are not available from Georgia Annual flow data from a large proportion of River-borne loads of N and P appear to have reduced by about 30% since 1996. A much clearer idea of nutrient source apportionment within this individual source (River loads) is now available. No assessment of nutrient loads to the Sea through the Kerch or Istanbul straits.
Direct municipal discharges	Only modelled estimates of loads available. No specified minimum size/volume/load of discharge Direct municipal discharges responsible for only a very small proportion of the total nutrient load to the Black Sea.	Monitored loads available Considerable effort made on data-checking to ensure comparability of results from individual discharges/countries A comparison cannot be made between the 1996 and 2007 situations because of problems in equating modelled loads to monitored loads Direct municipal discharges responsible for only a very small proportion of the total nutrient load to the Black Sea.
Direct industrial discharges	Only modelled estimates of loads available. No specified minimum size/volume/load of discharge Direct industrial discharges responsible for only a very small proportion of the total nutrient load to the Black Sea.	Monitored loads available for industrial plants producing more than 1,000 m <sup>3</sup> /day. A comparison cannot be made between the 1996 and 2007 situations because of problems in equating modelled loads to monitored loads Direct industrial discharges responsible for only a very small proportion of the total nutrient load to the Black Sea.



## Conclusions

Issue	1995-2000 situation	2001-2006/7 situation
Atmospheric deposition	No estimate provided	Estimate provided for nitrogen, albeit with considerable uncertainty attached. This estimate suggests that atmospheric deposition may be responsible for a similar load of nitrogen to the Sea to that discharged via rivers
Other sources, notably agriculture	Very little information. Not considered as important sources to be tackled as part of	Much clearer idea of the contribution from diffuse sources to the Black Sea, with a far better understanding of the contribution of agriculture to this problem
Monitoring	No integrated regional monitoring programme available for the Sea itself or for the nutrient sources discharging to it	Integrated monitoring programme now set up, but with a mixed response from different countries. Biological monitoring has only recently been incorporated into this programme. A regionally coordinated chemical quality assurance scheme is in place for analysis of samples collected from within the Sea itself, but this programme does not extend to quality assurance of loads data.

### *Microbiological and Chemical Pollution*

Issue	1995-2000 situation	2001-2006/7 situation
Microbiological pollution	Significant point source discharges. Some national and international riverine inputs considered to be significant. Sewage pollution considered to be a major source, but no real assessment Solid municipal waste disposal considered to represent a problem with possible transboundary dimensions. However, no supporting information provided. No consideration of livestock as a source	Microbiological pollution identified primarily as a significant national (rather than a transboundary) problem. No further assessment made
Land-based point source pollution	Considered only direct municipal/industrial discharges Direct discharge assessment based on modelled data and likely to have been inaccurate	Considered only direct municipal/industrial discharges Direct discharge assessment based on monitoring data Improved quality assurance programmes required to allow regional comparison of pollutant load data Legal landfills identified in most countries but no assessment of their likely contribution to pollution status

Issue	1995-2000 situation	2001-2006/7 situation
River and strait pollutant loads	Data from a large number of rivers missing, but not reported as such.	Data from a number of rivers is still not available, but the situation is improving. Crucially, data for the Istanbul and Kerch straits has not been provided. BOD5 still the only indicator of organic pollution comparable at the regional level (excluding nutrients) comparable at the regional level Provision of flow /discharge data for the estimation of riverine loads highlighted as a topic requiring attention/capital investment
Diffuse source pollution	Not included	Considered, but not assessed due to lack of information. Agrochemicals considered an increasing problem.
Dumping activities	No official information on major dumping activities (legal or illegal) taking place in the region. It was assumed that it was taking place however, and was predominantly caused by a lack of regulation of potential dumping activities.	Any dumping except of dredged spoils is prohibited in the Black Sea. Illegal dumping data are not available Data on dredging are reported but its impact is not assessed
Operational discharges (vessels)	Illegal discharge of harmful substances, especially oil, considered important, but no data presented to back up claims	Illegal discharge data available from selected ports, but the volumes recorded tend to be very low. Quality assurance concerns exist over some nationally reported data. Remote sensing data of likely oil spills available for the whole sea, but these data are not ground-truthed. Remote sensing data show that the majority of oil likely spills occur along major shipping routes, suggesting that shipping, rather than land-based oil installations have been the principal cause of concern. However, a single large spill from ships, platforms or land-based oil installations could severely impact biota and the economies of all coastal countries.
Loads assessment	Assessment incomplete. Based partly on modelled (direct discharges) and partly on measured (riverine) data No regionally agreed list of priority pollutants for monitoring/assessment purposes	Assessment incomplete. Based on measured data Mandatory data for monitoring and assessment agreed and approved regionally agreed list of priority pollutants for monitoring/assessment purposes shall be improved
Status assessment of the Sea	No status assessment made No regionally agreed monitoring programme	Preliminary status assessment made. The BSIMAP has been in existence for 6 years now, but national data provision is variable. Additional data, however, are available from research activities

### *Biodiversity change, including alien species*

Issue	1995-2000 situation	2001-2006/7 situation
Loss or imminent loss of endangered species and their genomes	<p>Focused on keystone species. These were considered to be at the center of communities which are highly characteristic of the local environment, and include threatened endemic as well as relict species. These communities had dramatically decreased due to eutrophication caused by inflow of untreated sewage from point and non point sources and otherwise polluted rivers, hypoxia caused by eutrophication, increased turbidity, the use of inappropriate types of fishing gear, toxic pollution, over-harvesting and destruction of breeding grounds.</p> <p>The <i>Phyllophora</i> community was considered to be 3% of the reference level on Ukrainian shelf although there was little or no quantitative data on the standing crop in 1990s.</p> <p>The <i>Cystoseira barbata</i> community was considered to be less than 1% of reference level on Romanian and Ukrainian shelf.</p> <p>The Mediterranean Mussel (<i>Mytilus galloprovincialis</i>) was at 30 % of reference level on NWS.</p> <p>Few specimens of Monk seal were left although there had been no recent comprehensive census.</p>	<p>List of Species of Black Sea importance adopted</p> <p>Biodiversity and keystone species abundance is still a serious concern in spite of slight improvements.</p> <p>The community dominated by <i>Phyllophora nervosa</i> has not returned to its former situation but is instead dominated by opportunistic filamentous algae. Although this is not necessarily bad it still represents a eutrophic condition, albeit less serious than that represented by the monospecific phytoplankton blooms of the 1980s. Indeed evidence suggests that transparency of the water column is sufficient to allow <i>Phyllophora</i> to re-establish, providing the level nutrient enrichment can be reduced.</p>
Loss of habitats, notably wetlands and shelf areas, supporting important biotic resources	<p>Although loss of habitats was identified as a MPP in the 1996 TDA, there is little data to support this, other than the information provided for the loss or imminent loss of endangered species (see above).</p>	<p>All coastal margin habitats are considered to be in a critical status in at least one country; both types of pelagic habitat (neritic and open sea) are considered critical in at least one country; and 13 of 37 types of benthic habitat are considered to be critical in at least one country. Those habitats most at risk include the neritic water column, coastal lagoons, estuaries/deltas and wetlands/saltmarshes.</p>

Issue	1995-2000 situation	2001-2006/7 situation
Replacement of indigenous Black Sea species with exotic ones.	<p>Introduced opportunistic settlers e.g. ctenophore <i>Mnemiopsis leidyi</i> had shown outbreaks and had caused negative effects on fish population and environment.</p> <p>Some species, which had adapted to the Black Sea environment and replaced indigenous species, were being harvested as living marine resources.</p> <p>It was considered that there was a risk of exportation of opportunistic settlers from the Black Sea into other seas and the introduction of other opportunistic settlers into the Black Sea in the future.</p> <p>The development of effective control of ships ballast waters and fouling organisms was recommended.</p>	<p>Highly invasive species are recognized to have a serious impact on biological diversity. Nearly 10 % of the established alien species in the Black Sea and coastal aquatic habitats are deemed currently as highly invasive and another 16 % as moderately invasive.</p> <p>Among 33 alien zooplankton species two have become central to the Black Sea ecosystem in the last 2 decades - <i>Mnemiopsis leidyi</i> notorious for its detrimental effect on the pelagic food web and fisheries collapse, and <i>Beroe ovata</i> for helping to restore the ecological balance by reducing the abundance/biomass of the former invader through selective predation on it.</p> <p>The majority (68 %) of the introductions are human-mediated and only 13 % are a result of the natural expansion of species Ship ballast waters are clearly identified as the primary vector (30 %) of alien introductions in the Black Sea, followed by aquaculture (11 %).</p> <p>Between 1996 and 2005 a total of 48 new alien species were recorded, which represents over 22 % of all registered aliens. The majority belong to phytoplankton (16) and zoobenthos (15), followed by zooplankton (8), fish (5), macroalgae (3) and mammals (1). This increase in invasive aliens suggests a serious impact on the Black Sea native biological diversity, with negative consequences for human activities and economic interests.</p> <p>It is still considered that not enough has been done to reduce these introductions. Marine protected areas are established in some Black Sea coastal states</p>

### *Living Resources Decline*

Issue	1995-2000 situation	2001-2006/7 situation
Stocks	<p>Concerns over depleted or falling stocks of venus clam, Rapana, grey/golden mullets, sturgeons, turbot and spiny dogfish.</p> <p>Haarder population expanding since its introduction in the 1970s</p> <p>Mya clam unexploited, but could be in future.</p> <p>Shad populations considered to be recovering.</p> <p>Anchovy and horse mackerel populations believed to have partially recovered from over-fishing/Mnemiopsis invasion, but concerns over spawning areas and population age dynamics/fecundity</p> <p>Whiting and sprat numbers believed to have remained high, particularly in NW Black Sea.</p> <p>Not clear whether stock status was implied from catch data or whether assessments were routinely carried out. No mention of different stock assessment methodologies being used by individual countries.</p>	<p>Recovery of anchovies and sprat populations appear to have continued however could vary due to natural and man-made causes</p> <p>Assumed recovery of bonito reflected in huge increase in landings during 2005 but also increase in fishing fleets</p> <p>Concerns remain over turbot, whiting, spiny dogfish, horse mackerel (albeit with encouraging signs in some coastal areas), clams, and mullets (native grey/golden mullet appear to be fairing less well than Pacific mullet).</p> <p>Concerns remain over mussel and venus clam stocks. Mya clams still unexploited.</p> <p>Catches (and export from the region) of Japanese Sea Snail have increased dramatically. Concerns over damaging harvesting practices (dredging).</p> <p>Coordinated stock assessments are not undertaken by all countries and tend to be undertaken for only a small number of species. Employed methodologies vary from country to country, at the same time finally agreed for some species and will be promoted in the Black Sea</p>
Catches	<p>Total catches known, but no breakdown into species of commercial importance provided.</p> <p>No CPUE statistics included.</p>	<p>Total catches known and broken down into species of commercial importance.</p> <p>Catch per unit effort (CPUE) statistics included to support total catch data, since regionally agreed stock assessment methodologies just started to be developed</p> <p>It is worrying that that such a large percentage (approx. 70-80%) of the total catch is made up by a single species (anchovy) and that typically over 90% of this catch is made by a single country (Turkey).</p>
Socio-economic factors	<p>Some statistics included, but no real idea of the importance of marine living resources as a source of regional employment.</p>	<p>Importance of marine living resources as a source of regional employment highlighted</p>
Fishing fleet status	<p>Statistics provided on total fishing fleet (vessels &gt;1 ton).</p>	<p>Total fishing fleet (vessels &gt;12 m long) has increased Mostly due to Turkish</p>
Fishery regulation/management	<p>Fisheries management is applied individually by each coastal country.</p> <p>In the case of shared and migratory species, no regionally agreed system exists to adjust fishing effort to stocks (prohibition periods, minimum admissible fish length, etc)</p>	<p>Still poorly regulated at an international level, with regional legally binding document drafted. However, negotiations continues over the production of such a document</p>
Aquaculture	<p>Aquaculture as a sector was poorly developed.</p>	<p>Aquaculture is still poorly developed in most of counties but Turkey, however its importance increases in the region</p>
Illegal fishing	<p>Poorly known.</p>	<p>The contribution of illegal fishing activities to damage/change of marine living resources is not clearly understood so far, but there is a general acceptance that this is a causative factor.</p>

The updated SAP 2008 and background reports produced in 2007-2008, TDA 2007, SoE 2008, and this report will be used to strengthen the environmental protection in the Black Sea region and to assure further progress in the balance between the rapidly developing economy in the Black Sea coastal states and the well-being of the Sea. During the last years the Black Sea coastal states have overcome together many barriers in regional cooperation, including information, scientific and technical uncertainties, and enforcement limitations, issues of sovereignty, conflicting state and national interests, and political rivalries. They established common environmental objectives, assessment criteria and principles of management through convergence of legislative frameworks in the region on one hand and among the Danube and Black Sea regions on another. Improvement of cooperation in science, research and public participation are obvious. The first Black Sea scientific conference took place in 2006 and these conferences will become regular at the agenda of the Black Sea Commission as a source of improved knowledge and new visions for the policy making. International Black Sea Day became an event organised and celebrated regularly in all Black Sea coastal states. Different clean-up campaigns are in place. Other major achievements in the region can be listed as follows:

- Strengthening of regional governance institutions and processes of the Convention implementation
- Creation and sharing of knowledge, strengthening of science-policy cooperation
- Incorporation of stakeholders participation, development of public awareness, outreach campaigns
- Demonstration of clear ecological improvement in the Black Sea

Mechanisms of cooperation were further developed not only between the Black Sea states but with many different organizations, such as EC DGEnv, ICPDR, GEF, BSEC, PABSEC, UNEP (GPA; Regional Seas), UNDP, EU JRC, HELCOM, MEDPOL and MAP, ESPOO Convention, IMO (and its GLOBALLAST Program), EEA, ACCOBAMS, OSPAR, OSCE, EMSA, GESAMP, SIDA, SMA, NGOs, private sector, etc. Memoranda of Understanding and agreements were signed with some organizations and projects. The BSC acts as observer at many regional projects and is a partner to others.

Together with the basic challenges in the region, the Black Sea coastal states paid attention to **global climate change** and the next Black Sea scientific Conference (2008) will be dedicated to this emerging concern.

The overall main challenge remains to increase economic prosperity without endangering the ecological recovery of the Black Sea.





## **ANNEXES and APPENDICES**



## **Annex I. Basis for Cooperative Measures**

*I.1. Conventions to which the Black Sea States Are Contracting Parties (Ref. websites of Conventions)*

State	Bulgaria		Georgia		Romania		Russian Federation		Turkey		Ukraine	
Conventions and Agreements	S	R/A	S	R/A	S	R/A	S	R/A	S	R/A	S	R/A
Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention)	21.04.92	15.01.94	21.04.92	12.01.94	21.04.92	29.09.92	21.04.92	12.08.93	21.04.92	06.03.94	21.04.92	14.02.94
UN Convention on Biological Diversity-CBD	12.06.1992	17.04.1996 (R)		02.06.1994 (Ac)	05.06.1992	17.08.1994 (R)	13.06.1992	05.04.1995 (R)	11.06.1992	14.02.1997 (R)	11.06.1992	07.02.1995 (R)
UN Convention on International Trade of Endangered Species-CITES		16.01.1991 (Ac) 16.04.1991 (E)	1971	13.09.1996 (Ac) 12.12.1996 (E)		18.08.1994 (Ac) 16.11.1994 (E)		13.01.1992 (Ac) 01.01.1992 (E)		23.09.1996 (Ac) 22.12.1996 (E)		30.12.1999 (Ac) 29.03.2000 (E)
UN Convention on Combat Desertification-CCD		21.02.2001 (Ac) 22.05.2001 (E)	15.10.1994	23.07.1999 (R) 21.10.1999 (E)		19.08.1998 (Ac) 17.11.1998 (E)			14.10.1994	31.03.1998 (R) 29.08.1998 (E)		
European Landscape Convention	20.10.2000				20.10.2000				20.10.2000			
UN Convention on Wetlands of International Importance especially as Waterfowl Habitat-RAMSAR		24.01.1976 (E)		07.06.1997 (E)		21.09.1991 (E)		11.02.1977 (E)		13.11.1994 (E)		01.12.1991 (E)
Convention on the Conservation of European Wildlife and Natural Habitats-Bern Convention		31.01.1991 (Ac) 01.05.1991 (E)				18.05.1993 (Ac) 01.09.1993 (E)			19.09.1979	02.05.1984 (R) 01.09.1984 (E)	17.08.1998	05.01.1999 (R) 01.05.1999 (E)
Bonn Convention on the Conservation of Migratory Species of Wild Animals		01.09.1999 (E)		01.06.2000 (E)		01.07.1998 (E)						01.11.1999 (E)

State	Bulgaria		Georgia		Romania		Russian Federation		Turkey		Ukraine	
Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area-ACCOBAMS	16.09.1999	23.09.1999 (R)	24.11.1996	31.03.2001	28.09.1998	13.06.2000						
Cartagena Protocol on Biodiversity	24.05.2000	13.10.2000 (R)			11.10.2000			24.05.2000				
World Heritage Convention		07.03.1974 (A)		04.11.1992		16.05.1990 (A)	12.10.1988 (R)			16.03.1983 (R)		12.10.1988 (R)
Convention on Environmental Impact Assessment in a Transboundary Context (Espoo C.)	26.02.1991	12.05.1995 (R)			26.02.1991	29.03.2001 (R)	06.06.1991				26.02.1991	20.07.1999 (R)
Protocol on Strategic Environmental Assessment (Espoo C.)	+		+		+						+	
BASEL Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal		16.02.1996 (A)		24.05.1999 (A)		27.02.1991 (A)		31.01.1995 (R)		22.06.1994 (R)		08.10.1999 (A)
Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters	25.06.1998		25.06.1998	11.04.2000 (R)	25.06.1998	11.07.2000 (R)					25.06.1998	18.11.1999 (R)
Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)		24.02.06						29.01.76				06.03.76
International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)		19.05.05		08.02.95		18.03.93		03.11.83		10.10.90		25.01.94
UN Convention on Long-Range Transboundary Air Pollution		09.06.1981 (R)		11.09.1999 (Ac)		27.02.1991 (R)		27.02.1991 (R)		18.04.1983 (R)		05.06.1980 (R)

## Annex I. Basis for Cooperative Measures

### 1.1.1. IMO Conventions

The IMO are 60 in total, and the BS states are parties to most of them (<http://www.imo.org/>).

Country/Convention	Bulgaria	Georgia	Romania	Russian Federation	Turkey	Ukraine
IMO Convention 48	x	x	x	x	x	x
IMO amendments 91	x	x	x	x		
IMO amendments 93	x	x	x	x	x	
SOLAS Convention 74	x	x	x	x	x	x
SOLAS Protocol 78	x		x	x		x
SOLAS Protocol 88	x	x	x	x		x
Stockholm Agreement 96						
LOAD LINES Convention 66	x	x	x	x	x	x
LOAD LINES Protocol 88	x		x	x		
TONNAGE Convention 69	x	x	x	x	x	x
COLREG Convention 72	x	x	x	x	x	x
CSC Convention 72	x	x	x	x		x
CSC amendments 93	x		x			
SFV Protocol 93	x					
STCW Convention 78	x	x	x	x	x	x
STCW-F Convention 95				x		x
SAR Convention 79	x	x	x	x	x	x
STP Agreement 71						
STP Protocol 73						
INMARSAT Convention 76	x		x	x	x	x
INMARSAT OA 76	x		x	x	x	x
INMARSAT amendments 94	x				x	x
INMARSAT amendments 98	x		x		x	
IMSO amendments 2006						
FACILITATION Convention 65	x	x	x	x		x
MARPOL 73/78 (Annex I/II)	x	x	x	x	x	x
MARPOL 73/78 (Annex III)	x	x	x	x		x
MARPOL 73/78 (Annex IV)	x	x	x	x		x
MARPOL 73/78 (Annex V)	x	x	x	x	x	x
MARPOL Protocol 97 (Annex VI)	x		x			
London Convention 72				x		x
London Convention Protocol 96	x	x				
INTERVENTION Convention 69	x	x		x		x
INTERVENTION Protocol 73	x	x		x		
CLC Convention 69		x		d		
CLC Protocol 76		x		x		
CLC Protocol 92	x	x	x	x	x	x
FUND Convention 71				d		
FUND Protocol 76				x		
FUND Protocol 92	x	x		x	x	

Country/Convention	Bulgaria	Georgia	Romania	Russian Federation	Turkey	Ukraine
FUND Protocol 2003						
NUCLEAR Convention 71	x					
PAL Convention 74		x		x		x
PAL Protocol 76		x		x		x
PAL Protocol 90						
PAL Protocol 02						
LLMC Convention 76	x	x	x		x	
LLMC Protocol 96	x		x	x		
SUA Convention 88	x	x	x	x	x	x
SUA Protocol 88	x	x	x	x	x	x
SUA Convention 2005						
SUA Protocol 2005						
SALVAGE Convention 89		x	x	x		
OPRC Convention 90	x	x	x		x	
HNS Convention 96				x		
OPRC/HNS 2000				x		
BUNKERS CONVENTION 01	x					
ANTI FOULING 01	x		x			
BALLASTWATER 2004						
NAIROBI WRC 2007						

## ***1.2. Multi- and bilateral agreements among the BS basin states and others (Black Sea states reporting, BSIS)***

Convention between the Government of the Republic of Bulgaria and the Government of Romania in the field of Environmental Protection, signed on signed on 09.12.1991, unlimited.

Agreement between the People's Republic of Bulgaria and the Republic of Turkey for cooperation in the use of water of transboundary rivers - signed on 23.10.1968 in Istanbul; in force since 26.10.1970; ratified Decree 958/28.11.1968., SG 94/1968; text - UN Treaties, volume 807, p. 117, No 11513.

Agreement between the Republic of Bulgaria and the Republic of Turkey for establishing the border in the area of Resovska/Mutludere river mouth and delineation of the sea area between the two countries in the Black Sea - signed on 04.12.1997 in Sofia; in force since 04.11.1998; ratified with a law passed by the National Assembly on 24.06.1998, SG 79/1998.

Agreement between the Government of the Republic of Bulgaria and the Government of the Republic of Turkey on Cooperation in the Field of Environmental Protection, 19.04.2004

Agreement between the Ministry of Environment and Water of the Republic of Bulgaria and the Ministry of Environment and Natural Resources of Ukraine on Cooperation in the field of Preservation of the Environment and Rational Use of Natural Resources, signed on 30.01.2003, unlimited.

Agreement between the Ministry of Environment and Water of the Republic of Bulgaria and the Ministry of Environment and Water Management of Romania on Cooperation in the Field of Water Management, signed on 12.11.2004, in force since 15.03.2005, unlimited.

This is the first specific agreement signed with the competent authorities for WFD in a neighbouring country specifically aimed at WFD implementation including transitional and coastal waters.

Agreement between the Romanian Government and the Ukrainian Government regarding the cooperation in the Field of Border Waters Management, signed on 30.09.1997



Agreement between the Ministry of the Environment and Urbanism of the Republic of Moldova, the Ministry of Waters, Forests and Environmental Protection of Romania and Ministry of Environment and Natural Resources of Ukraine regarding the cooperation in the area formed by the Danube Delta and Inferior Prut River's protected areas, adopted on 05.06.2000

Agreement between the Government of Romania and Government of the Republic of Turkey regarding the cooperation in the Field of Environmental Protection, adopted on 10.09.2001

1997 Agreement on Environmental Cooperation between the Government of Georgia and the Government of the Republic of Turkey.

Memorandum of Intended Cooperation for the Cooperation between the Ministry of Environment and Natural Resources Protection/Republic of Georgia and the Federal Ministry for Agriculture, Forests, Environment and Water Management/Republic of Austria;

Memorandum of Understanding between the World Bank and Georgia;

Agreement between the United Nations Environment Programme (UNEP) and the Georgian Ministry of Environment (GMOE) on Establishment of a UNEP/GRID-compatible Environmental Information Network Centre for Georgia (GRID-TBILISI);

Memorandum of Understanding concerning Environmental Protection between the Ministry of Environment, Physical Planning and Public Works of the Hellenic Republic and the Ministry of Environmental Protection of the Georgian Republic;

Agreement in the field of Cooperation (Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan, Ukraine, Azerbaijan, Turkey, Belarus, Georgia, Kazakhstan, Kirgizia);

Agreement of cooperation between Government of Georgia and Government of Ukraine in the field of Fisheries. (Abolished);

Agreement between Moldova, Russian Federation, Tajikistan, Turkmenistan, Uzbekistan, Ukraine, Azerbaijan, Turkey, Belarus, Georgia, Kazakhstan, Kirgizia on the Control of Trans-boundary Transportation of Hazardous Substances and others;

Georgian 1995 Agreement for the Implementation of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and Related Instruments;

### ***1.3. National and International Cooperation for the Protection of the Black Sea (Programmes, Major Projects and Activities - Black Sea states reporting, BSIS)***

#### ***1.3.1. Strategic Partnership in the Black Sea Region***

- GEF Black Sea Regional project, 1993-2008
- GEF Danube River Basin Regional Project, 1993-2007
- The GEF Dnieper Basin Environment Programme (DBEP)
- The World Bank-GEF Strategic Partnership: Investments - wetland restoration, WWTP, agricultural reform ( Full List of WB Projects given further)
- GEF Biodiversity and Medium-Sized Projects in the Danube/Black Sea basin
- Nutrient control and reduction Projects executed by European Bank for Reconstruction and Development (EBRD) under the new GEF 'Expanded Opportunities for Executing Agencies'
- Accelerated implementation of environmental management programs for mining related "hot spots" identified by the Danube SAP and TDA.
- European Union: Investment and Institutional Support
- European Bank for Reconstruction and Development : Municipal and Industrial Investments
- UNDP Country Cooperation Frameworks/Regional Cooperation Frameworks

***1.3.2. GEF/UNDP Black Sea Environmental Recovery Project: Pilot Projects and key achievements in 2002-2007 (see the Final Report of BSERP)***

***1.3.2.1. Key achievements***

- Institutional review of the BSC
- TDA -widely distributed, an interactive CD-version developed;
- BS SAP - technical draft completed, support in follow-up activities
- LBSA Protocol - national capacity building workshops, incorporation of country comments into the final version
- ICZM - Feasibility study on a corresponding Protocol, Pilot project in testing the land-use planning methodology developed, ICZM Strategy and questionnaires (development, circulation, processing), analysis of ICZM policies in the Black Sea countries
- Development of agricultural inventories (including livestock assessment regional study), review of agricultural policies in the Black Sea countries, development of a regional assessment report, training of reps from ministries and farmers (together with Danube Regional Project, and WB Investment fund);
- Inventories developed and implemented in municipal and industrial sectors, including "hot-spot" analysis;
- Mapping of sensitive areas on the Black sea coast and nursery and spawning grounds of main fish and invertebrate species;
- Support in discussions on the Legally Binding Document Fisheries and stock assessment workshops to discuss proposals on stock assessment methodologies (2003, 2006);
- Development and implementation (together with DABLAS and BSC Project Broker) of pilot investment projects in Mykolayiv and Crimea (Ukraine);
- Implementation of three case studies in cost-effectiveness of options for reducing nutrient emissions;
- Support in the development of the Black Sea Monitoring and Assessment Programme (BSIMAP) - IAEA support, pilot monitoring exercises, inter-calibration exercises, capacity building workshops, development of handbook/manuals including QA/QC guidelines, provision of monitoring equipment;
- Development and implementation of the Black Sea Vessel Traffic Oil Pollution Information System, installation of the system into operation at Bulgarian Maritime Administration;
- Development and installation in the joint office of the BSC/PS and BSERP of the Black Sea Information System (BSIS) to support regular reporting of the Black Sea countries to the Commission, and the Commission - to EEA;
- Preparation and carrying out of 4 international research cruises in the Black Sea, which resulted in a better knowledge on the current state and historical trends of the Black Sea ecosystem. The cruises were a part of an extensive BSERP research programme, which found solid proof of the recovery of the Black Sea ecosystem. Support to the first Black Sea Scientific Conference.
- Development/update of the Black Sea NGO Directory, involvement of NGO in the project activity;
- Implementation of NGO training in the issues related to the management and protection of the Black Sea ecosystem;
- Production of a series of popular and scientific books, articles, brochures and leaflets;
- Development and implementation of a 2-phased Small Grants Programme (17 and 35 project respectively in Phase I and Phase II);

- Considerable increase of public involvement in the activities of the Black Sea Commission and BSERP through the development and implementation of a sound Communications Strategy, organisation of a photo competition, social surveys and public campaigns during celebration of the International Black Sea Day 2006, 2007; development of the follow-up activities with co-financing from national banks, and through UNDP-Coca Cola Partnership;
- Development of a Black Sea Educational Study Pack, translation into national Black Sea languages.

### ***I.3.2.2. GEF/UNDP BSERP Small Grants Projects in 2002-2007 (BSERP Final Report)***

No	Country	NGO	Description
Phase II			
1	Bulgaria	TIME Foundation	Sustainable and Integrated Management of Domestic Wastewater in Pilot Bulgarian Black Sea Resorts
2		Regional Development Agency	Public Involvement in Bathing Water Quality Co-Management
3		Greener Bourgas	GREEN CHOICE CAMPAIGN
4		EUROPE AND WE	Improving the Ecological Situation in Front of the Pomorie Black Sea Coast
5		BSCEIE	INVOLVEMENT OF COASTAL COMMUNITIES IN NUTRIENT REDUCTION
6		Club Edelweiss	Informational Campaign for Creating New Protected Zones on the Bulgarian Black Sea Coast
7	Georgia	CENN	Public Awareness Raising and Promotion of Public involvement in the Black Sea Management Process in Ajara region
8		Int. Ass. "Tskarostvali"	Black Sea Coastal Zone Schools for the Protection of The Black Sea
9		Eco Vision	Informing society about nutrients and toxic substances by means of "Littoral" newspaper
10		Caucasus Green Area	Black Sea Environmental Problems Awareness Rising and Development of Information Channels for Key Stakeholders
11		Journalists and Society	Journalists and local authorities for Black Sea Coastal Zone and Ecosystem conservation - frames and methods of collaboration
12		Imereti Scientists' Union Spectri	Pure Rioni - Pure Black Sea
13		Eco Academy	Elimination of acute risks of obsolete pesticides in Adjara (Kobuleti)
14	Romania	UNESCO Pro Natura	Promoting nature protection and best agricultural practices to mitigate the nutrients pollution in the coastal areas
15		DaciaFilm	The Current Stage of the Black Sea Ecosystem as a Consequence of the Process of Eutrophication
16		Mare Nostrum	Pilot project on eutrophication control in Nuntasi lake area
17		CESEP	Reducing Nutrients Through Public Participation in Coastal Area
18		Center for Complexity Studies-UNESCO Centre	Integrative Communication Leverage for Awareness Synchronization on the Ecological Risks in the Black Sea Basin

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

No	Country	NGO	Description
19	Russia	KKOOP	"Life without danger to the Black sea!"
20		EWNWC	Transboundary Communication and Increase Awareness of General Public on Issues of Black Sea Pollution
21		"Sailing Academy"	Let us stop degradation of water ecosystem!
22		"Krasnodar exotarium"	Justification of specially protected area creation "Lake Khanskoye"
23		Fighting Friends	Popular film: "Utrish. Threat of ecological disaster"
24	Turkey	Kardoga	Public Awareness Raising towards Reduction of Nutrients reaches to the Black Sea from Eastern Black Sea
25		Izmit Local Agenda 21	Project for the Sustainable Life in Black Sea
26		Nature and Wild Life Conservation _Samsun	Conscious Nature Protection via Conscious Production and Consumption
27		Zonguldak Environmental Protection Association	Information Campaign and Performing a Theatrical Presentation aiming to Awareness and Social Consciousness Raising on the Subjects of the Importance of Recycling and the Reduction of Pollution at Source for the Protection of Black Sea Ecosystem
28		Trabzon Environment and Culture Enteprenuers Assoc	Regional Awareness Raising to Reducing Domestic Pollutants which have been effecting the Water Resources
29	Ukraine	"Vesely Delphin"	Tarkhankut Peninsula coastal zone management
30		Dnieper - Nikopol	Public Basin Council as a Body for Water Resources Management
31		NECU	Establishing of the National Park "Kinburnskiy"
32		Ukrainian Land Union	National Strategic Action Plan on protection and rehabilitation of Black Sea: public opinion (Organization and conducting of the Forum of Black Sea NGOs)
33		RBSNPO	Tiligul - Ramsar Management
34		CRCSRSZT	Creation of the Marine Protected Area "Phyllophora Field of Zernov"
35		EDU	The Black Sea: love stories through the eyes of generations
36		Academy of Ecology	Preparation and publication of the special issue of the Magazine "Our Nature" dedicated to the Black Sea
Phase I			
1	Bulgaria	Black Sea Coastal Association, Varna	Promotion of Constructed Wetlands for Wastewater Treatment in Small Coastal Communities in Bulgaria
2		Black Sea NGO Network (BSNN)	Black Sea NGO Networking toward Recovery of Black Sea Ecosystem
3		Greener Bourgas Foundation	Campaign for Protection of Black Sea from Nutrient Pollution (Promotion of Sustainable Agricultural Practices in Bulgarian Black Sea Coastal Zone)
4	Romania	UNESCO Pro Natura - Association for Action in Protected Areas	Black Sea Basin Environmental Issues On-line
5		Prietenii Pamantului (Earth Friends)	Water is Life - production of visual educational materials for schools, local authorities and the general public

## Annex I. Basis for Cooperative Measures

No	Country	NGO	Description
6		G.E.S.S. -- The Group for Underwater and Speleological Exploration	Black Sea Public Awareness Project
7		Mare Nostrum (Constanta)	Voluntary Program in the Romanian coastal watershed to control and reduce agricultural pollution
8	Russia	Sochi Branch of the Russian Geographic Society	Recovery of Kolkhida-type flora and fauna in Imeretinskaya Wetland and legalization of the protection status of the site as a nature monument.
9		Environmental Center of Sochi	Wetland Education for Children
10		Sports and Health Society "Sailing Academy"	The Green Filter for the polluted drains
11	Turkey	Turkish Environmental and Woodland Protection Society, Istanbul	Coordinated Public Awareness and Participation Project of the Turkish Black Sea NGOs
12		The Black Sea Environmentalist (Trabzon)	Raising the public awareness on the effects of pollution on environment, human health and wildlife in Trabzon
13	Ukraine	Institute of Ecology INECO - South Branch	Promote Cost-effective water treatment facilities for small coastal communities in Ukraine
14		Regional Black Sea NGOs Network, Mykolaiv	Clean Water (Preparation and Implementation of Pilot Project on Wetland Restoration at Lower Dnieper)
15		Odessa Branch of the International Socio-ecological Union	The Revival of the Dniester mouth region - Pledge of decrease of a eutrophication level in a northwest part of Black Sea
16		Sevastopol Environmental Organisation "SECAMP-2000"	Public Information Campaign "Stop Black Sea eutrophication syndrome -- a role for everyone"
17		Fund of Natural Sciences and Ecology (Odessa)	Series of video films "The Life of the Sea Coast"

### ***I.3.3. GEF/UNIDO (National Reporting, BSIS)***

Development of the National Action Plan for Implementing the Requirements of the POP Stockholm Convention, 2001-2007 (Romania)

### ***I.3.4. The Danube Black Sea Task Force (DABLAS): Development of Investment projects, June 2004-October 2007***

#### ***Romania:***

Constanta Regional Wastewater Treatment

#### ***Bulgaria:***

Bourgas Regional Wastewater Treatment Plant

#### ***Turkey:***

Ordu and Turhal Wastewater Treatment

**Russia:**

Novorossiysk and Anapa Wastewater Treatment

**Ukraine:**

Mykolaiv Water and Wastewater, Uzhgorod Water and Treatment

Task ID	Task Title	Actions	Deliverables	Objectives
A	W&S Project Preparation Assistance Phase III [Bulgaria]	Strategic Framework Document for Bourgas Regional W & WW Project drafted (Technical need defined, legal structure for regional cooperation proposed, financial structure assessed.) Further TA development needs defined for follow-on EC funded assistance	One pilot Bulgarian regional W&S project (Bourgas Regional W & WW Project) structured for co-financing using 2007 Cohesion Funds	Development of a project pipeline for the Black Sea
B	W&S Project Preparation Assistance Phase III [Romania]	ToR for further TA development needs defined for follow-on EC funded assistance for Constanta Regional W & WW Project	One pilot Romanian regional W&S project (Constanta Regional W & WW Project) structured for co-financing using 2007 Cohesion Funds	
C	W&S Project Preparation Assistance Phase III [Ukraine]	(Funded by others - UNDP GEF: See UNDP GEF scope of works.) Review of project investments for Kherson and Mariupol Vodokanal.	2 pilot Ukrainian W&S DABLAS investment projects structured (one pilot that meets TACIS low income grant eligibility criteria (Mykolaiv), and the other that does not (note UNDP GEF project to fund resources to complete 2 pilots).	
D	W&S Project Preparation Assistance Phase III [Russia]	TA to assist launch the EC TAIEX program for Russia that would facilitate Russian water utility managers / engineers to spend time working with western European water utilities.	Program launched for Russian water utility manager exchange under EC TAIEX. One pilot exchange underway	



## Annex I. Basis for Cooperative Measures

Task ID	Task Title	Actions	Deliverables	Objectives
E	W&S Project Preparation Assistance Phase III [Turkey]	Work with Iller Bank and the Cities of Ordu and Turhal to structure the co-financing for the W&S investments. IPA Co-financing structured.	FSs and EIAs underway for Turhal and Ordu W&S investments. EC-IPA co-financing structured for Ordu and Turhal investments	
F	General Capacity Building Assistance in Project Preparation (Phase III) [General]	Prepare "Amended 'Good Practices in Project Preparation for Public water utilities' documents" for each of the 6 Black Sea countries  Prepare "General Guidance notes on Water Utility Financial and Operational Analysis"	Amended 'Good Practices in Project Preparation for Public water utilities' documents  General Guidance notes on Water Utility Financial and Operational Analysis	Capacity Building of the Beneficiary
G	Dissemination of project results/ increasing decision maker capacity for preparation of bankable projects, maintenance of DABLAS Project Database.	Preparation, translation and publication of an edition of the Black Sea Commission Newsletter highlighting to DABLAS related work and identification of priority projects. Database redesign to incorporate dynamic project development and dynamic project data. Development of a special section dedicated to DABLAS Priority Investment Projects on the BSC web.	Publication of the Black Sea Commission Newsletter, printed version and translated electronic versions in the national languages of the countries, signatories to the Convention on the Protection of the Black Sea Against Pollution (Bulgaria, Georgia, Romania, Russian Federation, Turkey, Ukraine). Maintained and updated database of DABLAS project data.	Dissemination of the project results

### 1.3.5. World Bank (<http://web.worldbank.org/>) and EBRD Projects

Project Name	Country	Date of Approval
Municipal Infrastructure Development	Bulgaria	N/A
Environmental Remediation Pilot Project	Bulgaria	12 May 1998
Environmental & Privatization Support Adjustment Loan	Bulgaria	24 January 2000
Wetland Restoration and Pollution Reduction	Bulgaria	13 June 2002
Lake Pomorie Conservation, Restoration and Sustainable Management	Bulgaria	17 February 2005
BULGARIA OZONE DEPLETING SUBSTANCES PHASEOUT PROJECT	Bulgaria	9 November 1995

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

<b>Project Name</b>	<b>Country</b>	<b>Date of Approval</b>
Energy Efficiency GEF Project	Bulgaria	22 March 2005
Municipal Development & Decentralization 2 Project	Georgia	1 August 2002
Municipal Infrastructure Rehabilitation Project	Georgia	8 November 1994
Regional & Municipal Infrastructure Development Project	Georgia	N/A
Integrated Coastal Zone Management	Georgia	17 December 1998
Protected Areas Development	Georgia	24 May 2001
Agricultural Research, Extension and Training GEF Project	Georgia	11 May 2001
Hazard Risk Mitigation & Emergency Preparedness GEF Project	Romania	20 May 2004
Danube Delta Biodiversity GEF Project	Romania	26 August 1994
Biodiversity Conservation Management Project	Romania	27 May 1999
Agricultural Pollution Control GEF Project	Romania	13 December 2001
GEF Romania Integrated Nutrient Pollution Control Project	Romania	30 October 2007
Energy Efficiency GEF Project	Romania	19 September 2002
Municipal Services Project	Romania	13 July 2006
Mine Closure, Environment & Socio-Economic Regeneration Project	Romania	16 December 2004
Biodiversity Conservation Project	Russian Federation	30 May 1996
Rostov Nutrient Discharge & Methane Reduction GEF Project	Russian Federation	Dropped
ENERGY Efficiency	Russian Federation	2 May 1995
Krasnodar Agricultural Nutrient Reduction GEF Project	Russian Federation	Dropped
Geothermal Energy Development Program (GeoFund): 2nd tranche	Russian Federation	Dropped
Greenhouse Gas Reduction in Natural Gas Global Environmental Facility	Russian Federation	19 December 1995
Ozone-Depleting Substance Consumption Phase-Out GEF Project	Russian Federation	29 December 2006
Environmental Liabilities	Russian Federation	Dropped
Environmental Management Project	Russian Federation	8 November 1994
Municipal Water & Wastewater Project	Russian Federation	21 December 2000
Municipal Heating Project	Russian Federation	27 March 2001
Hydrometeorological System Modernization	Russian Federation	17 March 2005
Emergency Oil spill recovery and Mitigation	Russian Federation	25 April 1995
Biodiversity & Natural Resource Management GEF Project	Turkey	13 June 2000
Anatolia Watershed Rehabilitation GEF Project (Black Sea) *	Turkey	1 June 2004
TURKEY IN-SITU GENE CONSERVATION PROJECT	Turkey	11 March 1993
Istanbul Municipal Infrastructure Project	Turkey	28 June 2007
Municipal Services Project	Turkey	23 June 2005

## Annex I. Basis for Cooperative Measures

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Project Name	Country	Date of Approval
Renewable Energy	Turkey	25 March 2004
Baku-Seyhan oil export pipeline technical assistance	Turkey	12 September 1996
BLACK SEA UMBRELLA/CRIMEA COASTAL ZONE MANAGEMENT	Ukraine	Dropped
Ozone Depleting Substances Phase-Out GEF Project	Ukraine	23 June 1998
UKRAINE METHYL BROMIDE PHASE-OUT	Ukraine	Dropped
Danube Delta Biodiversity GEF Project	Ukraine	19 July 1994
Municipal Development	Ukraine	Dropped
Development policy loan		5 July 2005
Azov Black Sea Corridor Biodiversity Conservation GEF Project	Ukraine	Dropped

EBRD Municipal Utilities Development Programme Phases 1 and II (Romania, National reporting)

### ***1.3.6. EC FP and other Scientific Projects (National reporting, BSIS)***

- daNUbs: Nutrient management in the Danube Basin and its impact on the Black Sea, EU 5FP, EVK1-CT-2000-00051 /2001-2005
- PIMS 3065: Control of eutrophication, hazardous substances and related measures for rehabilitating the Black Sea ecosystem: Phase 2/2005-2006
- IASON -International Action for the Sustainability of the Mediterranean and the Black Sea Environment, EU 6FP, No. 515234/2005-2006
- Evaluation of the impact from land-based activities on the marine & coastal environment, ecosystems & biodiversity in Bulgaria/2006-2007
- EVD Project "Support for BSBD for implementation of the WFD, Bulgaria"/2006
- Red Data Book of Bulgaria - v. III Habitats/2004-2006
- Black Sea Transboundary Diagnostic Analysis. PIU of Black Sea Ecosystem Recovery Project, Phase II/2006
- Assessment of the Black Sea turbot (*Psetta maxima*) stock along the Bulgarian Black Sea coast by swept area method/2006
- Species composition, distribution and stocks of demersal fish species along the Bulgarian Black Sea coast in 2006/2006-2007
- European Lifestyles and Marine Ecosystems (ELME), EU 6FP No .505576 (SUSTDEV-2002-3.III.2.1)/ 2004-2007
- TW-Reference -NET - Management and Sustainable Development of Protected Transitional Waters, EU 6FP No 3B073/2004-2006
- THRESHOLDS - Thresholds Environmental Sustainability , EU 6FP 2003933-2/2005-2008
- BLACK SEA SCENE, EU 6FP/2006-2008
- MATRA, The development of an indicative ecologically coherent network of sub-tidal Marine Protected Areas (MPAs) in Bulgaria and Romania. no. MPAs BG & RO/1/2006/31/2006-2008
- ARENA - 2003-2005. Assessment of the resources with special emphasis on human resources of the region and identification of the gaps, capacity building through training, education and mending the facilities, set-up of a data-base management system serving to the development of an operational system for oceanographic and meteorological forecasting to serve end-users needs.
- ASCOBOS - 2006-2008 -Supporting Programme for Capacity Building in the Black Sea Region Towards Operational Status of Oceanographic Services. Objectives.
- PlanCoast - 2006-2008- ICZM EC Project (from the Black Sea region partners are Ukraine, Romania and Bulgaria).
- MONRUK - 2007-2009 - Monitoring the marine environment in Russia, Ukraine and Kazakhstan using Synthetic Aperture Radar.
- SESAME - 2007- 2010 aims to assess and predict changes in the Southern European Seas (Mediterranean and Black Sea) ecosystems and in their ability to provide key goods and services with high societal importance, such as tourism, fisheries, ecosystem biodiversity and mitigation of climate change through carbon sequestration in water and sediments.
- Assessing Large-scale environmental Risks by tested Methods - ALARM -
- Priority Project MENER : Environment diagnosis for water, air and soil quality determination in order to avoid pollution - 2003 - Analysing present situation regarding the quality of seawater and sediments from Constanta harbour area.
- RO National Program: 2003-2005 - Marine ecosystem preservation and sustainable use promotion (CEMAR) -Evaluation of the evolution trends of physical and chemical indicators of the marine environment, in correlation with anthropogenic influences and climatic changes.
- RO National Program: Marine ecosystem preservation and sustainable use promotion (CEMAR): 2003-2005 -Anthropogenic influences effects on the main biotic components from the coastal area.

- RO National Program: Marine ecosystem preservation and sustainable use promotion (CEMAR): 2003-2005 - Assessment of the ecological state of the littoral lakes from Dobrogea region, solutions for rehabilitation of the natural biological potential.
- Technical assistance for supporting Romania in implementing Water Framework Directive and Integrated Coastal Zone Management for transitional and coastal waters (SENER - Haskoning Nederland B.V.). 2003-2004. \*
- IOC- Black Sea GOOS
- BSEC funds: Project "Improvement of the scientific background for assuring sustainable development in the Black Sea coastal zone: a pre-feasibility study". (Romania coordinator, BG, Georgia, UK, Russia)
- PHARE CBC 2005 Extinction of 2 Mai Reserve - Durankulak - Preservation of marine biodiversity and public awareness ( NGO Mare Nostrum Romania leader, and NGO from BG)

### ***1.3.7. Other EC projects, including TACIS/EuropeAid***

- RU ICZM Pilot Project within TACIS Black Sea Environmental Project - 1999-2000
- EC Support to the Permanent Secretariat of the Black Sea Commission 2004-2008\*\*
- EU-funded project Environmental Collaboration for the Black Sea (ECBS) in Georgia
- Water Governance- Ukraine, Belarus, Moldova, Georgia, Armenia and Azerbaijan, 2007 - 2009
- Investment in the Waste Water treatment plant in Mykolaiv, co-investment with EIB (European Investment Bank) - Ukraine, 2008
- Kura River project - Georgia, Armenia & Azerbaijan, 2008-2010
- Co-investment in the field of Water Resources - Georgia, with EBRD, 2008-2009
- Water Investment Support Facility - WISF - Uzbekistan, Azerbaijan, Armenia, Georgia, finished 2007.

No.	AP	Cost	Name	Coverage	Situation	Duration	Working group	Contractor
3	2003	800,000 €	Satellite monitoring and accident prevention	RF & NIS	Completed 1st study. New ToR prepared by ITS. Tender done. Short listed. Tender unsuccessful; project dropped		2.Safety & security	
4	2003	1,460,000 €	Development of maintenance practices in NIS gas companies	NIS except Tajikistan	Ended 12/2007. Final report & wrap up in progress.	2 years	2.Safety & security	FICHTNER
5	2003	503,503 €	Supply of IT equipment and training for development of maintenance excellence in NIS gas companies.	NIS except Tajikistan & Ukraine	Ended 12/2007. Wrap up in progress.	1½ years	2.Safety & security	INFOR / Data stream

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No.	AP	Cost	Name	Coverage	Situation	Duration	Working group	Contractor
6	2003	1,576,500 €	Pre-feasibility studies for developing North-South gas transit interconnections in Caucasus and Central Asia.	Central Asia & Caucasus	Ended 12/2007. Final report & wrap up in progress.	1½ years	2.Safety & security	KLC-Mott MacDonald-Kantor
10	2004	3,646,400 €	INOATE secretariat	All	Started 11/2005. Ongoing	3 years	5.Administration	EIR-LDK-EREC-LB
11	2004	2,620,000 €	IFI Technical assistance fund	E.E. & Caucasus	Ended 04/2008. Wrap up in progress.	2 years	4.Investment	KLC-Mott MacDonald-LB-Kantor
14	2005	1,000,000 €	Feasibility study for expanding the Eastern Europe Regional Natural Gas Metrological Centre to include oil and oil products metrology	Ukraine, Moldova and Belarus	ToR under preparation. Devolved.	1½ years	1.Harmonisation	
15	2005	3,000,000 €	Harmonisation of gas and oil technical standards and practices	E.E. & Caucasus	Started 12/2007. Ongoing	2 years	1.Harmonisation	FICHTNER-SWECO-DIN-BSI
16	2005	1,000,000 €	Safety and security of main gas transit infrastructure	E.E. & Caucasus	Started 12/2007. Ongoing	2½ years	2.Safety & security	SWECO-Fichtner-AEA
17	2005	1,000,000 €	Supply for safety and security of main gas transit infrastructure in Eastern Europe and the Caucasus	E.E. & Caucasus	Contracting in progress.	1½ years	2.Safety & security	



## Annex I. Basis for Cooperative Measures

No.	AP	Cost	Name	Coverage	Situation	Duration	Working group	Contractor
20	2006	2,500,000 €	International Training Centre for Oil & Gas Metrology Excellence, to be attached to the Metrological Centre in Boyarka	Ukraine, Moldova and Belarus	ToR under preparation. Devolved.	2 years	1.Harmonisation	
21	2006	1,500,000 €	Harmonisation of technical standards, rules and practices in the electricity sector in NIS countries	NIS	ToR under preparation. Procurement notice published.	1½ years	1.Harmonisation	
22	2006	9,500,000 €	Identification and Promotion of Energy Efficiency (EE) Investments	Ukraine and Moldova	Ongoing. Financing agreement signed with EBRD in 12/2006	4 years	3. Sustainable Energy	EBRD
24	2006	5,000,000 €	Support to Kyoto Protocol Implementation (SKPI)	NIS + RF	Started 09/2008. Ongoing	3 years	3. Sustainable Energy	ICF Consulting-Hogan&Hartson-TÜV Rheinland
25	2007	6,000,000 €	Support to Energy Market Integration and Sustainable Energy in the NIS (SEMISE)	NIS	Tendering in progress.	3 years	1.Harmonisation 3.Sustainable Energy 4.Investments	
26	2007	3,000,000 €	Strengthening of the INOGATE Technical Secretariat (ITS) in support of the Baku Initiative	NIS	Tendering in progress.	3 years	5.Administration	

No.	AP	Cost	Name	Coverage	Situation	Duration	Working group	Contractor
27	2008	5,000,000 €	Pre-investment project for the implementation of the Trans-Caspian - Black Sea Gas Corridor	NIS	Project approved. To be forecast. ToR to be prepared.	3 years	2.Safety & security 4.Investment	
28	2008	5,000,000 €	Energy Saving Initiative in the Building Sector in the Eastern European and Central Asian countries (ESIB)	NIS	Project approved. To be forecast. ToR to be prepared.	4 years	3.Sustainable Energy	

Ongoing project

Project halted/dropped

NIS - newly independent states, RF - Russian Federation, E.E. - Eastern Europe

### ***I.3.8. World Wildlife Fund***

Lower Danube Green Corridor

### ***I.3.9. River Basin Programs***

#### ***Bulgaria***

- ICPDR Joint Action Programme for the Danube River - 2001-2005
- National Strategy for Development and Management of Water Sector - 2004-2015
- National Action Plan: Sectoral Program "The Environment" - 1999-2006

#### ***Georgia***

- Kura River Project (GEF/UNDP Funds):
- Development of Trans-boundary Cooperation in the Kura river basin for the Notification of Emergency Situations - Working out of Measures and their Introduction;
- Monitoring of Kura-Areas Rivers;
- Reducing Transboundary Degradation of the Kura-Aras River basin

#### ***Romania***

- Management Plan of River Basin.
- ICPDR Programme - update monitoring programme, in compliance with WFD provisions, starting since 2008.
- DESWAT - Hydrological informational - decisional system - 2005-2008 - Development of an integrate informational and decision-making system for preventing and reduction of water catastrophic events effects. Eximbank SUA, MESD funding.
- WATMAN-Informational system for the water integrated management - 2006-2010 - Improve the preparedness and response in case of flooding, hidrotechnical works accidents, pollution incidents. Eximbank SUA, MESD funding.

## **Annex I. Basis for Cooperative Measures**

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- (WATFRAME) Feasibility study on the implementing WFD in Siret river basin- 2005-2007 - Implement WFD in Siret River basin. USTDA funding.
- BANAFLOW - Flooding risk reduction in Banat region - find solutions for risk reduction.
- Management models for industrial accidents with transboundary character (TEIAMM) - 2006 - Funding Italian Ministry for Environment and Territory.
- Support for implementing WFD - developing a management plan for Buzau-Ialomita river basin - 2006-2007. Phare funding.
- Support for implementing WFD - Acquiring equipments for water resources monitoring - 2006-2007 - Phare and MESD/ANAR
- Support for implementing WFD - Investments for informational system and database for water management - 2006-7 - Phare and MESD/ANAR.
- Water quality management in Crisuri river basin in transboundary context - 2005-2007 - Development of action plans for pollution accidents; data management, GIS; deployment of management plan. Funding - MESD and International Water Office - France.
- Development of an integrate system for river basin management for correlation of water quantity and quality analyses with socio-economic analysis, using OPEN-GIS technology - 2003-2006. Funding UE and MESD.
- Integrated Management of the Carpathian River Basins

### ***Russia***

- Federal Sectoral Program "Ecology and Natural Resources - 2002-2010.
- Long-Term Action Plan of Ministry of Natural Resources in Exploration and Use of Natural Resource and Environmental Protection - 2002-2020.

### ***Turkey***

- Anatolia Watershed Rehabilitation Project is supported by GEF and World Bank - 2005-2012
- The project of the Implementation of Nitrate Directive (91/676/EC) in Turkey - 2005-2007

### ***Ukraine***

- National Programme of the Environmental Rehabilitation of the Dnipro River Basin and the Improvement of the Drinking Water Quality - 1997-2010, State support.
- State Programme of the Water Economy Development (2002-2011) - Protection of the water resources from pollution, rational water use, ensuring of the sustainable development of the river basin ecosystem. Swedish Government funding.
- State Programme "Drinking Water of Ukraine" (03/03/2005) - 2006-2020 - ensuring of high quality and quantity of drinking water for the population of Ukraine; rehabilitation, protection and rational use of the drinking water sources. State support.
- National Program for Protection and Rehabilitation of the Azov and the Black Sea

***1.3.10. Implemented and running activities related to Marine Litter problem (example from Bulgaria, Marine Litter Report, <http://www.blacksea-commission.org/>)***

Project name	Years	Executing body	Sponsor
Yearly campaign "Beach watch" for cleaning up of beaches	since 1996 (ongoing)	NGOs, local authorities, BSBD	
Scientific conferences and meetings on Black Sea environmental problems, Black Sea International Conference (Varna)	since 1999 (ongoing)	BNAWQ	Various sources
Capacity building of basin directorates in Bulgaria	2000	BMEW	EU
Waste water treatment plant Obzor-Byala	2000		EU
Establishment of regional landfills - Sozopol	2001-2008	BMEW	EU, ISPA
Bulgarian Vessel Traffic Management and Information System, Phase 1	2002-2004	BMT	EU Phare
Vessel Traffic Management and Information System, Phase 2	ongoing		
Waste water treatment plant Meden Rudnik, Bourgas	2003-2007	BMEW	EU, ISPA
Waste regional management (Bourgas, Provadia and Dobrich regions)	2003-2007	BMEW	EU
Integral monitoring of the Bulgarian Black Sea coast between Durankulak and Rezovo	2004	BMEW	EU
Support to the Black Sea Basin Directorate for implementation of requirements of Water Directive in relation to the monitoring system in coastal waters	2005-2006	BMEW / BSBD	EU
Strengthening of the waterborne tasks of the Bulgarian Maritime Administration	2005-2006	BMT / BMA	EU Phare
Establishment of port reception facilities for liquid and solid ship waste	2006-2008	BMT / BMA	Various sources
Waste water treatment plant Varna-Asparuhovo and rehabilitation of urban waste water treatment plan in Varna, II stage		BMEW	EU
Optimisation of national information waste system		BMEW	
Wetlands restoration and pollution reduction project		BMEW	GEF
Environmental educational and awareness raising programs and initiatives	ongoing	NGOs, local authorities, schools, BMEW regional bodies	
International Blue Flag movement	ongoing	resorts, marinas	

***1.3.11. Wetlands International Black Sea office projects***

1. The importance of Black Sea coastal wetlands, in particular for migratory waterbirds

Duration: 10/2000-06/2003

Location: The Azov-Black Sea Wetlands of Ukraine

2. Small rivers of Ukraine: public participation in their conservation and sustainable use

Duration: 10/2000 - 02/2004

Location: Ukraine

## Annex I. Basis for Cooperative Measures

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3. Public participation in conservation and sustainable use of Small Rivers in Ukraine; support for the River Network in Ukraine

Duration: 10/2002 - 10/2005

Location: Ukraine

4. Support to the Establishment of the Integrated Management Approach for the Sivash, Ukraine

Duration: 10/2002 - 12/2004

Location: Lake Sivash, Ukraine

5. Wetlands biodiversity conservation in Ukrainian agricultural lands

Duration: 12/2004 - 07/2005

Location: Ukraine

6. Dnipro river corridor in Ukraine: raising public awareness and promoting participatory approach to biodiversity conservation and ecological network development

Duration: 06/2005- 12/2007

Location: Dnipro river basin, Ukraine

7. Indicative map for South Bug meridional river corridor

Duration: 10/2005 - 10/2006

Location: South Bug river basin, Ukraine

8. Toward improved water Management in Ukraine (Watermuk)

Duration: 05/2004 - 10/2005

Location: Dzhankoi District, Crimean Autonomous Republic, Ukraine

9. Establishing the foundations for the launch of a Black Sea Regional Initiative for the wise use of coastal wetlands (BlackSeaWet)

Duration: 05/2006 - 12/2008 (ongoing)

Location: Black Sea countries

### ***1.4 Information Policy of the BSC (<http://www.blacksea-commission.org/main.htm>)***

The Information Policy Matrix is the information policy in respect to release, disclosure applied to each Information type in respect to each user group as defined below.

	Information type						
Users	5 year Report of the BSC	Black Sea Commission Annual Report	Raw data, unprocessed information	Operational reporting, documents and drafts	Final Reports and Internal Reports and Studies	Financial Information	Annual Audit Report
General public	Unrestricted	Unrestricted	Fully restricted, conditional	Restricted	Conditional	Restricted	Unrestricted
Black Sea Commissioners	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted
Permanent Secretariat	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted
Advisory Groups	Unrestricted	Unrestricted	Unrestricted, possibly conditional	Unrestricted	Unrestricted	Conditional	Unrestricted
Other working groups	Unrestricted	Unrestricted	Unrestricted, possibly conditional	Unrestricted	Unrestricted	Restricted	Unrestricted
Focal Points	Unrestricted	Unrestricted	Unrestricted, possibly conditional	Unrestricted	Unrestricted	Restricted	Unrestricted
Partner Organizations	Unrestricted	Unrestricted	Restricted, conditional access	Conditional	Conditional	Conditional	Unrestricted
International Organizations	Unrestricted	Unrestricted	Restricted, conditional	Conditional	Conditional	Restricted	Unrestricted
Scientific Community	Unrestricted	Unrestricted	Restricted, until published	Restricted	Conditional	Restricted	Unrestricted
External Experts	Unrestricted	Unrestricted	Restricted, conditional	Restricted	Conditional	Restricted	Unrestricted
NGOs	Unrestricted	Unrestricted	Restricted, conditional	Restricted, conditional	Conditional	Restricted	Unrestricted
Activity Centers	Unrestricted	Unrestricted	Unrestricted, possibly conditional	Unrestricted	Unrestricted	Conditional	Unrestricted
Projects	Unrestricted	Unrestricted	Restricted, conditional	Conditional	Unrestricted	Conditional	Unrestricted

### ***I.5. Black Sea Publications<sup>2</sup>***

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- Barale, v., Cipollini, P., Davidov, A., Melin, F. 2002. Water Constituents in the North-western Black Sea from Optical Remote Sensing and In situ Data, *Estuarine, Coastal and Shelf Science*, 54, 309-320.

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### ***I.6. Socio-economic indicators***

Figure 1. Population growth in Black Sea riparian countries

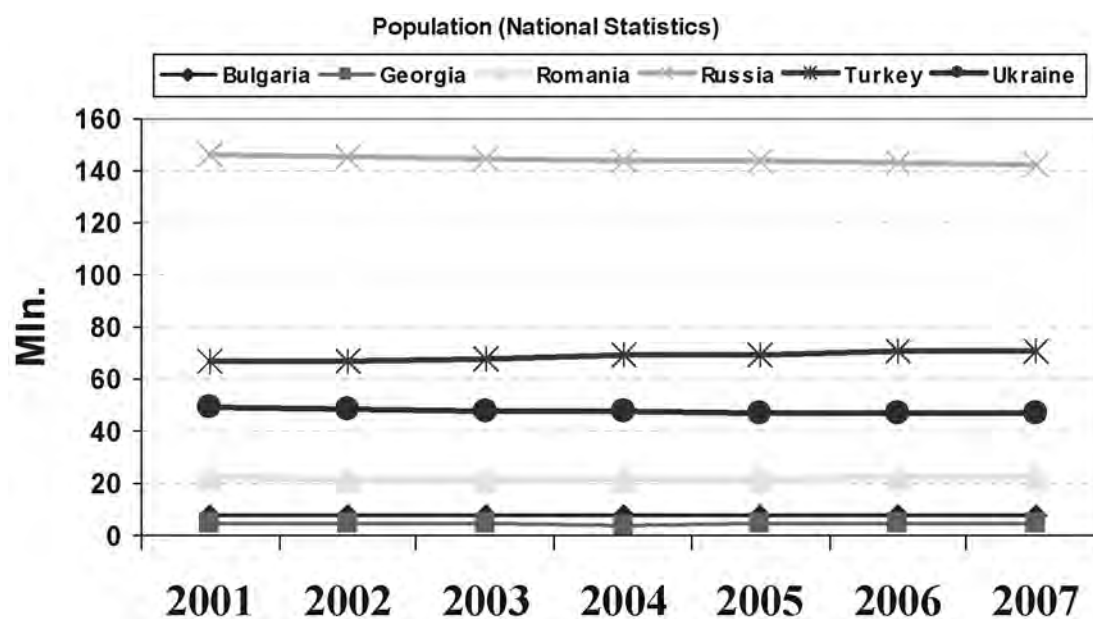


Figure 2.a, b. GDP per capita and annual change

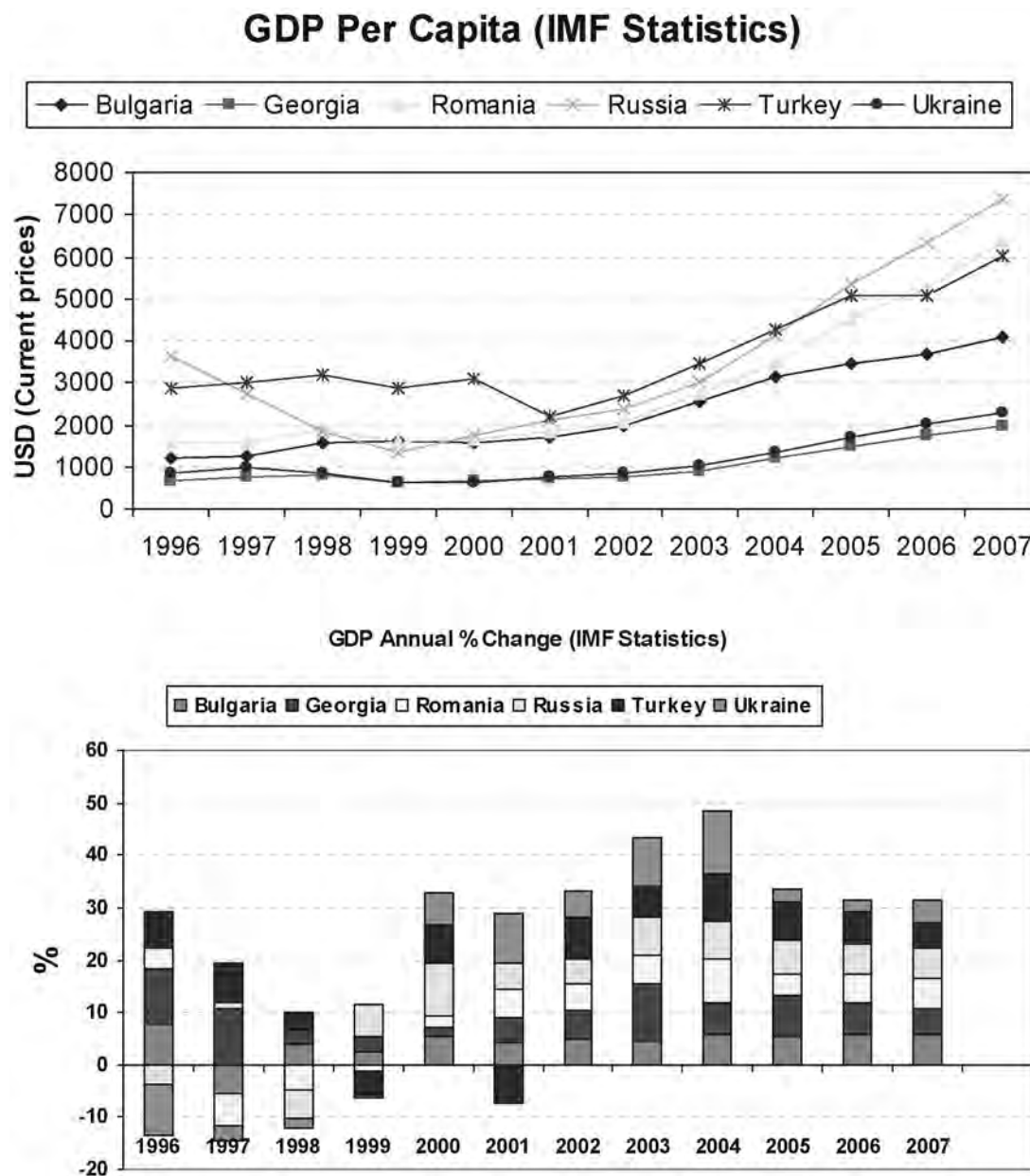




Figure 3. Human Development Index for the Black Sea coastal states (UNDP HDR 2007/2008)

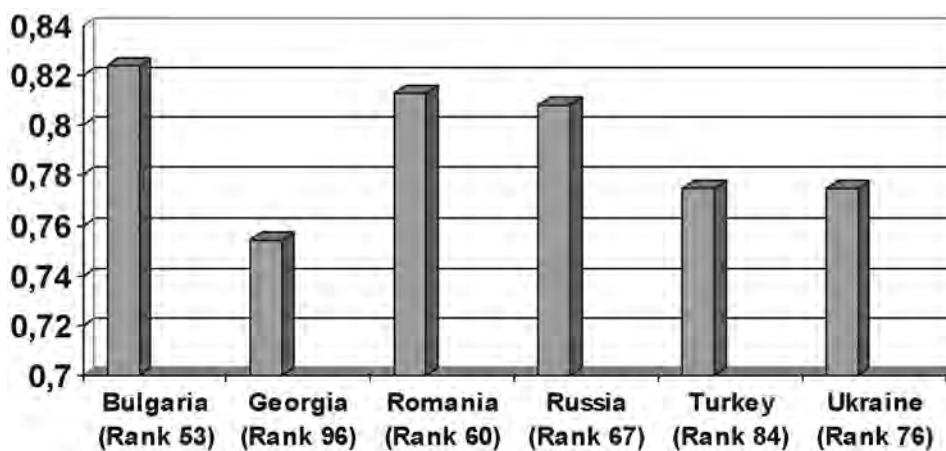
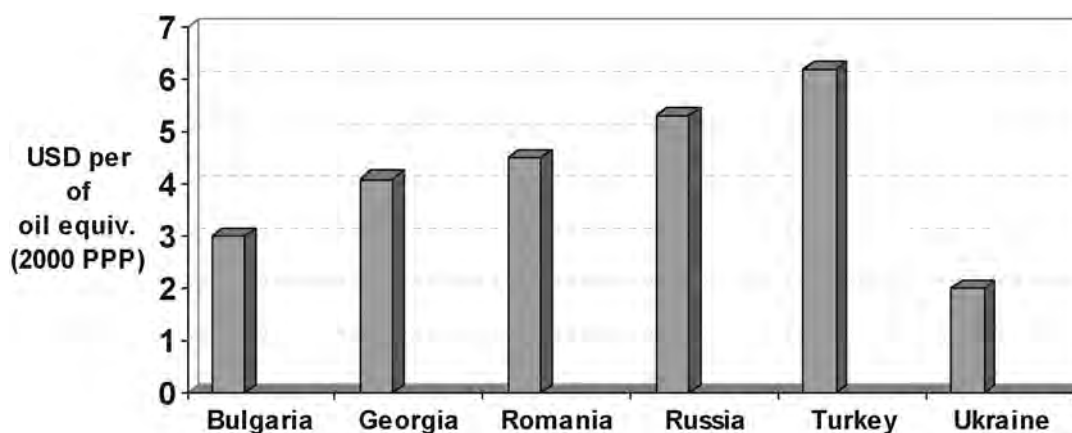


Figure 4. GDP per unit of Energy Use (UNDP - HDR 2007/2008)



## 1.7. List of BSC Regional Guidelines/Manuals

### 1.7.1. Harmonization of biological methodologies

- 1.7.1.1. Phytoplankton (compiled by S. Moncheva)
- 1.7.1.2. Mesozooplankton (compiled by A. Korshenko, based on HELCOM manual)
- 1.7.1.3. Macrozoobenthos (compiled by Valentina Todorova and Tsenka Konsulova)
- 1.7.1.4. Meiobenthos (compiled by Ludmila Vorobyova)
- 1.7.1.5. Mussel population watch (compiled by Nina Shurova and Valentin Zolotorev)
- 1.7.1.6. Macrophytobenthos (compiled by Galina Minicheva)
- 1.7.1.7. Mapping of Habitats of Black Sea importance (compiled by Valeria Abaza)
- 1.7.1.8. Gelatinous macrozooplankton (compiled by Tamara Shiganova)

### 1.7.2. Environmental Safety Aspects of Shipping

- 1.7.2.1. Management of Dredged Materials (Modified from OSPAR Guidelines)
- 1.7.2.2. Oil spill exercises
- 1.7.2.3. Reporting Oil Spills



## **Annex II. Policy Actions**

(Tables)

### II.1. Policy issues/Regulations

#### Cross-sectoral legislation

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Water Act (From. SG. 67/27 Jul 1999, amend. SG. 81/6 Oct 2000, amend. SG. 34/6 Apr 2001, amend. SG. 41/24 Apr 2001, amend. SG. 108/14 Dec 2001, amend. SG. 47/10 May 2002, amend. SG. 74/30 Jul 2002, amend. SG. 91/25 Sep 2002, amend. SG. 42/9 May 2003, amend. SG. 69/5 Aug 2003, amend. SG. 84/23 Sep 2003, suppl. SG. 107/9 Dec 2003, amend. SG. 70/10 Aug 2004, amend. SG. 18/25 Feb 2005, amend. SG. 77/27 Sep 2005, amend. SG. 94/25 Nov 2005, amend. SG. 29/7 Apr 2006, amend. SG. 30/11 Apr 2006, amend. SG. 36/2 May 2006, amend. SG. 65/11 Aug 2006, corr. SG. 66/15 Aug 2006, amend. SG. 105/22 Dec 2006, amend. SG. 108/29 Dec 2006, amend. SG. 22/13 Mar 2007, amend. SG. 59/20 Jul 2007)	Law on Water (1997) amend- ed in 2000	Water Law no. 107/1996 modified and supplemented by the Law no 310/ 28.06.2004, modified and supplemented by the Law 112/2006	The Constitution of the Russian Federation (1993) "Everyone has the right to favourable environment, reliable information about its state and a restitution of damage inflicted on his health and property by environmental transgressions (Art. 42); Everyone is obliged to preserve the nature and the environment, carefully treat the natural wealth (Art. 58)."	Water Law no. 831	Water Code (1995)

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Environmental Protection Act (EPA), (Prom. SG. 91/25 Sep 2002, corr. SG. 98/18 Oct 2002, amend. SG. 86/30 Sep 2003, amend. SG. 70/10 Aug 2004, amend. SG. 74/13 Sep 2005, amend. SG. 77/27 Sep 2005, amend. SG. 88/4 Nov 2005, amend. SG. 95/29 Nov 2005, amend. SG. 105/29 Dec 2005, amend. SG. 30/11 Apr 2006, amend. SG. 65/11 Aug 2006, amend. SG. 82/10 Oct 2006, amend. SG. 99/8 Dec 2006, amend. SG. 102/19 Dec 2006, amend. SG. 105/22 Dec 2006, amend. SG. 31/13 Apr 2007, amend. SG. 41/22 May 2007, amend. SG. 89/6 Nov 2007)	Law on Environmental Protection (1996)	Law on Environmental Protection 137/1995, addit by Law no 159/1999, Law no 294/2003, modified by Governmental Emergency Ordinance 195/2005 approval by Law 265/2005	Water Code of the Russian Federation (2006)	Environmental Protection Law (9/8/1983)	Environmental Protection Law (1991)
Regulation no. 12/ 2002 concerning the quality required of surface water intended for the abstraction of drinking water	Law on Mineral Resources (1996)	Law 458/2002 concerning the quality of drinking water, Law 311/2004, G.D 974/2004	Federal Law "On Environmental Protection" (2002)	Coastal Law (1990/92-3621)	Law on the State Program of Protection and Rehabilitation of the Environment of the Black and Azov Seas (22.03.2001)
Regulation no. 9/2001 on the Quality of Water Intended for Human Consumption	Law on Management and Protection of the Sea Coast and River Banks/2000	Emergency Ordinance 202/2002 approved by Law 280/2003 on Integrated Coastal Zone Management	Land Code of the Russian Federation (2001)	Water Pollution Control Regulations (2004)	Law on Drinking Water and Drinking Water Supply (2002)
Law for organization of the Black sea coast (State Gazette, issue 48 from 15 June 2007, enforced on 1st January 2008, amended in State Gazette, issue 36 from 4th April 2008)		Order 661/2006 for approval of Normative for technical documents required for water management authorizations, permanent since 2006.	Federal Law "On Subsoil" (1992)	Regulation concerning water for human consumption/Official Gazette No. 25730 - 17 February 2005.	Law on the State Program of the Development of Water Industry (2002)

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation No 5/2007 for monitoring of water (State Gazette, issue 44 from 23 April 2007, enforced on 5th June 2007)		Order 662/2006 for approval the procedure and competent authorities for issuing water management authorizations, since 2006 permanent	Federal Law "On Environmental Assessment" (1995)	Regulation on Environmental Impact Assessment /Official Gazette No 25318/16 December 2003	
		Government Agricultural Strategy Plan, adopted in 1999.	Federal Law on Internal Sea Waters, Territorial Sea and Adjacent Zone of the Russian Federation (1998)		
		Program for organising the national system for integrated monitoring of soil, for survey, control and measures for the reduction of pollutants input from agriculture sources and for the management of organic wastes generated by animal farming in nitrates sensitive areas (Ordinance no. 242/2005).	Federal Law on Exclusive Economic Zone of the Russian Federation (1998)		
		GD nr. 472/2000 regarding measures for protection of water resources quality, 2000	Federal Law on Continental Shelf of the Russian Federation (1995)		
			Federal Law on Environmental Assessment (1995)		

**Chemical pollution**

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation no.12/ 2002 concerning the quality required of surface water intended for the abstraction of drinking water	Law on Pesticides and Agrochemicals (1998)	GD No 100/2002 concerning the quality required of surface water intended for the abstraction of drinking water modified by GD 662/2005, modified by 567/2006, modified by 210/2007	Resolution No. 561 of the Head of Krasnodar Krai Administration of 10.06.2004 on the Introduction of Amendments to the Resolution No. 579 of the Head of Krasnodar Krai Administration of 28.05.2002 "On Collecting Payments for the Discharge of Wastewater and Pollutants into Sewerage Systems of Krasnodar Krai Settlements	Water Pollution Control Regulations (2004) Modified 13.02.2008	Law of Ukraine On Wastes (1998)
Regulation no.11/ 2002 on the quality of bathing water	Law on Hazardous Chemicals (1998)	GD No 202/2002 for the approval of the Technical Norms on the quality of fresh waters needing protection or improvement in order to support fish life modified by GD no 563/2006 and GD no 210/2007	Resolution No. 162 of the Head of Krasnodar Krai Administration of 10.03.1999 on Determining Minimal Sizes of Water Protection Zones of Water Objects of Krasnodar Krai and Their Coastal Protective Strips	Regulation on Soil Pollution Control / 31 May 2005	Law on Environmental Audit (2004)
Regulation No. 8 /2001 on the quality of coastal marine waters	Law on State Ecological Expertise of 1996 was amended in 2004. However, in 14 December 2007 parliament passed a new Law on Ecological Expertise, which abolishes the previous one	OMAPAM No 44/09.01.2004 (OJ No 154/23.02.2004) for approving the Regulation for the water quality monitoring for priority/dangerous priority substances	Administrative Transgressions Code of the Russian Federation No.195-03/2001	Law Pertaining to Principles of Emergency Response and Compensation for Damages in Pollution of Marine Environment by Oil and Other Harmful Substances (11.03.2005)	Resolution of the Cabinet of Ministers on the "Rules for the protection of surface waters from the pollution by waste waters" (1999)



<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation no.4/ 2002 on the quality of fish and shellfish water	Law on Construction, Function, Service, Maintenance and Operation of some Oil Transportation Facilities and Legislative Principles of Import, Transportation, Storage and Export of Oil Carried out by these Facilities on the Territory of Georgia. April 2 1996	GD No 201/2002 on the Quality required of shellfish waters establishes norms concerning the quality required for shellfish waters modified by GD 467/2006, modified by GD 210/2007, modified by GD 859/2007		By-law of Dangerous Chemicals, (11.07.1993 - 21634 Official Gazette)	
	Regulation on Protection of Surface Water of Georgia from Pollution/Order No.130/1996 of MoEW/P	Order no 1888/2007 on approval of list of organohalogenate substances and heavy metals and the admissibility limit of organohalogenate and heavy metals	GOST 17.1.3.11-84 Nature protection. hydrosphere. Common requirements on protection of surface (except for marine waters) and underground water against pollution by mineral fertilizers	The Law on The Emergency Intervention and Indemnification In Case Of The Sea Pollution by Petroleum and Other Hazardous Materials Numbered 5312 (Official Gazette dated 11.03.2005 No.25752)	
	Procedures for Estimation of Feasible Constrains on Collection of Polluted And Discharged Water, Flowing into Water /Order 105/1996	Order no 1950/12.12.2007 of Minister of Environment and Sustainable Development and Order 38/2008 of Minister of Agriculture and Rural Development for delimitation and recording of marine areas good for growing up and exploitation of shellfish	GOST 17.1.3.04-82 Nature protection. hydrosphere. Common requirements on protection of surface (except for marine waters) and underground water against pollution by pesticides.	By-law of the Control of Hazardous Wastes, (Official Gazette dated 14.03.2005 No.25755).	
Instruction no.1/2004	Approval of Regulations on "Environmental Impact Assessment" And Instructions of Trunk Pipelines/Order 59/2002	GD 188/2002 updated through the GD 352/2005 on the approval NTPA 011, 001 and 002 regarding the discharging conditions of urban wastewater into the aquatic environment	Federal Law "On the Safe Handling with Pesticides and Agrochemicals" (1997)	By-law of the Control of the Pollution in Water and the Water Environment caused by Hazardous Substances, (26.11.2005 dated and 26005 numbered Off. News)	Resolution of the Cabinet of Ministers of 20.07.1996 # 815 on the Regulation of the State Water Monitoring

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulations no. 6/2000 on the Limit Values for Admissible Contents of Dangerous and Harmful Substances in the Waste Water Discharged in the Water Bodies	Law on Hazardous Chemicals (1998)	Order No 125/1996 of the Minister of Waters, Forests and Environmental Protection for the approval of the regulation procedure for social and economic activities with environmental impact details the permitting procedures for new investments and existing activities, as well as for the methodology of elaboration of the impact assessment studies.	Federal Law "On Environmental Assessment" (1995)	Implementation Regulation Related to Principles of Emergency Response and Compensation for Damages in Pollution of Marine Environment by Oil and Other Harmful Substances (21.10.2006)	Resolution of the Cabinet of Ministers of 08.05.1996 p. On approval of procedures of determination of the size and borders of water protection zones and regime of economic activities within these zones
Ordinance on amending and supplementing Regulation No. 6/9.11.2000 on the limit values for admissible contents of dangerous and harmful substances in the waste water discharged in the water bodies (State Gazette No. 24/23.03.2004), implementing the requirements of Directive 91/271/EEC concerning urban waste water treatment		Ministerial Order No 1141/06.12.2002 (OJ No 21/16.01.2003) approving the Procedure and the competencies for issuing the water management permits and licenses modified by Order no 662/2006	Federal Law on Sanitary-Epidemiological Well-Being of Population (1999)	Regulation on Taking Waste from the Ships and Waste Control (26.12.2004)	Resolution of the Cabinet of Ministers of 11.09.1996 N1100 On the procedure of development and approval of norms maximum allowable discharge of polluting substances and list of substances to be regulated during discharge
Regulation no. 7/2000 on the Terms and Procedure for Discharge of Industrial Waste Waters into Settlement Sewer Systems		MO No 1241/16.01.2003 (OJ No 104/19.02.2003) approving the Procedure for modification or withdrawal of water management permits or licenses Amended on MO No15/2006	Federal Law "On Production and Consumption Wastes" (1998)		Resolution of the Cabinet of Ministers of 25.03.1999 On approval of the Rules of the protection of surface waters against pollution by return waters

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation no. 10/2001 on issuing of permits for the discharge of waste waters		Ministerial Order No. 1144/2002 transposing the EU requirements related to EPER	Resolution of the Government of the Russian Federation "On development, approval and realization of scheme for integrated usage and protection of water objects, introduction of changes to these schemes" (2006)		Law on Ecological Expertise (1995)
		Ministerial Order No. 1140/2002 on The National Guidance on the Register of Emitted Pollutants (EPER Guidance)	Resolution of the Government of the Russian Federation "About the order of approval of norms for permissible impact to water objects" (2006)		Resolution of the Cabinet of Ministers on the "Rules for the protection of surface waters from the pollution by waste waters" (No465)
		MO No 1241/2003	Resolution of the Government of the Russian Federation "About approval of Guidelines on realization of state control of water objects usage and protection" (2006)		
		Order nr. 34 / 2002 regarding prevention, reduction and integral control of pollution. (Approved through Law 645/2002), 2002	Sanitary Rules and Norms of Sea Water Protection Against Pollution SanPiN No 4631-88		
		National Strategy on climate changes, approved by GD 645/2005	Hygienic Requirements to the Surface Water Protection SanPiN 2.1.5.980-00		
			Resolution of the Government of the Russian Federation "Regulations on water protection zones for water objects and its protective belts" (1996)		

**Nutrient over-enrichment/eutrophication**

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
MOEW Order No RD - 970/28.07.2003 on identifying the sensitive areas in the Republic of Bulgaria according to the requirements of Directive 91/271/EEC concerning urban wastewater treatment.	Law on Pesticides and Agrochemicals (1998)	OMAPAM No 1072/19.12.2003 (OJ No 71/28.01.2004) for approving the organization of the National Integrated Monitoring, Supervision and Decision Support System against nitrate pollution from agricultural sources in surface waters and ground waters and the Surveillance and Appropriate Control Programme, as surface waters and groundwater	Federal Law on Environmental Assessment (1995)	Regulation on the protection of waters against pollution caused by nitrates from agricultural sources" /18. 02. 2004	Law "State Program of Protection and Rehabilitation of the Environment of the Black and Azov Seas" (22.03.2001)
Regulation no.1/ 2007 on the research, use and protection of groundwater (State Gazette No. 87/30.10.2007),	Law on Hazardous Chemicals (1998)	Governmental Decision 964/2000 concerning the approval of the Action Plan for the protection of waters against pollution with nitrates coming from agricultural sources	Norms SP 2.1.5.1059-01	Regulation on Environmental Impact Assessment /Official Gazette No 25318/16 December 2003	Resolution of the Cabinet of Ministers of 08.02.1999, No 166.On the approval of the Rules for Wetlands of National Significance
Regulation no.2/2000 2007 on the Protection of Waters against Pollution Caused by Nitrates from Agricultural Sources(State Gazette No. 27/11.03.2008),	Law on Soil Protection (1994)	Law 458/2002 amended by the Law no 311/2004	Federal Law on Atmospheric Air Protection No. 96-03/1999		
Regulation no. 10/2001 on issuing of permits for the discharge of waste waters		National Strategy for Water Management( updating process) till 2015	GOST R 50611-93 Organic-mineral fertiliser		

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation No. 10 of 06.10.2003 on the Emission Limit Values (Concentrations in waste gasses) of sulphur dioxide, nitrogen oxides and total dust, discharged to the atmosphere from large combustion plants, SG No 93 of 21.10.2003		GD 964/2000 concerning the approval of Action Plan for the protection of waters against nitrates from agriculture sources, 2000	Federal Law "On Environmental Protection" (2002)		Resolution of the Cabinet of Ministers on the "Rules for the protection of surface waters from the pollution by waste waters" (No465)
		Action Plan for the protection of waters against nitrates from agriculture sources (approved by GD 964/2000, updated in 2005 by GD nr. 1360.	Federal Law "On the Safe Handling with Pesticides and Agrochemicals" (1997)		
		Code of the good agriculture practices for water protection against pollution with nitrates from agriculture sources - reviewed in 2005 (Ordinance no. 1182/2005)			
		Order of Ministry of Environment and Water Management nr. 501/2003 - Approval of the regulation for establishing pollution sources inventory for aquatic environment and groundwater. 2003			
		GD 188/2002 on the approval NTPA 011, 001 and 002 regarding the discharging conditions of waste water into the aquatic environment, amended by GD 351/2005, 2002-2018			

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
		Ministerial Order 1072/2003 approved the organization of the National Integrated Survey, Control and Decision Support Monitoring for reducing pollutants from diffuse agricultural sources within surface and groundwater. 2003-2018			
		Order of Ministry of Environment and Water Management nr. 501/2003 - Approval of the regulation for establishing pollution sources inventory for aquatic environment and groundwater. 2003			
		GD 188/2002 on the approval NTPA 011, 001 and 002 regarding the discharging conditions of waste water into the aquatic environment, amended by GD 351/2005, 2002-2018			

**Fisheries**

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Fisheries and Aquacultures Act		Law on Fishing Fund, Fishery and Aquaculture No. 192/2001	Resolution No. 124 of the Head of Krasnodar Krai Administration of 05.02.2004 on Interdepartmental Commission of Determining Catch Quotas of Water Biological Resources for Coastal Fisheries between Krasnodar Krai Applicants	Fisheries Law (1971) amended in 1983	Law on Fish, other Alive Water Resources and Food Products from Them (2003)
Ordinance Nerd 09-25, Sofia/13.01.2006 of the Minister of Agriculture and Forestry regarding the total allowable catch		Order No. 277/ 4 July 2002 regarding approval of the Regulations for organizing and functioning of the National Company for Management of Fishery Resources	Resolution No. 113 of the Head of Krasnodar Krai Administration of 16.02.1999 on Measures for the Protection of Marine Biological Resources in Coastal Areas Adjacent to the Territory of Krasnodar Krai		Temporary Procedure for carrying out fisheries" adopted by the Cabinet of Ministry on the 28th of September 1996
		Order No. 262/16 July 2001 regarding the Preparation of the Directory of Vessels and Fishing boats	Federal Law on Fishery and Conservation of Water Biological Resources No 166-FZ (2004),		
		Order No. 422/30 October 2001 for approval of the Regulation on the conditions for development of the commercial fishing activities in the Black Sea waters	Federal Law "On Fishery and Conservation of Water Biological Resources" (2004)		
		Annual Order on the Fishing Prohibition (140/247/2002) Each year is amended	Federal Law "On Fauna" (1995)		



<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
		Technical framework for developing the Action Programmes for the areas which are vulnerable at nitrates from agriculture sources (Ordinance no. 296/2005)	Federal Law on Internal Sea Waters, Territorial Sea and Adjacent Zone of the Russian Federation (1998)		
		Order No. 179/1 June 2001 regarding the Registering and transmission of the data related with the marine fishing activity	Federal Law on Continental Shelf of the Russian Federation (1995)		
			Federal Law on Exclusive Economic Zone of the Russian Federation (1998)		

*Biodiversity and habitat changes*

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Biodiversity Conservation Act/2002	National Biodiversity Strategy and Action Plan/2005	Law 462/2001 concerning for the approval of Governmental Emergency Ordinance no. 236/2000 concerning the regime of natural protected areas and conservation of natural habitats	Law No. 656-K3 of Krasnodar Krai of 31.12.2003 on Specially Protected Natural Territories of Krasnodar Krai	Law for Protection of Cultural and Natural Amenities(1983-2863)	Forestry Code of Ukraine (1994)
Medicinal Plants Act	1. Law on the Protection of New Species of plants; December 29, 2006 and 2. Law on the Protection of Plants against Harmful Organisms , 1994	Decree No 187/30.03.1990 (OJ No 46/31.03.1990) - ratifying the Paris Convention on Protection of World Cultural and Natural Heritage	Resolution No. 850 of the Head of Krasnodar Krai Administration of 29.07.2002 on the Protection of Water Biological Resources in the Black and Azov Sea Basin on the Territory of Krasnodar Krai	National Parks Law (1983)	
Protected Territories Acts	Law on Protected Area System (1996) Note: There is also another Law on Protected Area Status (November 22, 2007)	Law No 26/24.04.1996 (OJ No 93/08.05.1996) -Forestry code	Resolution No. 113 of the Head of Krasnodar Krai Administration of 16.02.1999 on Measure for the Protection of Marine Biological Resources in Coastal Areas Adjacent to the Territory of Krasnodar Krai	Forestry Law: date:31/08/1956 no:6831	Law on Fauna (2001)
Protection of Agricultural Lands Act	Law on State Ecological Expertise (1996) Described above	Law No 103/23.09.1996 (OJ No 328/17.05.2002) on hunting fund	Federal Law on Specially Protected Natural Territories No. 33-Φ3/1995	Council of Ministers Decree for Agency for Specially Protected Areas (19.10.1989)	Law on conservation of the Environment Law "On Natural Reserve Fund of Ukraine" (1992) or Regulative Act of the Cabinet of Ministers of Ukraine "Order of changing land usage for a specified purpose that are in property of citizens or juridical persons" (2002)

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Forests Act	Law on Environmental Permits (1996)	GD No 230/04.03.2003 (OJ No 190/26.03.2003) on the delimitation of the biosphere reserves, national parks and natural parks and the setting up of their administrations	Federal Law on Fauna No. 52-Φ3/1995	Regulation on CITES /Official Gazette No 25545 dated 6 August 2004	
Protection of New Animal and Vegetable Species Act	Law on Wildlife (1996)	MO No 374/03.09.2004 (OJ No 849/16.09.2004) on the approval of the Action Plan regarding Cetaceans Conservation from Black Sea, Romania waters	Federal Law on Natural Medicinal Resources, Medicinal Spa Localities and Resorts No. 26-Φ3 (1995)	Law on Protection of Animals (24.06.2004 no:5199)	
Hunting and Game Protection Act/2000	Law on Creation and Management of Kolkheti Protected Area (1998)	MO No 850/27.10.2003 (OJ No 793/11.11.2003) on procedure of entrustment of administration and custody of the protected natural areas	Federal Law on Specially Protected Natural Territories (1995)		
Genetically Modified Organisms Act/2005	Forest Code (1999);	MO No 552/26.08.2003 (OJ No 648/11.09.2003) on approval of the internal zoning of natural and national park from biological diversity conservation point of view	Federal Law on Fauna (1995)		
Regulation on the conditions and order for issuance of permits for introduction of non-native animal and plant species into the nature/2003	Presidential Decree No. 280/2001 on Coordinated Planning and Implementation of Ongoing and Prospective Programmes Related to Bojomi-Kharagauli National Park and its Supporting Zone	MO No 246/22.07.2004 (OJ No 732/13.08.2004) on cave classification-natural protected areas	Federal Law on Internal Sea Waters, Territorial Sea and Adjacent Zone of the Russian Federation (1998)		
	Administrative Violation Code (1984)	GD No 2151/30.11.2004 (OJ No 38/12.01.2005) on setting up the protected natural area regime for new zones	Federal Law on Continental Shelf of the Russian Federation (1995)		

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
		Law No 462/18.07.2001 regarding the protected natural area regime, conservation of natural habitats, wild flora and fauna approval	Federal Law on Exclusive Economic Zone of the Russian Federation (1998)		
		MO No 647/06.07.2001 (OJ No 416/26.07.2001) for the approval of the authorization procedures for the harvesting, seizing, acquisition activities and trading on the external or internal market and import of plants and animals from wild fauna and flora			
		MO no 1964/2007 on establishing the status of protected areas of site with community importance which are integrated in NATURA 2000 network			
		GD 1284/2007 on establishing the special protected areas of avifauna as part of ecological European Natura 2000 network from Romania			

*Sectoral policies*

*Tourism*

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Governance Ordinance No 8 / 2001 for the quality of coastal waters.	Law on Sanitary Protection Zone of Health Resorts and Recreational Areas, March 22, 1998	Governance Ordinance No... 58/1998 regarding the touristic activities in Romania	Resolution No. 1665-II of Krasnodar Krai Legislative Assembly of 18.09.2002 (edition of 24.04.2003) on Temporary Order of Organization, Equipment and Exploitation of Beaches of Krasnodar Krai Water Bodies	Tourism Incentives Law: (12.03.1993)	Law on resorts (2000)
Governance Ordinance No 11 / 2002 for the quality of bathing waters		GD No 459/2002 on the quality of bathing water, GD 88/2004, GD 546/2008 Will be amended	Federal Law "On Natural Medicinal Resources, Medicinal Spa Localities and Resorts " (1995)	No.2634, 4957 Law on Changes for Tourism Incentives Law (16.03.1986)	Resolution of the Cabinet of Ministers "On the legal regime of sanitary protection zones of water bodies" (18.12.1998 N 2004)
Regulation N5, 30 May 2008 for management of bathing water quality			Federal Law on Sanitary-Epidemiological Well-Being of the Population (1999)	General Sanitary Law no.1593 (Gazette: 06.05.1930)	Law on the assurance of sanitary-epidemiological wellbeing of population (1997)
Regulation N9, 16 March 2001 for the drinking water			Federal Law "On Specially Protected Natural Territories" (1995)		Resolution of the Cabinet of Ministers of 18.12.1998 # 2004 On the legal regime of sanitary protection zones of water bodies
Regulation N 14, or resorts resources, tourist areas and resorts, 13 October 1987, last am. 2002					

*Urban planning*

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation No. 7 of 2003 for the rules and standards for management of different territories and management zones types	Law on Land Registration, November 14, 1996	Law No 5/06.03.2000 (OJ No 152/12.04.2000) on the territorial planning use	Land Code of the Russian Federation No. 136-Φ3/2001	Settlements law (3.5.1985)	Land Code (2001)
Regulation for amendments and complements to Regulation No. 7 of 2003 for the rules and standards for management of different territories and management zones types (State Gazette 51/21.06.2005)	Regulations of Sea and River Shores of Georgia and Regulations for Engineering Protection/Order 4/2002	Law 247/2005 on land use planning system	Urban Planning Code of the Russian Federation No. 73-Φ3/1998, am 2004.	Land Use and Development Law (1985-3194)	
Regulation No. 8 of 2001 for the scope and the content of territorial plans rules and standards for management of different territories and management zones types			Federal Law "On Land Planning" No. 78-Φ3/2001	Bosporus Law: (18.11.1983)	
Regulation for amendments and complements to Regulation No. 8 of 2001 for the scope and the content of territorial plans rules and standards for management of different territories and management zones types (State Gazette 51/21.06.2005)					

**Agriculture**

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Ordinance No 22 of 4 July 2001 on organic production of plants, plant products and foodstuffs of plant origin and indications referring thereto on them	Law on Pesticides and Agrochemicals (1998)	Order No. 918/2002 of the Minister of Waters and Environmental Protection for the approval of the Code for Best Agricultural Practices modified by Order 1182/1270/2005 on approval of the Code for Best Agricultural Practices	GOST R 50611-93 Organic-mineral fertiliser	Regulation on the Principles and Implementation of Organic Farming/10 June 2005	Law on pesticides and agrochemicals (06.05.1995 N 86, last amended 2006)
Ordinance No 35 of 30 August 2001 on organic production of livestock, livestock products and foodstuffs of animal origin and indications referring thereto on them	Law on Soil Protection (1994)	Governmental Decision 964/2000 for the approval of the National Action Plan for water protection against the pollution caused by nitrates from agricultural sources	GOST 17.1.3.11-84 Nature protection. hydrosphere. Common requirements on protection of surface (except for marine waters) and underground water against pollution by mineral fertilisers	Regulation on the Production, Import, Export, Marketing and Inspection of Organic, Organomineral, Soil Conditioner and Microbial Fertiliser used in Agriculture, 22 April 2003	Law on resorts (2000)
Law for the approval of the Code for best Agricultural Practices	1997 Presidential Decree for the adoption of the Concept of Agrarian Policy of Georgia		GOST 17.1.3.04-82 Nature protection. hydrosphere. Common requirements on protection of surface (except for marine waters) and underground water against pollution by pesticides.	The Code on Good Agricultural Practices- 08/09/2004 (Official Journal no. 25577)	Resolution of the Cabinet of Ministers "On the legal regime of sanitary protection zones of water bodies" (18.12.1998 N 2004)
			GOST 12.3.041-86. Application of pesticides for the protection of vegetation. Requirements of safety.	The Regulation no.25377/18.02.2004 on the protection of waters against pollution caused by nitrates from agricultural sources	Resolution of the Cabinet of Ministers "On approval of the Procedure of usage of the lands of water fund"(13.05.1996 N 502)
			SanPiN 1.2.1077-01. Hygienic requirements to storage, application and transportation pesticides and agrochemicals. Sanitary regulations and normatives	Law on Grazeland: (28.02.1998)	Resolution of the Cabinet of Ministers "On the approval of the Rules for Compiling River Passports and Rules for the Determination of Bank Areas of the Waterways and Their Use" (14.04.1997 No 347)



<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
			GOST 26074-84 - Liquid manure. Veterinary and sanitary requirements for treatment, storage, transportation and utilization	No.3083 Law of Agricultural Reform on Arrangement of Fields in Irrigated Area (01.12.1984)	
			GOST 17.1.2.03-90 Nature protection. Hydrosphere. The criteria and quality characteristics of water for irrigation		
			Land Code of the Russian Federation (2001)		
			Federal Law "On the Safe Handling with Pesticides and Agrochemicals" (1997)		
			Federal Law "On Environmental Protection" (2002)		

**Industry & Transport**

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation no.7/2000 on the Terms and Procedure for Discharge of Industrial Waste Waters into Settlement Sewer Systems	Law on Security of Hazardous Industrial Objects/1997(2000)	Governmental Decision No 625/2001 for the approval of the authorisation procedure of traders	Land Code of the Russian Federation (2001)	Harbors Law: (14.04.1923)	Law on the State Program of the Development of Water Industry (2002)
Regulation on the Terms and Procedures for Issuing of Integrated Permits for Construction and Operation of New and Operation of Existing Industrial Establishments and Installations/Decree No 62 of the Council of Ministers of 12.03.2003, SG No 26 of 21.03.2003	Law on Construction, Function, Service, Maintenance and Operation of some Oil Transportation Facilities and Legislative Principles of Import, Transportation, Storage and Export of Oil Carried out by these Facilities on the Territory of Georgia/1996	Ministerial Order No 169/02.03.2004 (OJ No 206/09.03.2004) for the approval of the direct confirmation method for the reference documents regarding the Best Available Techniques (BREF) approved by European Union	Urban Planning Code of the Russian Federation (2004)	No.4737 Changes on Law on Industrial Zone Law and Organized Industrial Zones Law	Code of Trading Navigation (No277/94)
Merchant shipping code (title amend. - sg 113/02)		Governmental Emergency Ordinance (GEO) No 34/2002 on integrated pollution prevention, reduction and control, subsequently modified and approved by the Parliament through the Law 645/2002	Federal Law on Power Industry (2003)	No. 4691 Law on Development of the Technology (06.07.2001)	
Law on the Maritime Spaces, Inland waterways and ports of The Republic of Bulgaria		Order 566/2003 (M.Of. No. 689/01.01.2003)of the MoEW/P on the approval of the guide for BAT for cement industry.	Federal Law "On Environmental Protection" (2002)		
Ordinance No.15 of the Minister of Transport on conditions and order for delivery and acceptance of ship-generated waste and cargo residues from ships.		Order 37/2003 of the MoEW/P (M.Of. No. 247/10.04.2003) on the approval of the guide for BAT for pulp and paper industry	Federal Law "On Environmental Assessment" (1995)		
REGULATION No. 9 as of 29.07.2005 on port operation suitability requirements					
Mandatory Rules for Port of Burgas/ Varna					

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Environment Protection Law, 2005	The Constitution of Georgia, 2005	On environmental protection, No.137, December 1995	The Constitution of the Russian Federation, December 1993	Turkish Constitution, June 2005	On Natural Environment Protection, June 1991
Law for Waters Management, 2003	The Constitution of Ajara, , 2005	Water, No. 107, May 1996	Water Code of the Russian Federation No. 167-FL, November 1995	Coastal Law, 1.7.1992	On Environmental Impact Assessment, February 1995
Regulation No. 2 for the Rules and Norms for Land-use Planning of the Bulgarian Black Sea Coast, 1995	The Law on Environmental Protection, , 2005	Approval of the Systematic Plan of the Territory - section II, water, No 171, November 1997	Land Code of the Russian Federation No. 136-FL, October 2001	Harbors Law, April 1923	On Scientific and Technical Expertise, February 1995
	The Law on Environmental Permits, , 2005	Forest code, No 26, June 2005	Forest Code of the Russian Federation No. 22-FL, January 1997	Environment Law, August 1983	On Securing Sanitary and Sanitary-Epidemiological Well-Being of Population, February 1994
	The Law on Ecological Examination, , 2005	Establishing the function of National Council for environment and Sustainable Development, No. 158, October 1999	Urban Planning Code of the Russian Federation No. 73-FL, May 1998	Fisheries Law, 22.03.1971, 15.05.1986	On Exclusive (Marine) Economic Zone of Ukraine, May 1995
	The Law on Comprehensive State Examination of Construction Projects, 2005	Establishing the Danube Delta Biosphere Reserve, No. 82, 20 November 1993	Administrative Transgressions Code of the Russian Federation No.195-FL, December 2001	On National Parks, August 1983	Major Directions of State Policy of Ukraine in the Sphere of Natural Environment Protection, Natural Resources Use and Nuclear Safety Provision, March 1998
	Presidential Decree #608 on Establishment of State Consultative Commission for Integrated Coastal Zone Management, 2005	Juridical regime of territorial and interior maritime waters and of contiguous zone of Romania; No. 17, August 1990	Criminal Code of the Russian Federation No. 63-FL, June 1996	On Protection of Cultural and Natural Wealth, July 1983	Order of Limitation, Temporary Suspension or Termination of Activities of Enterprises, Institutions, Organization and Objects in Case of Their Violation of Natural Environment Protection, October 1992

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
	Presidential Decree #459 on Establishment a Legal Body of Public Law_ Georgia State Agency for Protection of the Black Sea and Exploration/Utilization of its Resources, 2005	Regarding the environmental Fund, No. 73, May 2000	Federal Law "On Land Planning" No. 78-FL, June 2001	On Establishment of ASPA, October 1989	Decree on the Order of Permit Issuing for Special Natural Resources Use, 10.09.1992 No 459
	The Law on Marine Space of Georgia, 2005	Ratification of the Convention on the protection of the Black Sea, June 1995	Federal Law "On Environmental Protection" No. 7-FL, January 2002	Bosporus Law, November 1983	On the Order of Setting Limits on the Use of Resources of National Importance, No 459 10.09.1992
	The Law on The Management and Protection of the Sea Coast and River Banks, 2005	Ratifying the Agreement regarding the cetaceans conservation in the Black and Mediterranean Seas and Atlantic contiguous zone, No. 91, May 2000	Federal Law "On Continental Shelf of the Russian Federation" No. 187-FL, November 1995	Coastal Security Force Law, July 1982	On the State Monitoring of Natural Environment, No 785 23.04.1993
	The Law on the System of Protected Territories, 2005		Federal Law "On Internal Sea Waters, Territorial Sea and Adjacent Zone of the Russian Federation" No. 155-FL, July 1998	Settlements Law, March 1993	Order of Submitting Documentation to State Environmental Assessment, No 870 31.10.1995
	The Law on the Establishment and management of Kolheti Protected Areas, 2005	Piscicol Fund, Fisheries and Aquaculture, No. 192, April 2001	Federal Law "On Exclusive Economic Zone of the Russian Federation" No. 191-FL, December 1998	Tourism Incentives Law, March 1993	On Atmospheric Air Protection, 2556-14 21.06.2001
	The Law on Wildlife, 2005	Regarding territory arrangements and planning, No. 350, July 2001	Federal Law "On Security" No. 2446-1, March 1992	Forestry Law, August 1956	On the Order of Defining the Levels Of Harmful Impacts of Physical and Biological Factors on Atmospheric Air, No 1092 31.12.1992
	The Law on Water, 2005	Regarding some measure of protection and permit of the construction in the Romanian Black Sea Coastal Zone, No. 597, October 2001	Federal Law "On Common Principles of Local Self-Government Organization in the Russian Federation " No. 154-FL, August 1995	Law on Mobilization for Afforestation and Erosion Control, July 1995	On the Order of Permits Issuing for Pollutants Emission from Stationary Sources into Atmospheric Air, 10.09.1992 No 459

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
	The Law on Tourism and Health Resorts, 2005	Solid waste regime, No.99, July 2001	Federal Law "On Environmental Assessment " No. 174-FL, November 1995	Law on Grazeland, February 1998	Land Code of Ukraine, 5.10.2001 No 2768-14
	The Law on Protective Sanitary Zones of Health Resorts and Resorts Localities, 2005	On public property juridical condition, No.213, June 2005	Federal Law "On Agreements about Production Division" No. 225-FL, December 1995		The law of Ukraine "On Lands Protection", 19.06.2003 No 0962
	The Maritime Code, 2005	On approving of natural territorial planning 3rd section protected areas, No. 5, June 2005	Federal Law "On Natural Medicinal Resources, Medicinal Spa Localities and Resorts" No. 26-FL, February 1995		The law of Ukraine "On Land Development", 22.05.2003 No 0856
	The Law on Minerals, 2005	On approving the technical norms regarding water quality for shellfish, No. 201, June 2005	Federal Law "On Specially Protected Natural Territories" No. 33-FL, March 1995		On Utilization of the Lands of Defence, 27.11.2003 No 1345
	The Law on Oil and Gas, 2005	Guidelines for touristic use of Romanian Black Sea Beaches, No. 107, February 1996	Federal Law "On Fauna" No. 52-FL, April 1995		On Land Reclamation, 14.01.2000 No 1389
	Book Two of the Civil Code, 2005	On set up the Littoral Commission - for rational exploitation and protection of natural resources as well as for rehabilitation of ecological balance in the coastal zone, No. 108, February 1999	Federal Law "On Atmospheric Air Protection" No. 96-FL, May 1999		On Land Charges, 19.09.1996 No 378
	Law on Agricultural Land Ownership, 2005	On approval the action program to reduce pollution in the aquatic environment and underground water government Decision 118, April 2002	Federal Constitutional Law "On the Government of the Russian Federation" No. 2-FL, December 1997		On Land Evaluation, 11.12.2003 No 1378

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
	Law on Privatization of State Property, 2005	Regarding the approval of the action plan for the water protection against pollution with nitrates coming from the agriculture, No. 964, August 2002	Federal Law "On Entrails" No. 2395-1, February 1992		On Land Leasing, 06.10.1998 No 161
	Law on the Declaration of Private Ownership of Non-Agricultural Land in the Use of Juridical and Private Persons, 2005	On Setting Up and Functioning the National Administration of Maritime Ports, No. 519, September 2002	Federal Law "On Power Industry" No. 35-FL, March 2003		Order of Pecuniary Assessment of the Lands Intended for Agricultural Use and Settlements, 27.11.1995 No 76
	Law on the Administration and Disposal of State-Owned Non-Agricultural Land, 2005	Regarding the integrated coastal zone management, No. 202/2002, December 2002	Federal Law "On Sanitary-Epidemiological Well-Being of the Population" No. 52-FL, March 1999		Order of Pecuniary Assessment of Lands of Non-Agricultural Use (with the Exception of Settlement Lands), 29.09.1997 No 86
		Ministry Ordinance no.184, September 1997	Federal Law "On Federal Budget for Year 2003" No. 176-FL, December 2002		Temporary Order of the State Lands Register Maintenance, July 2003
		Ministry Ordinance no.125/1996, June 2005	The Charter of Krasnodar Kray, 03.06.03		Order of Losses Compensation to the Owners of Lands and Land Management Actors, 19.04.1993 No 284
		on ratification of the Convention regarding the cooperation and sustainable use of Danube River, No. 14, June 2005	Krasnodar Kray Law "On Local Self-Government in Krasnodar Kray" No. 18-KL, November 1995		On Planning and Development of Territories, May 2001

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
		Ratified the Bucharest Convention regarding the protection of the Black Sea against pollution, No. 98, June 2005	Krasnodar Kray Law "On Specially Protected Natural Territories of Krasnodar Kray" No. 119-KL, March 1998		On the General Scheme of Spatial Planning in Ukraine, 3059-111 07.02.2002
		On ratification of the Convention regarding the cooperation and sustainable use of Danube River, No. 14	Krasnodar Kray Law "On Protection of Green Funds in Krasnodar Kray Rural and Urban Settlements" No. 360-KL, May 2001		Water Code of Ukraine, June 1995
		Ratified the Bucharest Convention regarding the protection of the Black Sea against pollution, No. 98	Krasnodar Kray Law "On Preservation of Total Area of Forested Lands and Protective Afforestation in Krasnodar Kray" No. 92-KL, June 1997		Order of Charging the Special Use of Water Resources, 08.02.1994 No 75
		On Ratification of MARPOL, No. 6, June 2005	Krasnodar Kray Law "On Sanitary-Epidemiological Well-Being of Krasnodar Kray Population" No. 115-KL, February 1998		Order of the State Water Cadastre Maintenance, 08.04.1996 No 413
		On ratification of the Convention regarding the access to the information, public participation in the decision making process and the access of justice in the environmental issues, No. 86, May 2000	On Radiation Control of Transboundary Freight, No. 53-KL, December 1996		Rules of Protection of Territorial Seas and Internal Waters from Contamination, 29.02.1996 No 269
		On ratification of the Convention on EIA, No. 22, February 2001	Krasnodar Kray Law "On Protection of Krasnodar Kray Environment and Population from Environmentally Harmful Impacts of Motor Transport Complex" No. 474-KL, April 2002		Order of Determining the Size and Boundaries of Water Protection Zones and the Relevant Regime of Economic Activities, May 1996



<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
			On the Basis of Land Use Relations Regulation in Krasnodar Kray, No. 532-KL, November 2002		Order of State Water Monitoring, 20.07.1996 No 815
			On Production and Consumption Wastes, No. 245-KL, March 2000		Instruction on the Order of Development and Approval of Maximum Permissible Discharges of Pollutants into Water Objects with Return Waters, 15.12.1994 No 116
			Krasnodar Kray Law "On Protection of Krasnodar Kray Population and Territories from Natural and Man-Caused Hazards" No. 135-KL, July 1998		"Decree on the Order of Compensation Calculation and Reparation of Damages caused by Pollution from Vessels, Ships and Other Floating Means of Territorial Seas and Internal Waters of Ukraine", 26.10.1995 No 116
			On Natural Medicinal Resources, Medicinal Spa Localities and Resorts of Krasnodar Kray" No. 41-KL, August 1996		Harmonization and Issuing of Permits for Special Water Use, No 459 10.08.1992
			On Tourist Activities in Krasnodar Kray, No. 89-KL, June 1997		Forest Code of Ukraine, January 1994
			On Adoption of Agreement between Organs of Representative and Executive Power of Krasnodar Kray (the Russian Federation) and the Autonomous Republic Crimea (Ukraine) 'Principles of Commercial, Economic, Scientific, Technical, Humanitarian and Cultural Co-operation, No. 523-KL, September 2002		On Fauna, March 1993
					The law of Ukraine "On Flora", April 1999

Bulgaria	Georgia	Romania	Russian Federation	Turkey	Ukraine
					The law of Ukraine "On Natural Reserve Bank of Ukraine", 16.06.1992 No 2456
					The law of Ukraine "On the State Programme of National Ecological Network Formation of Ukraine", 21.09.2000 No 1989
					"Decree on the Red Book of Ukraine", October 1992
					"Order of Forests Classification, Attribution of Forests to Protected Category and Determining Specially Protected Plots of Forest Bank", 27.09.1995, No 557
					"Rules of Forests Restoration and Afforestation", 16.01.1996 No 97
					"Order of the State Forests Register Maintenance and the State Forest Cadastre", 27.09.1995 No 767
					"On the Amount of Compensation for the Excavation of the Species of Flora and Fauna Included into the Red Book of Ukraine and the Damage Caused", 01.06.1993 No 399
					"On the Adoption of Decree On Wetlands of National Importance", No 166 08.02.1999
					"On the Order of Giving Wetlands the Status of Ramsar Lands", No 1287 29.08.2002

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
					The law of Ukraine "On Atmospheric Air Protection", 21.06.2001 No 2556
					"Order of the State Register Maintenance in the Sphere of Atmospheric Air Protection", 13.12.2001 No 1656
					"Decree on the Order of Permits Issuing for Pollutants Emission from Stationary Sources into Atmospheric Air", 29.05.1996 No 364
					"Decree on the Order of Defining the Levels Of Harmful Impacts of Physical and Biological Factors on Atmospheric Air", 31.12.1993 No 1092
					"Order of Setting Norms on Charging the Pollution of Natural Environment and for Levying of this Charge", 01.03.1999 No 303
					"Order of Development, Approval and Review of Limits for Wastes Generation and Disposal", 03.09.1998 No 1218
					"List of Activities Referring to Nature Conservation Procedures", 17.09.1996 No 1147
					"On Adoption of Decree on the State Natural Environment Fund", 07.05.1998 No 634

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
					"Formation Order of the Main Section of the State Budget "Natural Environment Protection and Nuclear Safety" and Financing of the Costs Concerning Nature Conservation Procedures", 09.07.1997 No 732
					"On Fixing Rates for the Compensation Calculation of Damages Caused Due to Illegal Catch or Kill of Valuable Species of Fish and Other Objects of Fisheries", 19.01.1998 No 32
					"On Establishing Norms on Charging for Special Natural Resources Use and Charging for Water Use for the Needs of Hydropower Engineering and Water Transport", 18.05.1999 No 836
					"On Establishing the Order of Charging for Special Water Resources Use and Charging for Water Use for the Needs of Hydropower Engineering and Water Transport", 16.08.1999 No 1494
					The law of Ukraine "On Tourism", 1285-15 18.11.2003
					"Framework Agreement on Institutional Basis of Establishing Intergovernmental Systems of Oil and Gas Transportation", 2231-111 18.01.2001
					The law of Ukraine "On Associations of Citizens", 2460-X11 16.06.1992

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
					"On the Establishment of Order of Conducting Public Hearings on the Issues of Nuclear Power Use and Nuclear Safety", No 1122 18.07.1998
					"Decree on Participation in the Decision-Making Process in the Sphere of Natural Environment Protection", No 168 18.12.2003
					"Decree on the Order of Presenting Ecological Information", No 169 18.12.2003
					"Treaty of Ukraine and the Russian Federation on Co-Operation in the Use of the Azov Sea and the Kerch Gulf", 643-205 24.12.2003
					Agreement on Establishing the Black Sea Group of Naval Co-Operation, 948-1Y 05.06.2003
					Agreement on Co-Operation of the Black Sea Countries during the Search and Rescue on the Black Sea, No 322-1Y 28.11.2002

<i>Air Quality</i>					
<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Clean Air Act	Law on Ambient Air Pollution, June 22, 1999	Ordinance nr. 859/2005 for approving Guidelines on notification procedure and establishment of special requirements for authorisation of some activities/installations that use organic solvents with COV content, 2005		The by-law on control of air pollution from industrial plants (22.07.2006 26236 numbered Official Gazette)	Law on Atmospheric Air Protection, 16.10.1992, nr.2707-12
Regulation No7 from may 3, 1999 on ambient air quality assessment and management	Law on the Amendments and Changes of the Law on Ambient Air Pollution. December 14, 2007	Government Decision nr. 645/2005 for approval of National Strategy on climate changes, 2005-2007, 2005		By-Law on Control of Air Pollution Arising from Heating (13.01.2005 25699 numbered Official Gazette)	Law on Environment Protection, 25.06.1991, nr.1264-12
Regulation No9 from may 3, 1999 on limit values for sulphur dioxide, nitrogen dioxide, fine particulate matter and lead in ambient air	Decree (Resolution) of the Adjara Autonomous Republic on the Pollution of Air and Sea Water Area in Batumi; March 2, 2006	Government Decision nr. 1856/2005 regarding establishing national emission limits for some air pollutants, 2005			Decree of the Cabinet of Ministers of Ukraine (CMU) "List of the main hazardous substances those are under regulations in respect of air pollution", 29.11.2001 nr.1598
Regulation on limit values for benzene and carbon dioxide in ambient air		National Action Plan regarding climate changes, 2005			Decree of the CMU "The Order of development and adoption of the normatives on maximum level of emission of pollutants from stationary sources", 13.12.2001 No 1655
Regulation No 8 from may 3, 1999 on ambient air quality limit values for ozone		GD nr. 1902 / 2004 for modification and completion of GD nr. 699/2003 regarding establishing measures for reduction of volatile organic compounds emissions due to utilisation of organic solvents in some activities and installations. 2004			
Regulation on the requirements to liquid fuels, terms, procedure and method of control (State Gazette No 66/25.07.2003)		GD nr. 731 / 2004 for approving National Strategy for atmosphere protection. 2004			

<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Regulation No.6 of 26 March 1999 on Methods and Procedures for Measurement of Harmful Substance Point-source Emissions Discharged to the Atmosphere		GD nr. 738 /2004 for approving National Action Plan of Action regarding atmosphere protection. 2004			
Regulation No. 10 of 6 October 2003 on the Emission Limit Values (Concentrations in Waste gasses) of sulphur dioxide, nitrogen oxides and total dust, discharged to the atmosphere from large combustion plants		GD nr. 543 / 2004 regarding development and implementation of air quality management plans and programmes. 2004.			
		D nr. 586 / 2004 regarding setting up and organisation of National System for Assessment and Integrated Management of Air Quality. 2004			
		Order nr. 712 / 2003 for approving the Guide for elaboration of programmes proposals for progressive reduction of annual emissions of sulphur dioxide, nitrogen oxides and dust from big combustion installations.			
		GD nr. 541 / 2003 regarding establishing measures for reducing air emissions of some pollutants from big combustion installations. Modified and updated by Government Decision nr. 322/2005 and again by GD nr. 1502/2006			



Bulgaria	Georgia	Romania	Russian Federation	Turkey	Ukraine
		Presidential Order nr. 396 / 2003 regarding promulgation of the Law for ratification of the protocols of the Convention regarding trans-boundary air pollution on long distances, signed at Geneva in 13 November 1979, adopted at Aarhus in 24 June 1998 and Gothenburg in 1 December 1999.			
		GD nr. 142 / 2003 regarding limitation of sulphur content in liquid combustibles. Modified and updated by GD nr. 598/2004 and GD 2176/2004			
		Order nr. 592 / 2002 for approval of the Normative for establishing limit values, threshold values and of criteria and methods for assessment of sulphur dioxide, nitrogen oxides, dust, lead, benzene, carbon monoxide.			
		Memorandum of Understanding (23.10. 2002) between Romanian Ministry of Environment and Water Management and Austria Federal Ministry for Agriculture, Forests, Environment and Water Management regarding bilateral cooperation for reduction of greenhouse gases emissions (ratified by Law no. 584/2004).			
		Law nr. 655 / 2001 for approval of Government Order nr. 243/2000 regarding atmosphere protection.			

**Marine Litter and solid waste management**

(National legal acts and central government documents)

Country	Title of legal act	Date of entering into force
Bulgaria	Water Act	28.01.2000
	Territorial Development Act	31.03.2001
	Law on fishing and aquacultures	2001
	Law on Biological Diversity	09.08.2002
	Law on Human Health	01.01.2005
	Merchant Shipping Code (Title amended in State Gazette, No 108/2006)	14.07.1970
	Law on the Maritime Spaces, Inland waterways and Ports of The Republic of Bulgaria	11.02.2000
	Environmental Protection Act	25.09.2002
	Waste Management Act	30.09.2003
	Act on Sea Areas, Inner Water Ways and Ports (last amendment on 26.05.2006)	23.03.2004
Georgia	Code of Administrative Offences (with subsequent amendments)	15.12.1984
	Law on the Environmental Protection	10.12.1996
	Maritime Code	15.05.1997
	Law on Water	17.10.1997
	Law on Public Health	10.12.1997
	Law on the Maritime Areas	24.12.1998
	Sanitary Code	08.05.2003
	Law on Wastes (drafted but not adopted yet)	-
Romania	Water Law (#107/1996; amended on 30.06.04, #310/2004, amended on 11/2/2006)	08.10.1996
	Ordinance of urgency on wastes system/policy (#78/2000)	22.06.2000
	Law on the approval of the Ordinance of urgency on wastes system/policy (#426/2001)	25.07.2001
	Law on the approval of financing contract for the Project on the Environment and Infrastructure in the Port of Constanta (#517/2001)	24.10.2001
	Ordinance of urgency on the integrated management of costal zone (#202/2002)	28.12.2002
	Law on the approval of the Ordinance of urgency on the integrated management of costal zone (#280/2003)	26.06.2003
	Government decision on the control of bringing in Romania the non-hazardous wastes for their import, active improvement and transit (#228/2004)	04.03.2004

Country	Title of legal act	Date of entering into force
	Government decision on the approval of the Regulations for organization and operation of the National Committee of Coastal Zone (#1015/2004)	08.07.2004
	Government decision on the establishment of the environmental assessment procedure for plans and programmes (#1076/2004)	05.08.2004
	Government decision on the approval of National strategy and National plan for waste management (#1470/2004)	18.10.2004
	Government decision regarding the landfill waste disposal (#349/2005)	10.06.2005
	Ordinance of urgency on the integrated prevention and pollution control (#152/2005)	10.11.2005
	Ordinance of urgency on the environmental protection (#195/2005)	30.01.2006
	Water Code	16.11.1995
	Law on the Continental Shelf of the Russian Federation	30.11.1995
	Law on the Waste Production and Consumption	24.06.1998
	Law on the Sanitary and Epidemiological Welfare of the Population	30.03.1999
Russia	Law on the Protection of the Environment	10.01.2002
	Law of the Harbour	20.04.1925
	Law of the Public Hygiene	06.05.1930
	Law of the Turkish Coast Guard Command	13.07.1982
	Law on the Organization, Duties and Authority of the Gendarmerie	10.03.1983
	Law on the Environment (amended in 2006)	11.08.1983
	Law of the Coast (amended in 1992)	17.04.1990
	Decree Law on establishment/functions of the Ministry of Environment	09.08.1991
	Decree Law on establishment/functions of the Undersecretariat for Maritime Affairs	19.08.1993
	Decree Law on Organization/Functions of the Ministry of Environment and Forestry	08.05.2003
	Law of the Metropolitan Municipality	10.07.2004
	Turkish Criminal Code	26.09.2004
	Law on the Response and Coverage of Damages in Emergency Situations caused by Pollution of the Marine Environment by Oil and Other Harmful Substances	11.03.2005
	Law of the Municipality	03.07.2005
	Implementation Regulation Related to Principles of Emergency Response and Compensation for Damages in Pollution of Marine Environment by Oil and Other Harmful Substances	21.10.2006
Turkey		

Country	Title of legal act	Date of entering into force
Ukraine	Regulation on Taking Waste from the Ships and Waste Control	26.12.2004
	Code of Administrative Offences (#8074-10; with subsequent amendments)	07.12.1984
	Law on the Protection of the Environment (#1268-XII)	26.06.1991
	Principle Legislation on Public Health	1992
	Law on the assurance of sanitary and epidemiological wellbeing of the population	24.02.1994
	Resolution of the Cabinet of Ministers "On the adoption of rates for the estimation of compensation and harmfulness caused by pollution from ships and other floating facilities in territorial and internal marine waters of Ukraine" (#484d)	03.07.1995
	Resolution of the Cabinet of Ministers "An order for the estimation of compensation and harmfulness caused by contamination from ships and other floating facilities in territorial and internal marine waters of Ukraine" (#116)	26.10.1995
	Code of Trading Navigation (No277/94)	
	Water Code (No213/95; amended in 2000)	
	Forestry Code (No3852-X1)	
	Land Code (No2768-111)	
	Law on Air Protection (No2707-X11)	
	Law of Ukraine on Pesticides and Agrochemicals (1995, last amended 2006)	
	Law on Waste (No187/98; amended in 2001)	
	Law on resorts (No20226-111)	
	Law on Fauna (No2894-111)	
	Law on Drinking Water and Drinking Water Supply (No2918-111)	
	Law on the State Program of the Development of Water Industry (No2988-111)	
	Law on Environmental Audit (No1862-1V)	
	Resolution of the Cabinet of Ministers "Regulation of the State Water Monitoring" (No 815)	
	Resolution of the Cabinet of Ministers on the "Rules for the protection of surface waters from the pollution by waste waters" (No465, amended in 2002)	
	Law on the adoption of the National Programme for the Protection and Recovery of the Environment of the Azov and Black Seas (No2333-III)	
	Resolution of the Cabinet of Ministers "On the procedure of development and approval of norms maximum allowable discharge of polluting substances and list of substances to be regulated during discharge" (N1100)	
	Resolution of the Cabinet of Ministers on the "Rules for the protection of internal marine waters and territorial sea from pollution and littering" (No431)	
	Resolution of the Cabinet of Ministers on the "Methodology of calculation of damage from pollution by oil" (No631)	
	Principle Legislation on Public Health	
	Law on the assurance of sanitary and epidemiological wellbeing of the population	

*Administrative instruments on subordinate levels (ministerial, province, district, municipal, harbor, etc. levels)*

Country	Title of legal document	Date of entering into force
Bulgaria	Decree #87 on the Ratification of the Convention on Environmental Impact Assessment in Transboundary Context	23.03.1995
	Guidelines for the development of waste management programs (Protocol #4)	02.04.1998
	Rules obligatory for the region under the jurisdiction of "Marine Administration" Executive Agency (Varna and Bourgas)	1998
	Regulation on the requirements for treatment and transportation of industrial and hazardous waste (adopted by Decree of the Council of Ministers #53/1999)	1999
	Plan for monitoring of objects on the territory of Port of Varna Ltd.	1999
	Regulation on the procedure and manner for establishment of networks and on the operation of the National Water Monitoring System	21.11.2000
	Plan for monitoring of objects on the territory of Port of Bourgas Ltd.	2000
	Regulation on the quality of coastal marine waters	25.01.2001
	Regulation on the requirements for operational suitability of all, except navy ports, for qualification of the workforce and for issuing certificates for operational suitability which comprises requirements concerning adequacy of port reception facilities and waste reception and handling plans	19.06.2001
	Regulation for the activity, organization of work and staff of the Basin Directorates	29.01.2002
	Regulation on the quality of bathing water	25.02.2002
	Regulation on the terms and conditions for carrying out environmental impact assessment	18.03.2003
	Regulation #2 on the terms and conditions for carrying out environmental assessment on national, regional and district development plans and programmes, on urban development plans and their amendments	18.03.2003 (repeated)
	Regulation on the procedure for determination of sanctions for deterioration or pollution of the environment above the limits	06.09.2003
	Ordinance on the waste classification	25.05.2004
	Regulation for the activity, organization and staff of the Regional Environmental Inspectorates	27.07.2004
	Ordinance on the conditions and requirements for construction and operation of incineration-plants and co-incineration plants	07.09.2004
	Ordinance on the requirements for sites determined for placing of waste treatment facilities	17.09.2004
	Ordinance on the conditions and requirements for construction and operation of landfills and other facilities and installations for waste disposal and recovery	24.09.2004
	Ordinance on the order and the formats on which information for waste activities is provided, as for the order for keeping public register of the issued permits, registration documents and of the closed facilities and operations	26.10.2004
	Order of the Minister of Environment and Waters for approval of guidelines for the development of plans for adjusting the existing landfills in accordance to regulations (#ПД-1242)	24.11.2004

Country	Title of legal document	Date of entering into force
	Regulation on the conditions, procedure and methods for environmental assessment of plans and programs	2004
	Regulation on the delivery and reception of ship generated waste and cargo residues	01.01.2005
	Establishment rules of the "Marine Administration" Executive Agency	12.05.2005
	Statute for structure and activity of Regional Inspectorates for Protection and Control of Public Health	2005
	Order of the Minister of Environment and Waters for new guidelines for the development of municipal programs for waste management (#P4-167)	24.03.2006
	Regulation concerning the rules and standards for territory-organizing planning of the Black Sea coast	
	Order #272 on the categorisation of water sources and water receiving bodies	
	National Waste Management Program for 2003-2007	
	National Environmental Strategy and National Action Plan for 2005-2014	
	National Strategy for Water Sector Management to 2015	
	National Programme for Priority Construction of Urban WWTPs	
	National Program for Ports Development	
	Mandatory Rules for the region under the jurisdiction of the Bulgarian Marine Administration	
	Port Waste Management Programs (all ports have such program)	
	Municipal Waste Management Programs (all municipalities have such program)	
Georgia	Contracts for the concession of beaches along the Black Sea coast	
	Ordinance No.15 of the Minister of Transport on delivery and acceptance of ship-generated waste and cargo residues from ships.	22.10.2004
	Mandatory Rules for Port of Burgas/ Varna	1995
Romania	Decree of the Ministry of Public Health (#36/n)	24.02.2003
	All coastal municipal services and ports act according to sanitary guidelines developed locally on basis of relevant national legal and administrative instruments	
	Government decision #349/2005 regarding the incineration of waste	14.02.2002
	Government decision on the establishment of the frame procedure for environmental impact assessment and on the approval of the list of public or private projects subjected to that procedure (#918/2002)	17.09.2002
	RMCTCT order of on the installations for shipyard reception of waste generated on the ships and residual stuff (#779/2002)	29.11.2002

Country	Title of legal document	Date of entering into force
	Government decision on the designation of public authorities in charge of the control and monitoring of the waste import, export and transit activities (#1357/2002)	10.12.2002
	RMEWM order for the approval of the procedure of environmental impact assessment and issuing of the environmental agreement (#860/2002)	31.01.2003
	RMEWM order on the approval of the methodological guidelines applicable to the frame procedure of environmental impact assessment (#863/2003)	31.01.2003
	RMEWM order for the approval of the procedure of issuing the integrated environmental authorisation (#818/2003)	13.11.2003
	RMEWM order on the approval of the general technical guide for the appliance of the procedure of issuing the integrated environmental authorisation (#36/2004)	19.01.2004
	RMCTCT order on the approval of methodological norms regarding authorisation and classification of tourist activities in the coastal zone (#455/2004)	18.03.2004
	Order of RMEWM (#2/2004), RMCTCT (#211/2004) and RMEC (#118/2004) for the approval of waste shipping control and regulation procedure on Romanian territory	15.04.2004
	Order of RMEWM (#38-SMI/2004), RMCTCT (#1044/2004) and RMPH (#671/2004) on the approval of the Code of conduct/policy for recreation activities in the coastal zone	15.06.2004
	RMEWM order for the approval of the procedure for authorising activities with the significant environmental impact (#876/2004)	11.01.2005
	RMEWM order on the approval of technical norms for waste incineration (#756/2004)	26.02.2005
	RMEWM order on the approval of technical norms for waste disposal (landfill) (#757/2004)	26.02.2005
	RMEWM order regarding the setting-up of criteria and preliminary procedures of waste acceptance for disposal and the National list of the accepted waste in each class of waste disposal sites (#95/2005)	08.03.2005
	RMEWM order regarding the issuing of environmental permit (note) for ceasing waste disposal activities, i.e. landfill and incineration (#1274/2005)	28.12.2005
	Law of Krasnodar Krai [Territories] on Waste Production and Consumption (#245-KZ)	13.03.2000
	Law of Krasnodar Krai [Territories] on Sanitary and Epidemiological Welfare of the Population in Krasnodar Krai" (#497-KZ)	26.06.2002
Russia	Law of Krasnodar Krai [Territory] on Natural Healing Resources, Health-improving Areas and Health Resorts in Krasnodar Krai" (#585-KZ)	03.03.2003



Country	Title of legal document	Date of entering into force
Turkey	Law of Krasnodar Kray "On Specially Protected Natural Territories of Krasnodar Kray" (# 119-KZ)	04.03.1998
	Law of Krasnodar Kray "On Protection of Green Funds in Krasnodar Kray Rural and Urban Settlements" (# 360-KZ)	14.05.2001
	Law of Krasnodar Kray "On Preservation of Total Area of Forested Lands and Protective Afforestation in Krasnodar Kray" (# 92-KZ)	30.06.1997
	Law of Krasnodar Kray "On Radiation Control of Transboundary Freight" (#53-KZ)	02.12.1996
	Law of Krasnodar Kray "On Protection of Krasnodar Kray Environment and Population from Environmentally Harmful Impacts of Motor Transport Complex" (# 474-KZ)	30.04.2002
	Law of Krasnodar Kray "On Natural Medicinal Resources, Medicinal Spa Localities and Resorts of Krasnodar Kray" (# 41-KZ)	07.08.1996
	Regulations of Rize harbour	04.12.1980
	Regulations on fixing penalties to ships and vessels and procedures to let them off a penalty	03.11.1987
	Regulations on the control of solid waste	14.03.1991
	Regulations on the control of medical waste	22.07.2005
	Regulations on the control of hazardous waste	14.03.2005
	Regulations of Istanbul harbour	06.09.1996
	Regulations of Trabzon harbour	12.08.1999
	Regulations on environmental impact assessment	16.12.2003
	Regulations of ship dismantling	08.03.2004
	Regulations on waste purchase service from the vessels	11.03.2004
Ukraine	Regulations on waste control of excavations soil, construction and debris wastes	18.03.2004
	Regulations on packaging and packaging waste control	30.07.2004
	Regulations on the control of used batteries and accumulators	31.08.2004
	Regulations on reception of waste from the ships and waste control	26.12.2004
	Regulations on the control of water pollution	31.12.2004
	Regulations on urban wastewater treatment	08.01.2006
	Regulations on bathing waters	09.01.2006
	UMPH order on the approval of the State sanitary rules and norms on coastal marine water protection against pollution in the places of population water use (#631-88)	06.07.1988
	UMPH order on the approval of the State sanitary rules and norms on surface water protection against pollution (#4630-88)	01.01.1989
	UMPH order on the approval of the State sanitary rules and norms on waste water, oil-contained and ballast water and litter discharge from vessels (#199-97)	09.07.1997
	UMTC Rules of Registration of Operations with Harmful Substances on Ships, Marine Installations and Ports (# 452/5643)	10.04.2001
	Regulations on Ports of Ukraine	

## II.2. Policy issues /responsible institutions (National reporting, BSIS)

### II.2.1. Functions and roles/policy actions of national institutions dealing with the transboundary problem of nutrient over-enrichment/eutrophication

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Ratification/signature of international conventions/agreements	Council of Ministers, MoFA, MoEW	Parliament, MoFA, MoEPNR	Parliament, MoFA, MoEWM, MoAFRD	State Duma, Council of Federation, MoFA, MoNR	General Assembly, Council of Ministers, MoFA, MoEF	Parliament, MoFA, MoEP
Formulating national laws, regulations and plans for limiting and eliminating pollution of water resources	MoEW, MoAF, MoRD	Parliament (Committee for Environmental Protection and Natural Resources), MoEPNR, MoA	MoEWM, MoAFRD, MoICT, Ministry of Administration and Interior - MoAI	National level: MoNR Regional level: Legislative Assembly of Krasnodar kray (AoKK)	SPO, MoEF; Ministry of Agriculture - MoA	MoEP, Environmental Committee of Ukrainian Parliament State Committee on Water Saving - ScoWT MoA
Management of Water resources	MoEW, MoRD, River Basin Management Directorate - RBMD	MEPNR, MoA, Local Governments	MoEWM, NAAR & its river basin directorates	MoNR through FAWR & its territorial bodies	MoEF, General Directorate of State Hydraulic Works - GDShW	MoEP, SCOWT
Water standards development	MoEW, RBMD, REI, MoRD, MoH	MoHSWL, MEPNR	Environmental Engineering Research Institute (ICIM)	FEIACS) and its territorial bodies, AoKK, Scientific and research institutions	MoEF	MoEP, CMU, MoH, RDEP
Issuance of concessions/permits/licenses on water use and Integrated permits for operational plants and facilities and projects, including livestock farms	RBMD, MoEW + MoAF	MEPNR + Sectoral Ministries	National Administration Apele Romanx and its branches ( NAAR ) Environmental Protection Agencies - EPAs	FAWR & its territorial bodies MoA AoKK	MoEF, Water Supply and Sewerage Administrations (WSSA), General Directorate of State Hydraulic Works (GDShW) MoH, MoA, MoEF	MoEP, CMU, RA, SCWM, MoH, MoEP, SES, RA, Ministry of Construction, Architecture and Municipal Economy of Ukraine - MoCAME

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Monitoring of surface waters, including: bathing waters groundwaters pollution discharge air emissions	REI, & MoH MoRD, WSC & Municipalities REI	MEPNR MoHSWL	NAAR +ICIM+ IRCM NAAR + MoH NAAR + Local EPA's ICIM + Regional & Local EPA's	Federal Service for Hydrometeorology and Environmental Monitoring (ROSHYDROMET) FEIACS & territorial bodies MoNR through FAWR & its territorial bodies	MoEF, MoH, MoA, GDShW  MoEF, MoH, GDShW +Municipalities, MoH, WSSA MoEF, MoH, Municipalities	SCWM, MoEP, SHMS, SEI  MoH, SES SCWM, MoEP MoEP, SCWM, RDEP, SEI  MoEP, SHMS
Control & enforcement in water management	RBMD, MoE, MoRD	MEPNR, MoF	NAAR	MoNR - FAWR , FSNRM& territorial bodies, AoKK	MoEF, Municipalities + WSSA	MoEP/SES/RDEP/SEI/S EIBSAS
Training & capacity building	MoE MoAF	MoEPNR, MoA	MoEWM MoAFRD	AoKK Kuban State Agricultural University	MoEF, MoA	MEP/MA/NGOs
Regime/Registration of Pesticides and Agrochemicals	MoAF, Regional MoAF Offices	MoA, MoEPNR	MoAFRD	MoA	MoA	MoA UP CMU

**II.2.2. Functions and roles/policy actions of national institutions dealing with the transboundary problem of changes in commercial marine living resources**

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Ratification/signature of international conventions/agreements	Council of Ministers MoFA, MoEW MoAF	Parliament, MoFA MoEPNR	Parliament, MoFA MoEWM, MoAFRD	State Duma Council of Federation MoFA, MoNR MoA	General Assembly Council of Ministers MoFA MoEF MoA	Parliament MoFA MoEP MoA
Formulation of agricultural policies, including fisheries	MoAF integrated with MoEW MoH, MRD	MoA, MEPNR	MoAFRD	MoA and its Agency on Fishery AoKK	MoA	MoA
Development of national program for developing fisheries and aquaculture	MoAF	MEPNR, MoA	MoAFRD	MoA through the Federal Agency on Fishery	MoA	MoA MoEP Cabinet of Ministers of Ukraine - CMU
Development of action plans for the protection of endangered fish species, including establishment of their catch prohibition	MoAF & Institute of Fisheries-Varna	MEPNR	MoAFRD	MoA through the Federal Agency on Fishery	MoA, MoEF	MoEP MoA
Maintenance of the Fisheries Database	MoAF & Institute of Fisheries-Varna		MoAFRD	MoA through the Federal Agency on Fishery	MoA	MoEP MoA
Maintenance of the Fishing Vessels Register	MAF, Executive Agency on Fisheries - EAF	Ministry of Economic Development	MoAFRD	MoA through the Federal Agency on Fishery	MoA	Ministry of Transport and Communications - MoTC
Issuance of permission for merchant fishing	Same & Municipalities	Local Authorities	MoAFRD	MoA through the Federal Agency on Fishery MoNR	MoA	MoA
Inspection and control of compliance with permissions for fishing	EAF	MEPNR	National agency for fishing and aquaculture	MoA through the Federal Agency on Fishery MoNR	MoA	MoA MoEP State Ecological Inspection for the Black Sea and Azov Sea - SEIBSAS

**II.2.3. Functions and roles/policy actions of national institutions dealing with the transboundary problem of chemical pollution**

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Ratification/signature of international conventions/agreements	Council of Ministers MoFA, MoEW	Parliament, MoFA MoEPNR	Parliament, MoFA MoEWM, MoAFRD	State Duma Council of Federation MoFA, MoNR	General Assembly Council of Ministers MoFA MoEF	Parliament MoFA MoEP
Chemical pollution - originating from land						
Formulating national laws, regulations and plans for limiting and eliminating pollution of water resources, including those for land use	MoEW MoAF MoRD, MUN	Parliament (Committee for Environmental Protection and Natural Resources), MoEPNR, MoA	MoEWM MoAFRD MoTCT Ministry of Administration and Interior - MoAI	National level: MoNR MoRD Regional level: Legislative Assembly of Krasnodar kray (AoKK)	SPO MoEF; MoA Ministry of Public Works and Settlements (MoPWS) Metropolitan Municipalities	MoEP Environmental Committee of Ukrainian Parliament State Committee on Water Saving - SCoWT MoA, SCLR
Management of Water resources, including water supply and sanitation	MoEW MoRD, River Basin Management Directorate - RBMD WSC	MEPNR, MoA, Local Governments	MoEWM, NAAR & its river basin directorates MoTCT & Municipalities	MoNR through FAWR & its territorial bodies National level - MoRD Regional level - AoKK	MoEF, General Directorate of State Hydraulic Works - GDSHW Municipalities, Water Supply and Sewerage Administrations	MoEP SCoWT Municipal water utilities

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Monitoring of surface waters including: bathing waters groundwaters water bodies/ resources intended for human consumption pollution discharge air emissions	REI, MoH MoRD, WSC & Municipalities  REI	MEPNR MoHSWL  + Local Governments  MEPNR MoHSWL	NAAR +ICIM+ IRCM NAAR + MoH NAAR + Local EPA's MoH  NAAR + Local EPA's ICIM + Regional & Local EPA's	Federal Service for Hydrometeorology and Environmental Monitoring (ROSHYDROMET) FEIACS & territorial bodies MoNR through FAWR & its territorial bodies MoH and its territorial bodies	MoEF, MoH, MoA, GDShW  MoEF, MoH, GDShW +Municipalities, MoH, WSSA  MoEF, MoH, Municipalities	SCWM, MoEP, SHMS, SEI  MoH, SES SCWM, MoEP MoEP, SCWM, RDEP, SEI  MoEP, SHMS
Control and enforcement	RBMD, MoE, MoRD, MoEW	MEPNR MoF, MoED	NAAR MoTCT&Municipalities	MoNR - FAWR, FSNRM& territorial bodies, FEIACS & territorial bodies AoKK	MoEF, Municipalities + WSSA, GDShW	MoEP/SES/RDEP/SEI/S EIBSAS Municipalities
Regime/Registration of Pesticides and Agrochemicals	MAF, Regional MAF Offices	Ministry of Agriculture, MEPNR	Ministry of Agriculture, Forests and Rural Development	Ministry of Agriculture	Ministry of Agriculture	MA/UP/CMU
Identification of sensitive and less sensitive areas	MOEW integrated with all other cited institutions, depending on the specific case	Ministry of Agriculture, MEPNR	MEWM		Ministry of Environment and Forestry	MEP
Chemical pollution - originating from land						

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Formulation of laws/regulations for shipping activities, including contingency planning	MT, Executive Agency "Port Authorities" (EAPA), Executive Agency "Sea Administration" (EASA)	Ministry of Economic Development (MoED), Parliament	MoTCT	Ministry of Transport (MoT)	Undersecretariat for Maritime Affairs (UMA)	UP MoTC MoEP
Implementation of Contingency plans on pollution from tankers and/or accidents on sea	MT, EAPA, EASA	Port Administration, MoED	MoTCT, Romanian Naval Authority (RNA)	MoT	MoEF, UMA, General Directorate of Coastal Safety and Salvage Administration (GDoCSSA), Metropolitan Municipalities (depending on the scale)	Ministry for Emergency Situations (MoES)
Inspection and control on ships and compliance with IMO Regulations regarding ballast waters	MT, EAPA, EASA	Port Administration, MoEPNR	MoTCT, RNA	MoT	MoEF, UMA,	MoTC, SEL, SEIBSAS



**II.2.4. Functions and roles of national institutions dealing with the identified transboundary problem of biodiversity changes, including alien species introduction**

<b>Role</b>	<b>Bulgaria</b>	<b>Georgia</b>	<b>Romania</b>	<b>Russian Federation</b>	<b>Turkey</b>	<b>Ukraine</b>
Ratification/signature of international conventions/agreements	Council of Ministers Ministry of Foreign Affairs - MoFA, Ministry of Environment and Waters - MoEW	Parliament, MoFA Ministry of Environment Protection and Natural Resources - MoEPNR	Parliament, MoFA Ministry of Environment and Water Management - MoEWM, Ministry of Agriculture, Forests and Rural Development - MoAFRD	State Duma Council of Federation MoFA, Ministry of Natural Resources - MoNR	General Assembly Council of Ministers MoFA Ministry of Environment and Forestry - MoEF	Parliament MoFA Ministry of Environmental Protection - MoEP
Formulating national laws, regulations and plans	MoEW Ministry of Agriculture and Forests - MoAF Ministry of Regional Development - MoRD	Parliament (Committee for Environmental Protection and Natural Resources). MoEPNR	MoEWM	National level: MoNR Regional level: Legislative Assembly of Krasnodar kray	MoEF; State Planning Organization - SPO	MoEP Environmental Committee of Ukrainian Parliament
Development of regional plans and strategies	MoEW MoAF MoRD	Ministry of Economic Development - MoED MoEPNR	MoEWM, MoAFRD Ministry of Transport, Construction and Tourism - MoTCT	Administration of Krasnodar kray (AoKK)	SPO MoEF	MoEP & its Regional Department of Environmental Protection Regional Administration
Management of Natural Parks/Reserves	MoEW, Regional Environmental Inspectorate - REI	MoEPNR	MoEWM	MoNR,	MoEF	State Service of Nature Reserves Management - SSNRM
Enforcement	MoEW REI	MoEPNR	MoEWM Environment Guard - EG	MoNR through Federal Agency for Water Resources (FAWR), Federal Service for Nature Resources Management (FSNRM) & its territorial bodies	MoEF	SSNRM

## Abbreviations

<b>AoKK</b>	<b>Assembly of Krasnodar Krai</b>
CMU	Cabinet of Ministers of Ukraine
EAF	Executive Agency on Fisheries
EAPA	Executive Agency "Port Authorities"
FAWR	Federal Agency for Water Resources
FEIACS	Federal Environmental, Industrial and Atomic Control Service
FSNRM	Federal Service for Natural Resources Management
GDoSHW/GDSHW	General Directorate of State Hydraulic Works
ICIM	Environmental Engineering Research Institute
IRCM	Institutul Roman de Cercetari Marine (National Institute for Marine Research and Development "Grigore Antipa" - IRCM)
MEP	Ministry of Environmental Protection
MoA	Ministry of Agriculture
MoAF	Ministry of Agriculture and Forests
MoAFRD	Ministry of Agriculture, Forests and Rural Development
MoE	Ministry of the Environment
MoEF	Ministry of Environment and Forests
MoEP	Ministry of Environmental Protection
MoEPNR/MEPNR	Ministry of Environment Protection and Natural Resources
MoEW	Ministry of Environment and Water
MoEWM	Ministry of Environment and Water Management
MoFA	Ministry of Foreign Affairs
MoH	Ministry of Health
MoNR	Ministry of Natural Resources
MoRD/MRD	Ministry of Rural Development
MoT/MT	Ministry of Transport
MoTC	Ministry of Transport and Communications
MoTCT	Ministry of Transport, Construction and Tourism
MUN	Municipalities
NAAR	National Administration "Apele Romane"
NGO	Non-Governmental Organisation
RBMD	River Basin Management Directorate
RDEP	Regional Department for Environmental Protection
REI	Regional Environment Inspectorate
SCLR	State Committee for Land Resources
SCWM	State Control Water Management
SEI	State Ecological Inspection
SEIBSAS	State Ecological Inspection for the Black Sea and Azov Sea
SES	Sanitary and Epidemiology Service of Ministry of Health
SHMS	State Hydro-Meteorological Service
SPO	State Planning Organization
UMA	Undersecretariat of Maritime Affairs
UP	Ukrainian Parliament
WSC	Water & Sewerage Companies
WSSA	Water Supply and Sewerage Administrations

## II.3. Investment Projects (TDA2007)

	Identified capital investments made
	Some progress in implementing capital investments
	Further work required

## Annex II. Policy Actions

Country	Pollution source name	Pollution source type	Nature of investment identified under 1996 TDA	Estimated Financial Requirement (1996 TDA, USD)	Implemented measures 1995-2005	Capital investment costs 1995 - 2005 (USD)	Planned measures for 2005 - 2015	Estimated costs for 2005-2015 plan implementation (USD)
Bulgaria	Rosenets	Oil Terminal	WWTP Construction	8,000,000	WWTP Construction	800,000	Construction planned for completion by end 2006	
Bulgaria	Varna	Port	WWTP Extension	700,000	WWTP Extension	700,000		
Bulgaria	Burgas	Port	WWTP Extension	2,200,000	WWTP Extension	2,000,000		
Bulgaria	Asparouhovo	Domestic	WWTP Extension	7,000,000	WWTP Extension	7,000,000	Plant closed	
Bulgaria	Balchik	Domestic	WWTP Extension	8,000,000	WWTP Extension		Construction started in 2006	8,000,000
Bulgaria	Sodi	Soda Ash	WWTP Construction	1,250,000	WWTP Construction	1,250,000	Under construction	
Bulgaria	Tsarevo	Domestic	WWTP Extension	8,000,000	WWTP Extension	8,000,000	Under construction	
Bulgaria	Neftochim	Refinery	WWTP Construction	2,500,000	WWTP extension	2,500,000	Construction planned for completion by end 2006	
Bulgaria	Sozopol	Domestic	Sewerage Extension	6,000,000	WWTP Extension		Construction starts 2006	6,000,000
Georgia	Kutaisi	Domestic	WWTP Reconstruction	6,000,000				
Georgia	Batumi	Domestic	WWTP Reconstruction	13,000,000			Water supply and sanitation for the town of Batumi	97,099,000
Georgia	Chiatura	Manganese	WWTP Construction	10,500,000				

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Country	Pollution source name	Pollution source type	Nature of investment identified under 1996 TDA	Estimated Financial Requirement (1996 TDA, USD)	Implemented measures 1995-2005	Capital investment costs 1995 - 2005 (USD)	Planned measures for 2005 - 2015	Estimated costs for 2005-2015 plan implementation (USD)
Georgia	Poti	Domestic	WWTP Reconstruction	2,000,000			Water supply and sanitation for the town of Poti	16,359,000
Gegorgia	Zestaponi	Metallurgy	WWTP Construction	1,500,000				
Georgia	Tskhaltubo	Domestic	WWTP Reconstruction	1,000,000				
Georgia	Zugdidi	Domestic	WWTP Reconstruction	1,500,000				
Romania	Fertilechim	Fertiliser	WWTP Rehabilitation	16,750,000	Fertiliser plant was closed after 1996. Phosphates installation was re-opened in 2003/2004, but only as a storage facility			
Romania	Petromidia	Petrochemical	WWTP Rehabilitation	9,324,000	Rehabilitation of the Navodari waste-water treatment plant, which serves both Petromidia Complex, and the neighboring city (2001-2002)	5,000,000	WWTP improvement and modernization	20,000,000
Romania	Constanta North	Domestic	WWTP Extension	8,000,000	Extension and modernization :	16,527,209+	Continuing - extension and modernization	21,491,692+
Romania	Eforie South	Domestic	WWTP Extension	1,800,000	Extension and modernization:	2,558,717+ 5,687,457	Continuing - extension and modernization.	11,805,282+ 19,395,606

Country	Pollution source name	Pollution source type	Nature of investment identified under 1996 TDA	Estimated Financial Requirement (1996 TDA, USD)	Implemented measures 1995-2005	Capital investment costs 1995 - 2005 (USD)	Planned measures for 2005 - 2015	Estimated costs for 2005-2015 plan implementation (USD)
Romania	Mangalia	Domestic	WWTP Rehabilitation	4,000,000	Extension and modernization	18,663,334		
Romania	Constantia South	Domestic / Industrial	WWTP Rehabilitation	42,420,000	Extension and modernization:	30,590,000+ 17,571,657	Finalisation of pumping stations, sewage system and reservoirs	5,654,188
Russia	Rostov-on-Don	Domestic	WWTP Extension	21,000,000				
Russia	Taganrog	Domestic	WWTP Extension	13,000,000				
Russia	Sheskhari	Oil	WWTP Rehabilitation	6,500,000	Reconstruction	Included in 172,000,000 USD investment		
Russia	Azov	Domestic	WWTP Extension	10,500,000				
Russia	Tuapse	Port	WWTP Construction	1,400,000	Under reconstruction	200,000	Finalise reconstruction	1,000,000
Russia	Anapa	Domestic	WWTP Extension	4,000,000	Under reconstruction	3,400,000	Finalise reconstruction	8,300,000
Russia	Gelendzhik	Domestic	WWTP Extension	4,000,000	Reconstruction	4,000,000		
Russia	Dzhoubga	Domestic	WWTP Extension	3,100,000	Not needed <sup>4</sup>			
Turkey	KBI Samsun	Copper	WWTP Rehabilitation	7,500,000				

<sup>4</sup>Population of Dzhoubga is 5,200 people. WWTP exists and complies with Existing standards

Country	Pollution source name	Pollution source type	Nature of investment identified under 1996 TDA	Estimated Financial Requirement (1996 TDA, USD)	Implemented measures 1995-2005	Capital investment costs 1995 - 2005 (USD)	Planned measures for 2005 - 2015	Estimated costs for 2005-2015 plan implementation (USD)
Turkey	TUGSAS Samsun	Fertiliser	WWTP Rehabilitation	9,600,000				
Turkey	Trabzon	Domestic	WWTP Construction	14,000,000				
Turkey	Trabzon (Center)	Domestic	WWTP Construction		Marine disposal	10,670,000		
Turkey	Trabzon (Sürmene)	Domestic	WWTP Construction				Marine Disposal	2,666,667
Turkey	Trabzon (Of)	Domestic	WWTP Construction				Marine disposal	2,666,667
Turkey	Trabzon (Vakfıkebir)	Domestic	WWTP Construction				Marine disposal	3,000,000
Turkey	Trabzon (Arsin)	Domestic	WWTP Construction				Marine disposal	2,000,000
Turkey	Trabzon (Çarşıbaşı)	Domestic	WWTP Construction				Marine disposal	2,000,000
Turkey	KBI Murgul	Copper	WWTP Rehabilitation	2,500,000				
Turkey	Samsun	Domestic	WWTP Construction	13,216,000				
Turkey	Samsun (Terme)	Domestic	WWTP Construction		Biological treatment	1,730,000	Marine disposal	3,000,000
Turkey	Görele	Domestic	WWTP Construction					

Country	Pollution source name	Pollution source type	Nature of investment identified under 1996 TDA	Estimated Financial Requirement (1996 TDA, USD)	Implemented measures 1995-2005	Capital investment costs 1995 - 2005 (USD)	Planned measures for 2005 - 2015	Estimated costs for 2005-2015 plan implementation (USD)
Turkey	Bulancak	Domestic	WWTP Construction				Marine disposal	3,333,333
Turkey	Zonguldak	Domestic	WWTP and sewerage	27,000,000				
Turkey	Zonguldak (Eregli)	Domestic	WWTP and sewerage	3,920,000	Marine disposal	1,660,000		
Turkey	Zonguldak (Gülliçli)	Domestic	WWTP and sewerage		Marine Disposal			
Turkey	Giresun	Domestic	WWTP Construction	7,840,000				
Turkey	Giresun (Bulancak)	Domestic	WWTP Construction		Marine disposal	68,666		
Turkey	Giresun (Centre)	Domestic	WWTP Construction				Marine disposal	4,000,000
Turkey	Ordu	Domestic	WWTP Construction	7,616,000				
Turkey	Ordu (Center)	Domestic	WWTP Construction		Marine disposal			
Turkey	Ordu (Fatsa)	Domestic	WWTP Construction		Marine disposal	2,130,000		
Turkey	Ordu (Ünye)	Domestic	WWTP Construction		Marine disposal	1,730,000		
Turkey	Bafra	Domestic	WWTP Construction	3,808,000				



Country	Pollution source name	Pollution source type	Nature of investment identified under 1996 TDA	Estimated Financial Requirement (1996 TDA, USD)	Implemented measures 1995-2005	Capital investment costs 1995 - 2005 (USD)	Planned measures for 2005 - 2015	Estimated costs for 2005-2015 plan implementation (USD)
Ukraine	Pivdenni	Domestic	WWTP Construction	1,200,000	General reconstruction	3,900,000	General reconstruction	37,000,000
Ukraine	Pivnichni	Domestic	WWTP Construction	39,600,000	General reconstruction		General reconstruction	61,000,000
Ukraine	Balaklava	Domestic	WWTP Construction	7,800,000				
Ukraine	Yevpatoria	Domestic	WWTP Construction	9,500,000	Reconstruction and updating	5,170,000	Reconstruction of sewage pipeworks, etc.	4,200,000
Ukraine	Sevastopol	Domestic	WWTP Construction	13,300,000				
Ukraine	Yalta	Domestic	WWTP Construction	3,100,000	General reconstruction	460,000		
Ukraine	Gurzuf	Domestic	WWTP Construction	4,200,000	General reconstruction	1,100,000		
Ukraine	Kamish Burunski	Iron ore	WWTP Construction	1,200,000				
Ukraine	Illichevsk	Port	WWTP Construction	1,978,000				
Ukraine	Krasnoperekopsk	Brom	WWTP Construction	600,000	General repair works	4,800	Routine repairs	

**II.4. Port Reception Facilities****Bulgaria**

All ports/Year		Actual loading of PRF for Oil/Oily waters, cub. m/year	Actual loading of PRF for Garbage, cub. m/day	PRF for Chemicals, cub. m/year	Total Number of PRF in all ports
	2001				
	2002	3022,151	1573,58	NIL	10
	2003	6772,29	1683,971	NIL	10
	2004	3051,224	2954,905	NIL	12
	2005	6321,332	1967,573	NIL	16

**Georgia**

Port/Year		PRF for Oil/Oily waters, cub.m	PRF for Chemicals cub. M (Category MARPOL)				PRF for Garbage, cub. m	Total Number of PRF in all ports
			A	B	C	D		
Batumi	2003	300	n/a	n/a	n/a	n/a	30	1
Poti	2003	392	n/a	n/a	n/a	n/a	5	2
Supsa	2003	-	n/a	n/a	n/a	n/a	-	All from Poti
Kulevi	2008	500 end of 2008	n/a	n/a	n/a	n/a	45	1

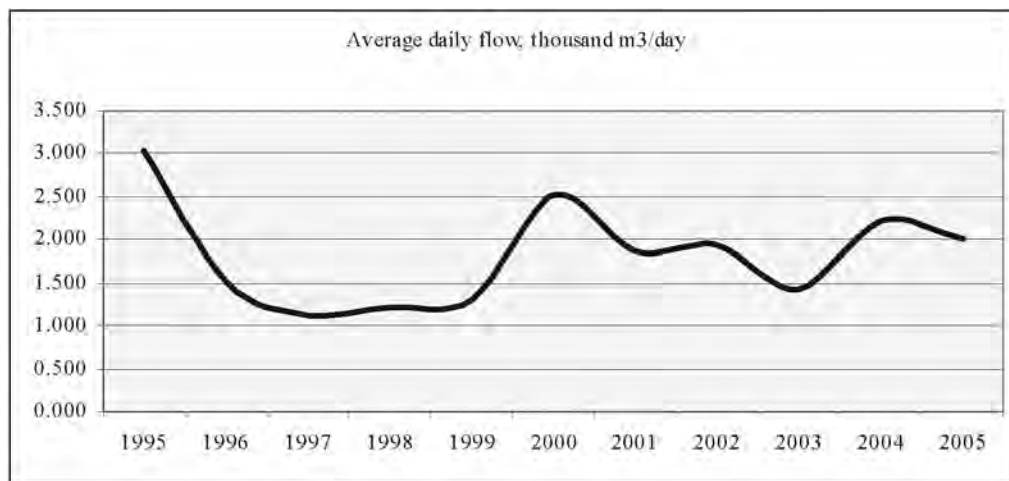
**Romania, Russian Federation, Ukraine**

Country		PRF for Oil/Oily waters, cub. m/day	PRF for Garbage, cub. m/day	PRF for Chemicals, cub. m/day	Total Number of PRF in all ports
Romania	2001	6800	800	0	7
	2002	7200	900	0	7
	2003	7600	1000	0	7
	2004	9100	1000	0	8
	2005	8700	1300	0	9
	2006	9000	1250	0	10
	2007	8200	1300	0	10
Russian Federation	2001				
	2002				
	2003				
	2004	335 616 (oily water)	12 688	6222	2 PRF, 3 Incinerators, Landfills
	2005				
Ukraine.	2001	No data reported			
	2002				
	2003				
	2004				
	2005				

***Russian Federation:***

Ballast water treatment plants

Fig. II.4.1. Ballast Water treatment plant in Tuapse- average daily flow, m3.day-1



Year	2000		2001		2002		2003		2004		2005	
	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads
Ballast water treatment plant in Tuapse												
Average daily flow, thousand m <sup>3</sup> /day	2.740	2.518	2.740	1.877	2.740	1.929	2.740	1.425	2.740	2.224	2.740	2.003
Total annual flow, thousand m <sup>3</sup> /year	1000.0	919.3	1000.0	685.1	1000.0	704.1	1000.0	519.5	1000.0	811.8	1000.0	731.4
BOD-5, mgO <sub>2</sub> /l	10.52	10	10.52	11.3	10.52	11.16	11.3	11.04	11.3	11.6	11.3	12
BOD-5, t/year	10.52	9.2	10.52	7.8	10.52	7.8	11.3	5.8	11.3	9.3	11.3	9
TSS, mg/l	4.00	3.60	4.00	4.00	4.00	3.70	4.00	3.40	4.00	4.30	4.00	4.50
TSS, t/year	4.00	3.30	4.00	2.80	4.00	2.59	4.00	1.80	4.00	3.40	4.00	3.40
Petroleum Hydrocarbons, mg/l	4.00	4.00	3.80	4.90	3.80	5.30	4.90	5.22	4.50	5.50	1.99	5.80
Petroleum Hydrocarbons, t/year	4.00	4.30	3.80	3.40	3.80	3.71	4.90	2.70	4.50	4.40	1.99	4.40

Year	2000		2001		2002		2003		2004		2005	
	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads	Discharge Permit Limit*	Measured Discharge loads
Ballast Water Treatment Plant in Novorossiysk												
Average daily flow, thousand m <sup>3</sup> /day	3,384	2,421	6,849	4,201	8,219	6,095	6,095	5,492	6,094	6,163	6,163	5,703
Total annual flow, thousand m <sup>3</sup> /year	1235	883.7	2500	1533.6	3000	2224.8	2224.8	2004.4	2224.4	2249.6	2249.6	2,081.5
TSS, mg/l	5.72	5.22	5.72	5.54	5.72	5.54	5.72	5.33	5.72	5.099	5.72	5.30
TSS, t/year	7.06	4.61	14.3	8.5	17.18	12.319	12.7256	10.6876	12.724	11.472	12.868	11.023
Petroleum Hydrocarbons, mg/	1.88	1.83	1.83	1.83	1.83	1.82	1.82	1.78	1.78	1.75	1.75	1.74
Petroleum Hydrocarbons, t/year	2.47	1.62	4.57	2.8	5.49	4.0399	4.0399	3.5684	3.959	3.947	3.947	3.621

**Turkey**

PRF in Hopa port, Giresun port, Trabzon port, Samsun TCDD PORT.

<b>SAMSUN TCDD PORT</b>	
Year	Total amount
2000	675 m3
2001	625 m3
2002	650 m3
2003	610 m3
2004	580 m3
2005	605 m3

**II.5. Existing ballast water management requirements according to Black Sea countries (National reporting).**

Country	Ballast water Management in place	Ballast Water Reception Facilities	Ballast Water Surveillance	Other
Bulgaria	Varna, mandatory BWE in Mediterranean for ballast which originates outside the Mediterranean. Similar requirement planned for the Port of Burgas. BWE in Black Sea not acceptable	required [A.868(20)] and checked during vessel inspections		regional cooperation concerning designation of ballast water exchange areas in Black sea required
Georgia	ballast water management guidelines A.868(20) implemented. Ballast water reception facilities available in Batumi and Poti	required [A.868(20)]		
Romania			Constanta, random biological monitoring of ballast water	
Russian Federation	fully developed and operational ballast water management system implemented, i.e. ballast water exchange and biological pollution control. Ballast water to be exchanged in the open Black Sea (> 12 nm from shore). Novorossiysk, non-compliance may cause delay and/or penalties.		Novorossiysk, random biological monitoring of ballast water	
Turkey	no legislation/regulations governing ballast water management in force. A ballast water management system in development.	required [A.868(20)] and checked		

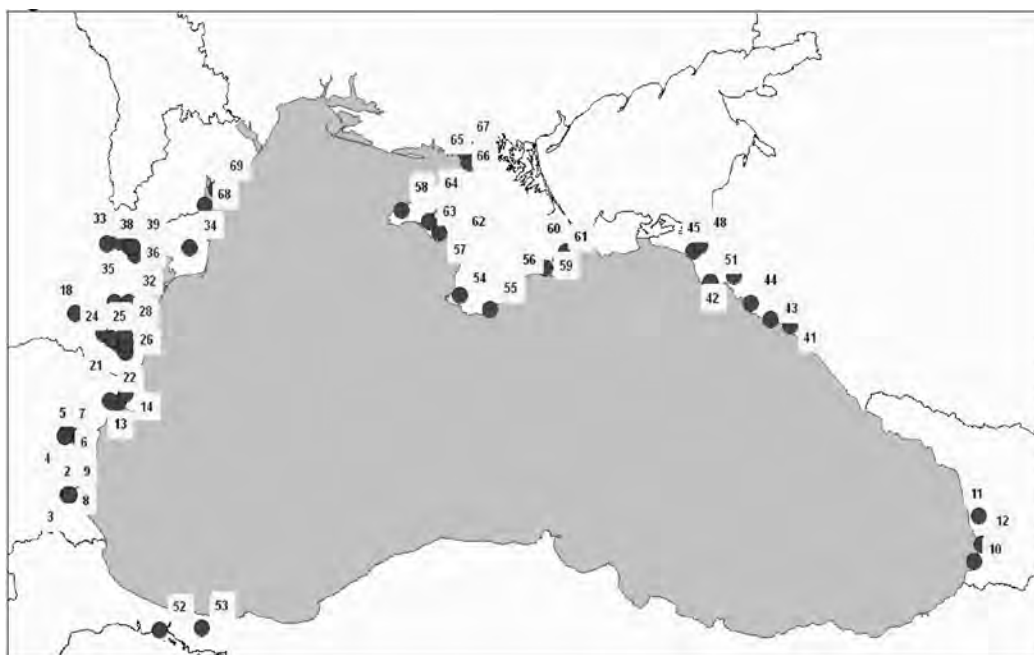
Country	Ballast water Management in place	Ballast Water Reception Facilities	Ballast Water Surveillance	Other
Ukraine	ballast water management guidelines A.868(20) implemented. Ships with unexchanged ballast water are prohibited to enter territorial sea	required [A.868(20)] and checked	Sampling for chemical contamination only.	

## ***II.6. Landfills/Dumping sites as of 2006, volume of dumped dredged spoils***

### ***II.6.1. List of Landfills (Key to the Figure below)***

No	Landfill	No	Landfill	No	Landfill
1	Varna, village of Vaglen	22	Negru Voda	48	Yurovka village
2	Bourgas Bratovo	23	RAJAC WWTPs sludge deposit - Luminita	51	Glebovka village
3	Marinka (Bourgas)	24	SC Lafarge Romcim Medgidia	52	Istanbul, Kemerburgaz/Odayeri
4	Varna Beloslav	25	SC Etermed SA Medgidia	53	İstanbul, Şile/Kömürcüoda
5	Varna Solvey Sodi (ash-slug pond)	26	SC Argus SA Constanta	54	Pervomaisk gully
6	Varna Polymeri (slug pond)	28	Marway Fertilchim SA - Navodari	55	Gaspra, Yalta
7	Agrapolychim Devnjya	29	Agighiol	56	Alushta
8	Bourgas Luk Oil	30	Vararie	57	Evpatoria,
9	Bourgas Copper Mine	31	Macin	58	Chernomorskoe
10	Batumi	32	Babadag	59	Sudak
11	Poti	33	Isaccea	60	Feodosia
12	Kobuleti	34	Sulina	61	Koktebel
15	Constanta -Ovidiu	35	SC Alum SA, Tulcea	62	Saki
13	Mangalia - Albesti	36	SC Feral SRL, Tulcea	63	Novoozernoe, GKPSU Ekologia
14	Costinesti	38	Loo village	64	Krasnoperekopsk, Crimea soda plant site, Krasnoe lake
15	Constanta port	39	Adler village	65	Krasnoperekopsk, Brom plant, Staroe lake
16	Eforie South	40	Tuapse	66	Armyansk, Titan plant
25	Medgidia	41	Lermontovo village	67	Armyansk
18	Harsova	42	Kabardinka village	68	Primorske
19	Cernavoda	43	Tekos village	69	Primorske
20	Techirghiol	44	Dzhanhot village		
21	Basarabi	45	Krasniy village		

Figure II. 6. 1. Location of known landfills



#### II.6. 2. Dumping Sites in the Black Sea area<sup>5</sup> (National reporting, BSIS)

Country	Deposit or dumping site	Coordinates	Categories of waste	Origin: Name of Water System	Type of areas dredged	Estuary
GE	Poti Port	No data	dredged spoils	Black Sea	Port	Chorokhi
RO	Constanta Southern Port	N 44°05'48, E 28° 40'08	dredged spoils	Black Sea	Port	
RO	Sulina jetis	N 44° 9' , E 29° 4' 42	dredged spoils	Danube River	Canal	
RO	Constanta Southern Port	N 44°05'48, E 28° 40'08	dredged spoils	Black Sea	Port	
RO	Sulina jettis	N 44° 9' , E 29° 4' 42"E	dredged spoils	Danube River	Canal	Danube
RU	Novorossiysk	N 44°37'18, E 37°54'57	dredged spoils	Black Sea	port harbor	
RU	Temruik-Kavkaz		no dredging	Black Sea	port harbor	
UA	Odessa port	N 46°24'00, E 31°00'00	dredged spoils	Black Sea	port harbour	
UA	Illichivsk port	N 46°12'00 , E 30°49'00	dredged spoils	Black Sea	port harbour	
UA	Kherch port	N 44°51'00 , E 36°24'00	dredged spoils	Black Sea	port harbour	
UA	Uzhnyi Port	N 46°25'23, E 31°01'30	dredged spoils	Black Sea	port harbour	
UA	Sevastopol Port	N 44°32'00, E 33°05'00				
UA	Dnister, Dnister, Dnipro-Bug limans	No data	dredged spoils	Black Sea	port harbour	

<sup>5</sup> Bulgaria and Turkey do not report on dumping



## II.7. Status of National Contingency Plans (Based on National and Regional Gap Analysis reports, 2007)

	National Oil Spill Contingency Plan (s)	Implementing bodies/area of response	Risk assessment / priority areas	Emergency response centers	Cooperation with private sector
Bulgaria	Exist (2003) - needs update	Identified/identified	Made / identified	Established	Involved
Georgia	Draft exist (2007)	Identified/identified	Will be made	No information	No information
Romania	Exist (2006)	Identified/identified	No information	Established	Involved
Russian Federation	Exist (2003)	Identified/identified	No information	No information	Involved
Turkey	Under preparation (to be ready and operational in 2008-2010 for Tiers 1-2-3) Local plans are available and applied At present, provisions of Law No:5312 are applied.	Will be identified/identified  At present, identified according to the Law	Included (Already made, regional/national plans are being prepared according to this database and scenarios of spill dispersion)	Included	Foreseen
Ukraine	Under preparation Local plans are available and applied	No information	No information	No information	Foreseen

## II. 8. Number (n) and volume (metric tones) of oil spills between 1996-2006 in the Black Sea (National reporting, BSIS)

Country	1996		1997		1998		1999		2000		2001	
	n	t	n	t	n	t	n	t	n	t	n	t
Bulgaria												
Georgia	6	18	17	40	11	32	19	56	17	42	6	9
Romania	5	15.3	6	176.1	5	13.4	4	4.9	3	29.8	3	0.94
Russian Federation												
Turkey												
Ukraine	4	6.0	6	50.7	6	8.1	8	4.3	9	9.1	19	3.5
Total	15	42	29	267.7	22	57.1	31	73.3	54	88.1	28	13.44

Country	1997		1998		1999		2000		2001	
	n	t	n	t	n	t	n	t	n	t
Bulgaria			4	< 1	6	< 1	11	< 1	15	< 1
Georgia			1	1.0			2	0.1	3	6
Romania	7		2	0.23	3	1.3	9	9	8	42.15
Russian Federation	7	2.25	1	3.0	6	1.09	10	31.63	10	10.29
Turkey	1	25	1	230					3	
Ukraine	5	8.79	16	14.64	13	1.2	4	37.0	6	75
Total	20	36.04	25	248.87	28	3.59	36	77.73	45	133.44

**II.9. Coastal Lagoons and Spawning Grounds Intended for Restoration in the Years 2001-2005.**

Country	Lagoons and Spawning Grounds Intended for Restoration	Effects of measures
Bulgaria	Project for protection an area of about 6 500 ha along the northern part of the Bulgarian Black Sea coast by means of so called "cold mines" - protectors against illegal bottom trawling, which destroy the spawning and nursery grounds, mainly for Gobies and Turbot.	The project was implemented and the turbot stocks are now in the process of assessment. Gobies and Turbot feel better not because of the mines, but due to stronger control on illegal fishery and lack of anoxia.
Georgia	Poti - Ochamchiri	No management in place, not designated as MPAs, no special protection measures.
Romania	The Danube Biospheric Biological Reserve and Marine Reserve 2 Mai Vama Veche	They were designated as MPAs
Russian Federation	The Russian Government and the State Duma elaborate a new Bill on sturgeons conservation that envisages measures for protection of these areas.	The sturgeons are still in a very depleted stay.
Turkey	No information is available.	Fishing of Turbot is forbidden in May
Ukraine	During the spawning period fishery activities on spawning grounds not allowed.	There is a strict control and fisheries inspections during spawning periods, there were bans for Turbot and sturgeon catches for a number of years, recently the ban for turbot was waived due to improved stock.

**II.10. Illegal Fishing Practices (SoE 2008)**

Mean annual and unreported catches and total abundance of Russian sturgeon according to the data of trawl surveys in 1988 - 2005 in the Sea of Azov (assessments of unreported catch were taken from Shlyakhov et al., 2005)

Years	Total abundance (thousand individuals)	Catch, tons	
		Official	Unreported
1988-90	12606	772*	4814
1992-94	8264	1143	3213
1995-97	4357	427	2040
1998-00	2785	156	984
2001-03	1757	6	109
2004-05	745	1	54

\* - Russian sturgeon and starred sturgeon

## ***II.11. Release of Young Commercial Fishes into the Natural Water Bodies of the Azov and Black Sea Basin***

### ***Bulgaria***

<b>Year</b>	<b>Total number</b>	<b>A.gulld.</b>	<b>Average weight</b>	<b>H.huso</b>	<b>Average weight</b>	<b>A.rutenus</b>	<b>Average weight</b>
1998	1 500	1 000	250	200	300	300	180
1999	30 100	27 400	230	2 700	320	-	-
200	21 150	20 400	200	750	350	-	-
2001	28 100	28 100	200	-	-	-	-
2002	23 530	22 530	280	-	-	1 000	-
2003	166 617	161 317	82	5 300	5	-	-
2004	211 126	127 000	18,87	-	-	-	-
2005*	120 000	120 000	20	-	-	-	-
Total	482 123	387 747		8 950		1 300	

### ***Georgia***

- no release.

### ***Romania***

no reporting.

### ***Russia***

no reporting.

### ***Turkey***

The last reporting on re-stocking of Turbot (*Psetta maxima*) was submitted in 2002 (re-stocking is continued at present). There has been no re-stocking programme for other species.

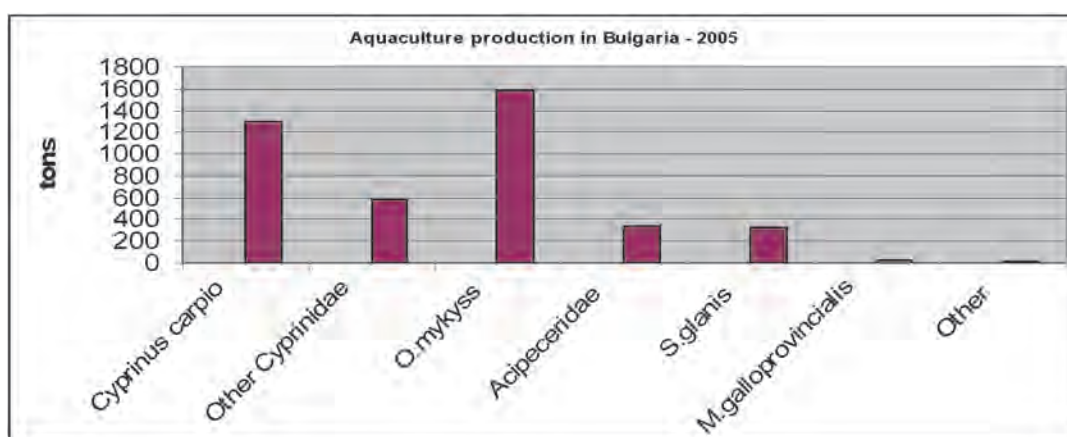
<b>Year</b>	<b>Cultivated Species, Latin</b>	<b>Number of released young fish per year</b>	<b>Name of Mariculture Enterprise</b>	<b>Geographical location (if possible coordinates)</b>
1999	<i>Psetta maxima</i> (Turbot)	1 839	Trabzon Central Fisheries Research Institute	Trabzon
2000	<i>Psetta maxima</i>	5 000	Trabzon Central Fisheries Research Institute	Trabzon
2001	<i>Psetta maxima</i>	2 000	Trabzon Central Fisheries Research Institute	Trabzon
2002	<i>Psetta maxima</i>	10 000	Trabzon Central Fisheries Research Institute	Trabzon
Total		18 839		

### Ukraine

	Year	Cultivated Species, Latin	Number of released young fish per year, millions per year	Name of Mariculture Enterprise	Geographical location (if possible coordinates)
	2002	Acipenser gueldenstaedtii	2.366	The Dneprovsky (Dnieper) Sturgeons' Rearing Plant	The Lower Dnieper
	2002	Acipenser stellatus	0.142		
	2002	Psetta maxima	0.250	Krymazcherrybvod	The Karkinitzky Bay
Total	2002	Acipenseridae, Pleuronectiformes	2.758		
	2004	Acipenser gueldenstaedtii	1.071	The Dneprovsky (Dnieper) Sturgeons' Rearing Plant	The Lower Dnieper
	2004	Psetta maxima	0.45	Krymazcherrybvod	The Karkinitzky Bay
Total	2004	Acipenseridae, Pleuronectiformes	1.521		
	2005	Acipenser gueldenstaedtii	0.354	Industrial Experimental Dneprovsky (Dnieper) Sturgeons' Rearing Plant	The Lower Dnieper
Total	2005	Acipenseridae, Pleuronectiformes	0.354		

## II.12. Aquaculture Enterprises and Production

### Bulgaria



Black Sea mussel (*Mytilus galloprovincialis*)

Year	2004	2005
Production, tons	52.89	170.59

### **Georgia**

not reported

### **Romania**

One small marine farm named MARICULTURA SRL. The species cultivated is *Mytilus galloprovincialis* on long line system. This farm has not reported production.

### **Inland Aquaculture**

According to the statistics provided by Ministry of Agriculture, there are 100,000 ha for aquaculture activities in Romania, structured as follows: 84,500 ha fish farms, 15,500 hatcheries, and 25 ha trout farms; 381 companies were registered on 31.03.2006, of which 166 with hatcheries. Out of the 100,000 ha used for aquaculture in 1989, degraded or unused areas in 2005 amounted at 28,000 ha

The species structure production in Romania is dominated by the cyprinids, both native and imported from Asia, representing about 85% of the total no. of species, followed by trout, zander, pike, catfish, fresh water sturgeon (15%).

The main species of fish bred are: common carp, East-Asian carp (silver carp, grass carp, black carp), rainbow trout, pike perch, pike, catfish and crucian carp.

The aquaculture enterprises are recorded in the Fish Farms Register, within the National Agency for Fishing and Aquaculture, which issues an aquaculture license. Until 31.03.2006, 381 companies were registered, of which 166 with hatcheries.

At the end of 2005, the aquaculture production was of 7,248 tons and represented 54.55% of the total fish production. The production in 2005 stands for 36.73% of the one in 1995. Over the past years, aquaculture production has been decreasing, from 9041.69 tons in 2003, to 8,056 tons in 2004 and up to 7,284 tons in 2005.

### **Russian Federation**

no reporting.

### **Turkey**

Black Sea region (Inland-Marine)

YEARS	2002	2003	2004	2005	2006	2007
Number of Inland Firms	16	373	372	408	284	355
Inland Capacity (tons/yr)	183	4.824	5.195	4.767	5.456	7.197
Number of Marine Firms	19	17	16	13	12	13
Marine Capacity (tons/yr)	1.434	1.504	1.444	1.830	3.410	4.810

No mussel rearing in Turkish Waters as per 2006.

### ***Ukraine***

<b>Year</b>	<b>Mussel Farms Production (Black Sea and Kerch Strait)&amp; Special Commercial Fish Rearing Farms (Odessa Region), (tons/yr)</b>	<b>Production of only marine species fish, (tons/yr)</b>
1996		250
1997		37
1998		-
1999		10
2000	6	15
2001	14	100
2002	18	77
2003	25	216
2004	26	400
2005	33	736
2006	30	413
2007	23	535

### ***II.13. Black Sea Facilities Keeping Marine Mammals in Captivity (Dolphinarium)***

During the 15th meeting of the Scientific Committee of ACCOBAMS the following information was presented (ACCOBAMS-SC5/2008/Doc 15):

#### ***Bulgaria***

A Party to ACCOBAMS, holds dolphins in captivity in one facility. The Varna Dolphinarium was established in 1984 with five wild-caught bottlenose dolphins imported from Cuba, although there are no CITES records to confirm this. At present most animals (but one) are represented by descendants of those Caribbean cetaceans. Shows are offered to the public.

#### ***Georgia***

We are not aware of any facilities holding dolphins in captivity in Georgia at present, a Party to ACCOBAMS. A former dolphinarium at Batumi was closed in 1991. Recent reports suggest there are proposals to reopen a facility there, as new Batumi dolphinarium is currently under construction. The CITES trade database records an import of three wild-caught bottlenose dolphins from Ukraine in 2001, but WDCA is not able to verify whether the trade actually occurred.

Therefore at present there are no operating dolphinarium and captive cetaceans in Georgia. In the early 1990s the bottlenose dolphins were taken from the former Batumi dolphinarium and exported to Yugoslavia, then re-exported to Malta, finally all of them died in captivity.

#### ***Romania***

Romania, a Party to ACCOBAMS, holds dolphins in captivity in one facility. The Constanta Dolphinarium holds only one Black Sea bottlenose dolphin imported from Russia, although three animals of the same species were imported in or around 1998. In 2005, a common dolphin was also held at the dolphinarium, following a stranding but has now died. CITES trade data records the import of three wild-caught bottlenose dolphins from the Russian Federation in 1998. There is also one southern sea lion at the pool in Constanta.

#### ***Russian Federation***

There are at least eight facilities holding dolphins in captivity in Russia, an ACCOBAMS range state. The facilities are located in Bolshoy Utrish (Anapa), Maly Utrish (Novorossiysk), Gelendzhik, Sochi, Moscow,

St. Petersburg, Rostov-na-Donu and Yessentuki. Dolphins are also used in Russian traveling circuses. Live captures and international trade are important issues in the Russian Federation. Well over 100 wild-caught Black Sea bottlenose dolphins were exported from the Russian Federation between 1990 and 2001 to dolphinarium facilities around the world. The trade, although continuing, has lessened since a proposal was approved at the 12th Conference of the Parties to CITES to retain the Black Sea bottlenose dolphin on CITES Appendix II but with a quota set at zero for the export of live dolphins wild-captured in the Black Sea for primarily commercial purposes. Between 1990 and 2005, 165 belugas were exported from the Russian Federation for display in dolphinariums around the world. The vast majority, if not all of these animals, were captured from the wild. CITES trade data records the export of 156 bottlenose dolphins between 1992 and 2003.

There are two dolphinariums in Moscow, and another one is situated in Lazarevskaya (Russian Caucasus).

### **Turkey**

Turkey, an ACCOBAMS range state has at least nine facilities holding dolphins in captivity. In November 2006 there were seven facilities:

- 1) Dolphinland, Antalya holds one beluga and two bottlenose dolphins from Russia and offers shows, swimming with dolphins and dolphin assisted therapy.
- 2) Troy Dolphinarium, Antalya holds one beluga and two bottlenose dolphins from Ukraine and Russia and offers shows and swimming with dolphins.
- 3) Moonlight Dolphinarium, Antalya holds two bottlenose dolphins from Ukraine and offers shows, swimming with dolphins and dolphin assisted therapy.
- 4) Dolphinarium, Kas holds two bottlenose dolphins captured in Turkey and offers dolphin assisted therapy.
- 5) Adaland, Kuşadası holds three bottlenose dolphins and offers shows.
- 6) Dolphinarium, Bodrum holds one bottlenose dolphin from the Black Sea and offers shows and swimming with dolphins.
- 7) Aqua Dolphin, Istanbul holds one bottlenose dolphin from the Black Sea and offers shows.

An eighth dolphinarium has opened in Marmaris offering dolphin assisted therapy, a ninth, Adaland, in Alanya, due to open in April 2008 displaying bottlenose dolphins imported from Japan and offering dolphin assisted therapy and reports suggest additional facilities are also proposed in Istanbul and Fethiye. In 1995, four Black Sea bottlenose dolphins were imported from Ukraine and held in sea pens in Marmaris harbour. They were returned in the same year and the facility closed. CITES trade data records the import of 23 bottlenose dolphins, eight each year in 2001 and 2002, including four from Ukraine, four introductions from the sea, four from the Russian Federation and a further four from Ukraine that originated in the Russian Federation and seven in 2005 and 2006 from Russian and Ukraine, including five wild-captured from Ukraine.

### **Ukraine**

There are 11 facilities holding dolphins in captivity in Ukraine, a Party to ACCOBAMS.

1. Yalta (two dolphinariums) holds two bottlenose dolphins and a beluga.
2. Odessa dolphinarium (two) hold at least two bottlenose dolphins.
3. Sudak dolphinarium (Karadag biostation) holds at least two bottlenose dolphins for shows and research.
4. Yevpatoria dolphinarium holds at least two bottlenose dolphins for dolphin therapy.
5. Ukraine State Oceanarium/Sanatorium holds around a dozen bottlenose dolphins, including individuals captured in the Ukrainian waters of the Black Sea, for swimming with dolphins and dolphin assisted therapy.

Further facilities are located at Partenit (Alushta), Feodosia, Koktebel (Feodosia) and Sevastopol (two). Ukraine was involved in the trade in bottlenose dolphins from the Black Sea between the mid-1980s and late 1990s. CITES trade data records imports of 26 wild-caught bottlenose dolphins from the Russian

Federation between 1995 and 2006. Exports of 27 bottlenose dolphins, the majority wild-captured, are also recorded between 2002 and 2006, including to Belarus, Lebanon, Turkey and Georgia.

Marine mammals rehabilitation center is situated on lake Donuzlav (NW Crimea). II. 14. Protected Areas

### II. 14. Protected Areas

#### II.14.1. Full List of Protected Areas in the Black Sea region

The list of protected areas in the Black Sea region may be found at ([http://www.unep-wcmc.org/protected\\_areas/UN\\_list/](http://www.unep-wcmc.org/protected_areas/UN_list/))

Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Zlatni pyassatsi	Bulgaria	28.033	43.333	Nature Park	V			
Kamtchia	Bulgaria	27.850	43.033	Strict Nature Reserve	Ib	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1951	842
Kaliakra	Bulgaria	28.483	43.333	Strict Nature Reserve	Ib			
Silistar	Bulgaria	27.850	42.167	Protected Site	IV			
Nakovo kladenche	Bulgaria	28.017	42.050	Natural Monument	III			
Nos Emine	Bulgaria	27.883	42.750	Natural Monument	III			
Nos Chervenka	Bulgaria	27.654	42.431	Natural Monument	III			
Skalni obrazuvania	Bulgaria	27.733	42.333	Natural Monument	III			
Smrikite	Bulgaria	27.898	42.775	Protected Site	III			
Nesebar	Bulgaria	27.728	42.656	State Game Breeding Station	Unset			
Koketrays	Bulgaria	27.717	42.650	Protected Site	IV			
Koreniata	Bulgaria	27.667	42.433	Protected Site	III			
Halm na osvoboditelite	Bulgaria	27.533	42.550	Natural Monument	III			
Piasachni diuni	Bulgaria	27.583	42.467	Natural Monument	III			
Piasachni diuni	Bulgaria	27.716	42.357	Natural Monument	III			
Belite skali	Bulgaria	27.899	42.882	Natural Monument	III			
Yailata	Bulgaria	28.529	43.428	Protected Site	III			



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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Bichvinta-Miusera	Georgia	40.433	43.189	Nature Reserve	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1965	3,645
Kolkheti	Georgia	41.600	42.230	National Park	II			
Kobuleti	Georgia	41.800	41.850	Hunting Reserve	IV			
Dunele marine de la Agigea	Romania	28.644	44.089	Nature Reserve	IV			
Periteasca-Gura Portita	Romania	29.033	44.733	Nature Reserve (part of 28791)	Unset	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1961	3,900
Danube Delta	Romania	29.300	45.300	Biosphere Reserve	II	Marine - IUCN MPA, Intertidal - IUCN MPA & Subtidal - IUCN MPA	01/01/1991	576,216
Complexul Periteasca - Leahova	Romania	29.017	44.717	Scientific Reserve (part of 28791)	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1990	4,125
Sahalin-Zatoane	Romania	29.417	44.817	Nature Reserve (part of 28791)	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1990	24,250
Capul Dolosman	Romania	28.917	44.750	Scientific Reserve (part of 28791)	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1990	125
Grindul Lupilor	Romania	28.917	44.667	Scientific Reserve (part of 28791)	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1990	2,075
Istria-Sinoe	Romania	28.767	44.517	Nature Reserve (part of 28791)	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1990	350
Grindul Chituc	Romania	28.900	44.550	Scientific Reserve (part of 28791)	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1990	2,300

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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Vama Veche - 2 Mai (Acvatoriul litoral marin)	Romania	28.641	43.763	Scientific Reserve	Ia			
Delta Dunarii	Romania	29.291	44.749	Biosphere Reserve - Marine Buffer Zone to 50 m depth (part of 28791)	Unset			
Mys Panagiya	Russian Federation	36.633	45.141	Nature Monument	III			
Mys Zheleznyi Rog	Russian Federation	36.737	45.116	Nature Monument	III			
Ozero Solenoe	Russian Federation	36.886	45.117	Nature Monument	III			
Gora Miska	Russian Federation	37.420	45.268	Nature Monument	III			
Mestoobitaniya lotosa v limane Srednem	Russian Federation	38.167	45.770	Nature Monument	III			
Mestoobitaniya lotosa v Sadkovskom girle	Russian Federation	38.085	45.904	Nature Monument	III			
Skala Praus	Russian Federation	38.172	44.447	Nature Monument	III			
Skala Kiseleva	Russian Federation	39.034	44.123	Nature Monument	III			
Sochinskiy	Russian Federation	39.471	43.962	Zakaznik	IV	Unverified by MPA Global		48,450
Bol'shoi Utrish	Russian Federation	37.404	44.754	Nature Sanctuary or Partial Reserve	IV	Unverified by MPA Global		8,700
Tamano-Zaporozhskiy	Russian Federation	36.765	45.292	Nature Sanctuary or Partial Reserve	IV	Unverified by MPA Global		30,000
Priazovskiy	Russian Federation	37.709	45.593	Zakaznik	IV			
Ozero Khanskoe	Russian Federation	38.376	46.245	Nature Monument	III			
Kosa Dolgaya	Russian Federation	37.734	46.681	Nature Monument	III			
Rostovskoe GOOH (Azovskiy uchastok)	Russian Federation	39.277	47.167	Managed Resource Protected Area	VI	Marine - IUCN MPA, Subtidal - IUCN MPA		?
Girlovskiy	Russian Federation	39.278	47.231	Zakaznik	IV			

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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Del'ta Dona	Russian Federation	39.490	47.136	Zakaznik	IV			
_N/A No 901 (Rostovskaya obl.)	Russian Federation	39.189	47.146	Other Area	Unset	Marine - IUCN MPA, Subtidal - IUCN MPA		?
Acarlar Golu	Turkey	30.467	41.133	Game Reserve	Unset			
Haciosman Forest	Turkey	36.333	41.333	Nature Reserve	Ia			
Kucukkertil Forest	Turkey	37.867	41.000	Recreation Area	Unset			
Camgol Forest	Turkey	36.367	41.283	Protected Forest	Unset			
Kuztepe Forest	Turkey	35.150	42.033	Recreation Area	Unset			
Meryem Ana Forest	Turkey	39.717	41.000	Recreation Area	Unset			
Sarikum	Turkey	34.850	42.017	Nature Reserve	Ia			
Chernomorskiy	Ukraine	31.921	46.273	National Biosphere Zapovednik	Ia	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/19 27	87,348
Azovo-Sivashskoye	Ukraine	35.200	46.217	Regional Zakaznik	IV	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/19 57	57,430
Krymskoye	Ukraine	34.300	44.750	Regional Zakaznik	IV	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/19 57	42,957
Karadagskiy	Ukraine	35.228	44.928	Nature Zapovednik	Ia	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/19 79	2,874
Mys Martiyan	Ukraine	34.247	44.508	Nature Zapovednik	Ia	Marine - IUCN MPA, Intertidal - IUCN MPA & Subtidal - IUCN MPA	01/01/19 73	240
Krimskiy	Ukraine	34.167	44.467	State Zakaznik	Ia			
Azovo-Sivashskiy	Ukraine	34.495	46.110	National Park	II			
Gora Opuk ta ostrovi Skeli-Korabli	Ukraine	36.220	45.030	Zapovedne Urotchische	III			
Gora Opuk ta ostrovi Skeli-Korabli	Ukraine	36.190	45.020	Zapovedne Urotchische	III			

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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Mis Alchak u m.Sudak	Ukraine	34.990	44.830	Zapovedne Urotchische	III			
Atlesh	Ukraine	32.550	45.330	Zapovedne Urotchische	III			
Gay fistashki tupolistoi	Ukraine	34.490	44.730	Zapovedne Urotchische	III			
Nikits'kiy	Ukraine	34.230	44.500	State Botanical Garden	Unset			
Melas'kiy	Ukraine	33.820	44.390	Regional Park - Monument of Orchard - Park Art	III			
Nizhnya Oreanda	Ukraine	34.140	44.450	Regional Park - Monument of Orchard - Park Art	III			
Girniy	Ukraine	34.300	44.550	Regional Park - Monument of Orchard - Park Art	III			
Komsomol's'kiy	Ukraine	34.310	44.550	Regional Park - Monument of Orchard - Park Art	III			
Akval'niy kompleks Arabats'koistrilki	Ukraine	35.520	45.280	Regional Nature Monument	III			
Pribrezhniy akval'niy kompleks u m. Opuk i ostroviv	Ukraine	36.210	45.020	Regional Nature Monument	III			
Mis Chauda	Ukraine	35.830	45.000	Regional Nature Monument	III			
Priberezhniy kompleks bilya girs'kogo masivu Karaul-Oba	Ukraine	34.890	44.810	Regional Nature Monument	III			
Priberezhniy kompleks mizh s.Noviy Svit ta m.Sudak	Ukraine	34.940	44.830	Regional Nature Monument	III			
Bakal's'ka kosa, ozero ta priberezhniy kompleks	Ukraine	33.150	45.740	Regional Nature Monument	III			

Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Chastina poberezhzhyia bilya s. Mikolaivka	Ukraine	33.600	44.960	Regional Nature Monument	III			
Skelya Ifigeniya	Ukraine	33.890	44.400	Regional Nature Monument	III			
Priberezhniy kompleks bilya skeli Diva ta gori Kishka	Ukraine	33.990	44.390	Regional Nature Monument	III			
Priberezhniy kompleks bilya skeli misu Ay-Todor	Ukraine	34.120	44.420	Regional Nature Monument	III			
Priberezhniy kompleks bilya m. Plaka	Ukraine	34.360	44.590	Regional Nature Monument	III			
Gay yalovtsy visokogo v r-ni Semidvir'ya	Ukraine	34.460	44.710	Regional Nature Monument	III			
Priberezhniy kompleks mizh s. Sonyachnogirs'kom ta Malerichens'kim	Ukraine	34.550	44.750	Regional Nature Monument	III			
Skeli-ostrivki Adalari	Ukraine	34.300	44.540	Regional Nature Monument	III			
Dilyanka uzberzhzhyia Azovs'kogo morya	Ukraine	36.660	46.780	Regional Nature Monument	III			
Ostriv Velikiy Dzenzik	Ukraine	36.760	46.660	Regional Nature Monument	III			
Girlo richki Berda z Solodkim limanom	Ukraine	36.880	46.800	Regional Nature Monument	III			
Ostriv Maliy Dzenzik z arhipelagom Astapikha	Ukraine	36.800	46.680	Regional Nature Monument	III			
Kriva kosa	Ukraine	38.110	47.040	Regional Nature Monument	III			
Alupkins'kiy	Ukraine	34.050	44.410	State Park - Monument of Orchard - Park Art	III			
Miskhors'kiy	Ukraine	34.070	44.420	State Park - Monument of Orchard - Park Art	III			

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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Kharaks'kiy	Ukraine	34.100	44.420	State Park - Monument of Orchard - Park Art	III			
Livadiys'kiy	Ukraine	34.150	44.470	State Park - Monument of Orchard - Park Art	III			
Massandrivs'kiy	Ukraine	34.170	44.490	State Park - Monument of Orchard - Park Art	III			
Gurzufs'kiy	Ukraine	34.280	44.540	State Park - Monument of Orchard - Park Art	III			
Kiparisniy	Ukraine	34.290	44.540	State Park - Monument of Orchard - Park Art	III			
Utes	Ukraine	34.370	44.590	State Park - Monument of Orchard - Park Art	III			
Gora Koshka	Ukraine	33.980	44.400	State Nature Monument	III			
Karaul-oba	Ukraine	34.900	44.820	State Nature Monument	III			
Tsilina na kintsi Berdyans'koi kosi	Ukraine	36.760	46.630	Regional Zakaznik	IV			
Lisyacha balka	Ukraine	36.530	46.750	Regional Zakaznik	IV			
Niziv'ya Tiligul's'kogo limanu	Ukraine	31.210	46.620	Regional Zakaznik	IV			
Pivdennoberezhni dibrovi	Ukraine	34.150	44.460	Regional Zakaznik	IV			
Mis Fiolent	Ukraine	33.490	44.500	State Zakaznik	IV			
Arabats'kiy	Ukraine	35.450	45.300	State Zakaznik	IV	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1974	600
Noviy Svit	Ukraine	34.910	44.820	State Zakaznik	IV			
Kanaka	Ukraine	34.630	44.780	State Zakaznik	IV			
Ayu-Dag	Ukraine	34.340	44.550	State Zakaznik	IV			
Bakays'kiy	Ukraine	32.304	46.508	State Zakaznik	IV			

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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Bilosarays'ka kosa	Ukraine	37.326	46.914	State Zakaznik	IV			
Dunaiskiy /Danube Delta	Ukraine	29.655	45.400	National Biosphere Zapovednik	Ia	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1998	46,402
Dzhangul's'kiy	Ukraine	32.563	45.466	Regional Zakaznik	IV			
Dzharilgats'kiy	Ukraine	33.010	46.015	State Zakaznik	IV			
Karalars'kiy	Ukraine	36.171	45.448	Regional Zakaznik	IV	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1988	5,900
Karkinits'ka zatoka	Ukraine	33.476	45.917	State Zakaznik	IV	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1978	27,646
Kazantypskyi	Ukraine	35.847	45.462	Nature Zapovednik	Ia	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1998	450
Kosa Fedotova	Ukraine	35.309	46.305	State Zakaznik	IV	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1996	1,910
Kosa Obitochna	Ukraine	36.231	46.576	State Zakaznik	IV	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1980	8,863
Lebedini ostrovi	Ukraine	33.527	45.860	Nature Zapovednik	Ia	Marine - IUCN MPA, Subtidal - IUCN MPA		?
Molochniy liman	Ukraine	35.350	46.547	State Zakaznik	IV			
Opukskyi	Ukraine	36.212	45.045	Nature Zapovednik	Ia	Marine - IUCN MPA & Intertidal - IUCN MPA	01/01/1998	1,592
Priberezhniy akval'niy kompleks bilya gori Ayu-Dag	Ukraine	34.347	44.553	Regional Nature Monument	III			
Priberezhniy akval'niy kompleks u Dzhangul's'kogo suvnogo uzhberezzhya	Ukraine	32.564	45.472	Regional Nature Monument	III			

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Site Name	Country	Longitude	Latitude	Designation	IUCN Cat	Marine Character	Date of designation	Area (ha)
Priberezhniy akval'niy kompleks u m. Atlesh	Ukraine	32.564	45.331	Regional Nature Monument	III			
Priberezhniy akval'niy kompleks u m. Karangat	Ukraine	35.949	45.012	Regional Nature Monument	III			
Priberezhniy akval'niy kompleks u m. Khroni	Ukraine	36.587	45.440	Regional Nature Monument	III			
Prisivashs'kiy	Ukraine	34.932	45.660	Regional Zakaznik	IV			
Stepanivs'ka kosa	Ukraine	35.464	46.444	Regional Zakaznik	IV			
Yagorlits'kiy	Ukraine	31.864	46.432	State Zakaznik	IV	Marine - IUCN MPA, Subtidal - IUCN MPA	01/01/1974	18,620



## II. 14.2. Protected Areas in the Black Sea Coastal States (National reporting)

Fig. II.14.1. Protected Areas in Bulgaria (1) and in Georgia (2)



### **Bulgaria:**

In Bulgaria the Black Sea and coast comprises 42 designated protected areas: mainly coastal terrestrial, wetlands (Ramsar sites) and between them Ivan and Peter Islands, Koketra's banka (Bourgas Bay) and Cape Kaliakra reserve. Cape Kaliakra is situated at the end of a long and narrow peninsula on the Western coast of the Black Sea. The reserve occupies 687,5 ha and besides the steppe areas includes cliffs up to 70 m high.

### **Georgia:**

The Kolkheti National Park (wetlands and marine) is designated as marine protected area among 23 other conservation sites in Georgia. Recognized as an important natural area early in the 20th century, a 500 hectare area of swampy forest and mire between the Rioni and Pichori Rivers was established as Kolkheti Nature Reserve in 1935. The world-wide significance of the region was acknowledged in 1996 when Georgia joined the international convention on wetlands, known as the Ramsar convention, and all the mires and other natural areas of the Kolkheti lowlands were identified as Ramsar sites of international importance.

Romania: Danube Delta Biosphere Reserve (Fig. ), hosting an amazing range of habitats and life forms, in a relative small area, is a real museum of biodiversity, a natural genetic bank with incalculable value for the worldwide natural patrimony.

Fig. II.14.2. Danube Delta Biosphere Reserve.



In 1990, by the Government of Romania and by the Romanian Parliament, through Law 82/1993, the Danube Delta was recognized as a Biosphere Reserve. This reserve has an administration, a management plan and rules for the activities.

The Marine Reserve 2 Mai - Vama Veche was founded through Decision 31/1980 of the Constanta County Council (Romania), and confirmed as a protected area by Law No. 5/2000, regarding the approval of the National territory arrangement plan, code 2.345. Starting with June 2004, the reserve was put, for a period of five years, under the custody of the "Grigore Antipa" National Institute for Marine Research and Development, which triggered a series of activities aimed to lead to the application of a proper management, accordingly with the present requirements.

The reserve has a custodian teams and the Management Plan and the Rules was approved by the Romanian Academy and under approval by the Ministry of Environment and Water Management.

Under MO no 1964/2007 on establishing the status of protected areas of sites with communitarian importance which are integrated in NATURA 2000 network, 6 protected areas were integrated in marine protected areas network (Danube Delta reserve, metanogenous structures Sf. Gheorghe, submersal beach Eforie , Capul Tuzla, marine sulphurous pounds Mangalia, Marine Reserve 2 Mai - Vama Veche).

### **Romania**

In Romania birds marine protected areas had been designated under GD 1284/2007 on establishing special protected areas of avifauna as part of ecological European Natura 2000 network in Romania

Russian Federation: There are a number of protected areas at the Russian Azov and Black Sea coasts (totally 1050 km). The most important of them are Caucasus biosphere reserve (280 thousand ha) and Sochi National Park (190 thousand ha).

Two wetland sites at the Azov Sea coast have international importance (Ramsar sites) and two protected areas of national significance - Priazovskiy (42 thousand ha) and Tamano-Zaporozhskiy (30 thousand ha) natural reserves.

At the Black Sea coast the state coastal and marine reserve "Bolshoy Utrish" was created by Resolution of Krasnodar Kray Governor in 1994. The area is 20 km away from Anapa and its size is 5112 ha, including 2582 ha of land and 2530 ha of the Black Sea.

### **Turkey:**

There are several terrestrial protected sites (Fig. II.14.3) national parks, nature protection sites etc.) along the Turkish Black Sea Coast, however, no officially recognized marine protected areas are available in Turkish waters. Besides, there are two candidate sites to be established as marine protected areas:

Kızılırmak Delta (Fig. II.14.4 (1)) and Yeşilirmak Delta (Fig. II.14.4 (2)). Basin management and ecosystem approach can be easily applied for both sites. Both areas contain freshwater, terrestrial and marine habitats. Therefore, the status of present wetlands and protected areas which have a marine coastline is planned to be expanded to include Black Sea coastal waters and to provide the Turkish coast with real integrated coastal zone management for its sustainable development.

Fig. II.14.3. Protected areas along the Turkish coast.



Fig. II.14.4. Kızılırmak (1) and Yesilirmak (2) Deltas.



#### **KIZILIRMAK DELTA:**

Coordinates: 41° 30' N - 36° 05' E; Area : 30.440 ha;

Wetlands: 16.110 ha

Conservation Status:

- Wildlife Conservation Area
  - Natural Preservation Site
  - RAMSAR SITE (Kızılırmak Delta has been designated as a RAMSAR site since 15 - 04-1998)
- Has Environmental Management Plan.



### YEŞİLIRMAK DELTA:

Coordinates: 41 17'N - 36 56'E

Area: 20120 ha

Wetlands: 10500 ha

Conservation Status:

- Wildlife Conservation Area
- Natural Preservation Site
- Internationally Important Wetland



### Ukraine:

Coastline 1802 km, list of marine protected areas as follows: in this list not included local protected areas and protected areas of categories less than regional reserves or parks.

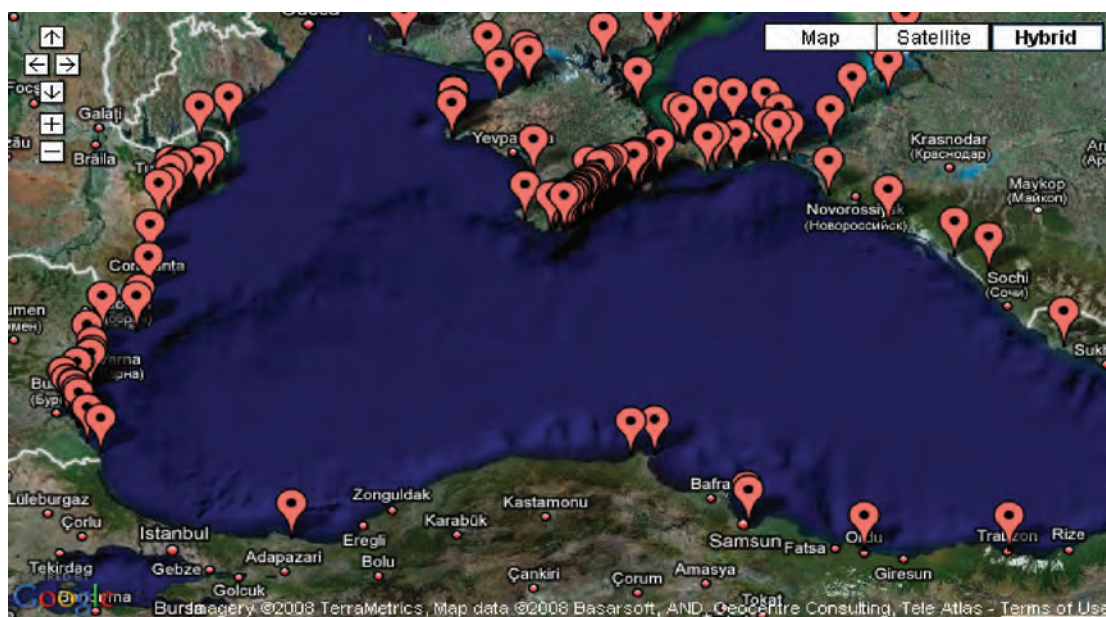
- Danube Biosphere Reserve (46403 ha)
- Black Sea (Chornomorski) Biosphere Reserve (> 100000 ha)
- Dniester-Turunchuk Crossriver Area - Lower Dniester local reserve (7600 ha)
- Tyligulsky Liman - regional landscape park (26000 ha)
- Kinburnska Spit - regional landscape park (18000 ha)
- Martyan Cape (240 ha)
- Karadagsky Nature Reserve (2874 ha)
- Opuksky Nature Reserve (1592 ha)
- Kazantypsky Nature Reserve (450 ha)
- Azov-Syvash National Nature Park (57400 ha)
- Zmeiny Island Zoological Reserve of national importance (20,5 ha)



Photos of Ukrainian protected areas (first line - Danube biosphere reserve, B. Aleksandrov, Island Zmeiny, photo Evgeniy Gazetov, Karadag; second line - underwater photos of A. Vershinin nearby Karadag).

Ukraine is rich in wetlands, including rivers, lakes, ponds, reservations, limans, saline lakes, marshes, peat bogs, floodplains and swamp forests. Approximately 5.3 % of Ukraine is covered by wetlands, 3.8 % of them are wet meadows. Total area of marine protected area of Ukraine, that includes main part of the coastal wetlands, is about 261 thousands ha. Protected aquatic area is about 61% (1588 km<sup>2</sup>). The biggest protected areas are: Danube Biosphere Reserve (46403 ha) where 950 species of plant and more than 5000 species of animals were registered, Black Sea Biosphere Reserve (> 100000 ha; 851 plant and 4832 animals species), Azov-Syvash National Nature Park (57400 ha; 308 plant and > 5000 animals species), Karadagsky Nature Reserve (2874 ha; 2782 plant and 3816 animals species). The nomination of this protected area was aimed at conservation, reproduction and rehabilitation of its relic endemic and rare species and landscapes, at maintenance of ecological balance and regulated recreational use of the reserve's natural resources. This areas is referred as to a piece of pristine Nature with special healing potential.

Fig. II.14.5. Black Sea Coastal / Marine Protected Areas reported to UNEP-WCMC



**II.15. Habitats: Habitats, biocoenoses or ecosystems, which are in danger of disappearing in their natural area of distribution or have a reduced natural area of distribution or aesthetic values (National reporting)**

**II.15.1. List of habitats typical of the Black Sea environment [absent (X), present (p), critical (CR)] (Example from the Romanian Black Sea).**

Black Sea Habitats	National habitats ROMANIA
Pelagic habitats (water column)	
1. Neritic	CR
2. Open sea	p
Benthic habitats	
1. Supralittoral rock	
1.1 Association of <i>Littorina neritoides</i> , <i>Lygia italica</i> and <i>Tylos latreillei</i> on exposed or moderately exposed supralittoral rock	x
1.2 <i>Chthamalus stellatus</i> on exposed supralittoral rock	x
2. Supralittoral sand	

Black Sea Habitats	National habitats ROMANIA
2.1 Talitrid amphipods in decomposing seaweed on the sand-line	p
3. Mediolittoral rock	
3.1 Mussels and/or barnacles on very/moderately exposed mediolittoral rock	p
3.2 Corallina turfs on very exposed mediolittoral rock	p
3.3 Enteromorpha spp. with minor development of Ceramium, Cladophora, Corallina, Porphyra	p
4. Mediolittoral sand and muddy sands	
4.1 Coarse sands with Donacilla cornea and facultative Ophelia bicornis	CR
4.2 Fine sands with Pontogammarus maeoticus	p
5. Sublittoral rock/other hard subsata	
5.1 Facies with Mytilus galloprovincialis on exposed or moderately exposed infralittoral rock - vertical or bedrock	CR
5.2 Association with Cystoseira spp. on exposed or moderately exposed infralittoral bedrock and boulders	CR
5.3 Association of green and red seaweeds on moderately exposed or sheltered infralittoral rock Enteromorpha, Ulva, Porphyra	p
5.4 Pholas dactylus and/or Barnea candida in infralittoral soft rock.	CR
5.5 Petricola lithophaga in infralittoral hard rock	CR
5.6 Spirorbis worms on infralittoral rock, Vermiliopsis infundibulum biogenic rocks	x
5.7 Sponge crusts, colonial ascidians and a bryozoan/hydroid turf on moderately exposed to sheltered infralittoral rock	p
5.8 Polydora sp. tubes on infralittoral soft rock	p
5.9 Ficopomatus enigmaticus biogenic reefs	p
6. Sublittoral sediments	
6.1 Donax trunculus in infralittoral coarse sands	CR
6.2 Chamelea gallina, Lentidium mediterraneum and Lucinella divaricata in shallow clean sands	p
6.3 Lentidium mediterraneum in shallow fine sands	CR
6.4 Solen marginatus in sheltered infralittoral fine sands	CR
6.5 Branchiostoma lanceolatum, Protodorvillea kefersteini and Ophelia limacina in circalittoral coarse sand with shell gravel	X
6.6 Mytilus galloprovincialis beds on coarse sand with shell gravel	p
6.7 Phyllophora nervosa on shell gravel	p
6.8 Modiolus adriaticus, Aonides paucibranchiata and Gouldia minima in coarse sands	p
6.9 Mya arenaria in sands and muddy sands	p
6.10 Anadara inequivalvis on sands and muddy sands	p
6.11 Zostera meadows in lower shore or infralittoral clean or muddy sand	CR
6.12 Melinna palmata in infralittoral mud	p
6.13 [Abra alba] [Cardiidae] and [Mytilus] in infralittoral mud	
6.14 Mya arenaria and Mytilus galloprovincialis in infralittoral mud	p
6.15 Nephthys in infralittoral mud	p
6.16 [Mytilus galloprovincialis] beds in infralittoral and circalittoral mud	CR

<b>Black Sea Habitats</b>	<b>National habitats ROMANIA</b>
6.17 Spisula subtruncata and Aricidea claudiae in circalittoral mud	X
6.18 Modiolula phaseolina, Amphiuira stepanovi and Notomastus profundus in circalittoral mud	p
6.19 Pachycerianthus solitarius in circalittoral mud	p
6.20 Periazotic zone	p
6.21 Anoxic H <sub>2</sub> S zone with anaerobic sulphate reducing bacteria	p
7. Submarine structures made by leaking gases	
7.1 Circalittoral carbonate structures around methane seeps	p
7.2 Infralittoral shallow sulphide seeps	p

### ***II.15.2. Habitats critical to the survival, reproduction and recovery of threatened species of flora or fauna***

1. Coarse mediolittoral sands with Donacilla cornea
2. Pholas dactylus and/or Barnea candida in infralittoral soft rock.
3. Association with Cystoseira spp. on exposed or moderately exposed infralittoral bedrock and boulders
4. Corallina turfs on very exposed mediolittoral rock
5. Sublittoral sands with Donax trunculus, Chamelea gallina, Lentidium mediterraneum and Lucinella divaricata
6. Facies with Mytilus galloprovincialis on exposed or moderately exposed infralittoral rock - vertical or bedrock
7. Mytilus galloprovincialis beds in infralittoral and circalittoral mud
8. Mytilus galloprovincialis on coarse sand with shelly gravel;

### ***II.16. ICZM: Progress in the Implementation of ICZM (National reporting)***

#### ***II.16.1. 15 Years of ICZM in the Black Sea Region***

This section was prepared by E. Antonidze (Chairman of ICZM Advisory Group of the Commission on the Protection of the Black Sea Against Pollution), Kuban State University, Krasnodar, Russian Federation.

#### ***Introduction***

The history of the ICZM in the Black Sea region started after signing of the Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention, 1992). It was launched within the GEF Black Sea Environmental Program (BSEP). Activity Center on Development of Common Methodologies of ICZM was established in Krasnodar (Russian Federation) by order of the Minister of Natural Resources of the Russian Federation and with the support of BSEP in 1993.

#### **Black Sea Environmental Program**

During the BSEP I phase (1993-1997) three ICZM Working Party (WP) Meetings were organized, representatives of all Black Sea countries were included to the WP, ICZM network was created, specialists were trained (World Bank training on ICZM, Sustainable Development and Sustainable Tourism; Bulgaria, Varna, 1995). Guidelines for defining of National Coastal Zone Boundaries, Outline for the preparation of National ICZM Reports, Criteria and format for the formulation of proposals for National ICZM Pilot Project were approved.



The main results achieved on BSEP Phase 1 were:

- ICZM concept, methodology and tools were presented and distributed at governmental and local levels; authorities and experts were involved in ICZM implementation;
- ICZM Activity Centre on development of common methodologies for ICZM was established with trained staff, a number of consultants were involved in the activity of the Centre, equipment was supplied;
- National Boundaries of coastal zones were defined in all 6 countries;
- National ICZM Reports were prepared; the actual situation, problems, priorities in ICZM development were presented;
- Activity Centre prepared Report on ICZM in the Black Sea Region. This document was used when preparing Black Sea Transboundary Diagnostic Analysis and Black Sea Strategic Action Plan - 1996;

There was a constant exchange of experience and training for staff, consultants involved in ICZM elaboration methodologies.

### ***European Support***

At the same time ICZM activities in the Black Sea region were supported by the European Union. Under the support of TACIS/PHARE programs a number of training courses and workshops on ICZM, EIA and ecological audit were organized for different specialists in Bulgaria, Georgia, Romania, Russia and Ukraine in 1995.

In the framework of ICZM Component of the TACIS Black Sea Environmental Program practical approach of ICZM implementation in local level was chosen (TACIS Funds for the BSEP, 1998 - 2000). This was done by:

- development of "Methodology of Spatial Planning for the coastal zone" as basis for integrated planning and decision-making
- development of Coastal Code of Conduct as guideline to policy makers and basic policy approach for spatial planning and supporting the implementation (with support of the European Union for Coastal Conservation)

Project included 3 subcomponents:

- coastal erosion policy (how to take natural constraints into account)
- sustainable tourism (economical development)
- solid waste management (improved management).

As a result of 2.5-year project following documents were developed and published:

- Policy of Coastal Defense for Azov and Black Seas (research book for scientists, brochure for managers and booklet for public). All documents were presented at the Russian-Georgian-Ukrainian Workshop.
- Analysis of legislation in ICZM field and proposals on its improvement (for Russia and Ukraine);
- Perspectives of Sustainable Tourism Development (special research was implemented for the Russian resort Gelendzhik and Ukrainian resort Malaya Yalta);
- Coastal Code of Conduct for Black and Azov Seas (developed for Russia and Ukraine based on experience of European Coastal Code of Conduct);
- Solid Wastes Management in Coastal Zones;
- Methodology of Spatial Planning for the coastal zones;
- 2 ICZM pilot projects - for resorts Malaya Yalta (Ukraine, Azov sea coast) and Gelendzhik (Russia, Black sea coast).



It should be mentioned that exactly within the framework of TACIS project the concept of Methodology of Spatial Planning for Black Sea Coastal Zone was proposed. During its development international experience was used. It became possible after training of specialists of ICZM Activity Center in course of TACIS ICZM Study Tour to the Netherlands and Great Britain.

The main objective of Methodology on Spatial Planning for Coastal Zones is the elaboration of a balanced integrated and sustainable development plan. This aim can be achieved when two problems are solved simultaneously: land use area zoning, as the normative and legal basis for its further development, and elaboration of the social and economic development areas, taking into account the prevailing nature conservation policy.

Implementation of ICZM principles and instruments took special significance after adoption by the European Union Recommendation Rec (2002) 1 of the Committee of Ministers to Member States on the Guiding Principles for Sustainable Spatial Development of the European continent (adopted on 30 January 2002):

### ***Coastal and island regions***

Europe's coastal regions are not only sensitive natural heritage areas but also important focuses of economic and commercial activities, prime locations for industry and energy conversion, a starting point for the exploitation of maritime and underwater resources and particularly attractive areas for tourism.

Since such a range of activities in coastal strips can generate numerous conflicts, an integrated and sustainable spatial development policy, covering not only the coastal strip but also the hinterland, is essential for such regions. The concept of the integrated management of coastal areas is intended to take into account the interaction between economic activities and social and environmental requirements when making use of natural resources in coastal areas and hence facilitate the decision-making process in assessing investments. Integrated coastal management should be a systematic component of regional planning at the various levels concerned. Cross-border and transnational co-operation beyond the sea are of particular importance in this respect."

Spatial planning is aimed at the recovery and conservation of the natural potential and securing the rights of the local population for an improved existence. It requires a systematic assessment of the state of the natural components (air, water resources, flora, fauna, etc.) as well as that of potential and anthropogenic effects on the environment from which alternatives for land use and economic and social conditions in order to select and adopt the best land use options.

Ecological assessment is a major instrument in ICZM Spatial Planning, especially while aiming at sustainable development. Its goal is to get an overview of the natural resources, their use, their importance and their vulnerability. The importance and vulnerability are assessed from one to three. The following definitions are used:

Natural Component Importance - Combined properties of the natural component identifying its importance to preserve the qualities and features aimed at being used in accordance with its target function. Scale 1 - low, 2 - average, 3 - high

Natural Component Target Function - Main function of the natural component in the general natural system.

High Importance Natural Component - Natural component with very high importance identifying the necessity to take strong measures aimed at preservation of its features and qualities. (3 points)

Low Importance Natural Component - Natural component which could be used for the economic development with possible change of its features and qualities. (1 point)

Natural Component Vulnerability - Changeability of natural component features and qualities under the influence of external factors. Scale 1 - low, 2 - average, 3 - high

High Vulnerability Natural Component - Highly vulnerable natural component, its features and qualities can be changed severely by minor influence of external factors. (3 points)

Low Vulnerability Natural Component - Natural component highly resistant to external influence. It can be additionally loaded without strong change of its features and qualities. (1 point)

The principal stages within Functional zoning are given in Figure 1.

Collection and interpretation of data on all environmental components aimed at systematizing them and working out the integrated development objectives is an important qualitative feature of coastal zones functional zoning.

The principal stages in zoning are:

- a) Baseline survey and identification of interpretation methods,
- b) Mapping and digitalisation of thematic maps,
- c) Mapping and digitalisation of actual area use maps,
- d) Matrix tabulation of levels and types of sectoral impact,
- e) Matrix tabulation of intervention levels (accepted sectoral levels) for the areas specified by theme maps,
- f) Matrix tabulation of sectoral interaction,
- g) Development of GIS information system to define the possibilities of optimal land use by different sectors. This programme will ensure:

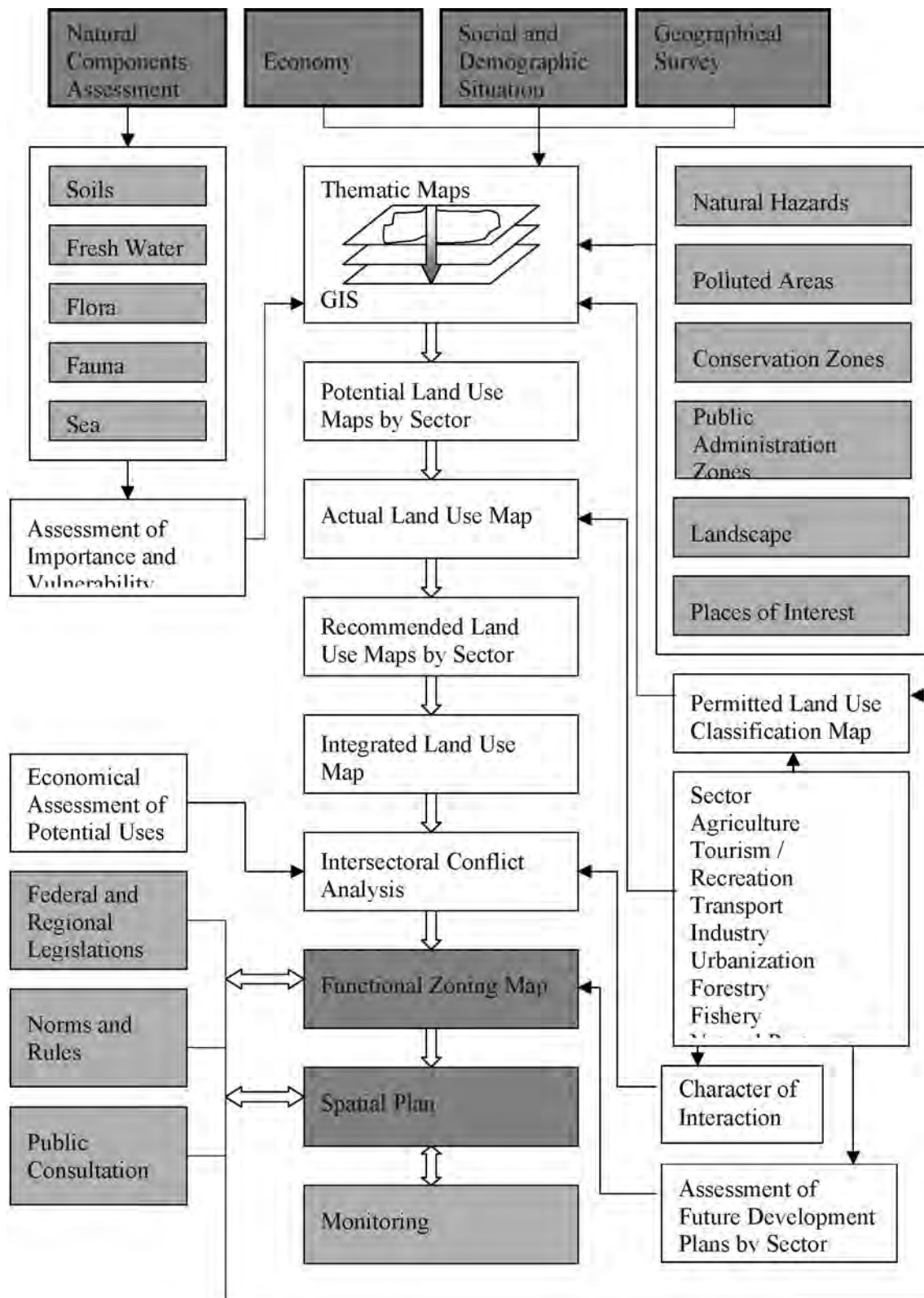
an indication of the sectoral interference levels for individual theme maps on the basis of matrix tables into the GIS programme,

an indication of the introduction of sectoral interactions,

an analysis of the integral theme maps, and new theme mapping, in accordance with the specified programme.

- h) Identification, analysis and updating of the land use alternatives, considering natural factors, for individual sectors based on the integral estimation of all theme maps and sectoral land use mapping,
- i) Actual land use analysis incorporating natural factors, identification of ecological conflicts, analysis of causes and a search for acceptable solutions,
- j) Integral estimation of sectoral maps considering natural factors, identification of land use mutual interest zones, conflicts analysis, searching for the best alternatives and updating sectoral maps,
- k) Identification of optimal alternative land use by all sectors with an indication of the zones requiring changes in the pattern of land use,
- l) Designing a procedure to assess the long-term plans for sectoral development taking into account natural factors.

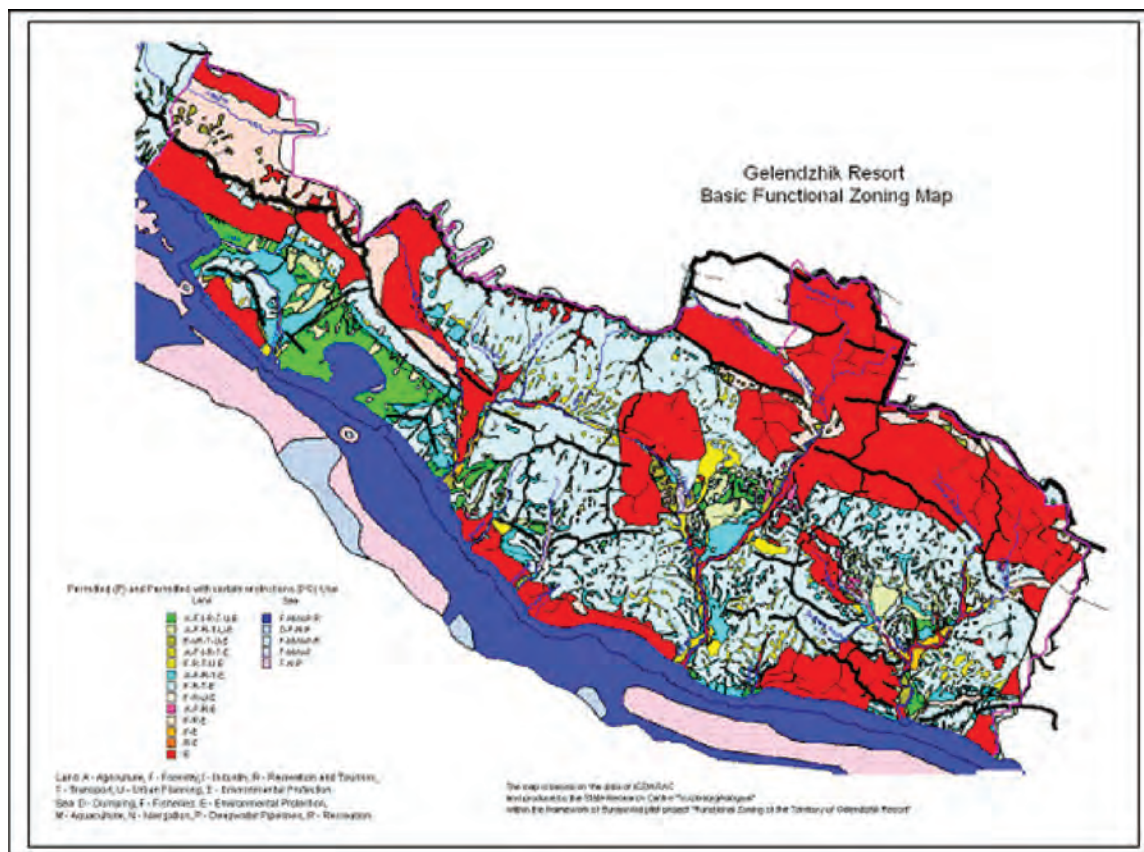
Figure 1. Stages within Functional Zoning



Within the framework of TACIS project in accordance with Methodology proposals for development of spatial plans were prepared for recreational zone Malaya Yalta (Azov sea coast of Ukraine) and Gelendzhik (Black sea coast of Russia). Assessment of importance and sensitivity of natural components (water, soil, vegetation, fauna, sea environment) was carried out, natural and administrative restrictions for land use

were identified, ecological and inter-sectoral conflicts were revealed, way for its solution were proposed. Based on this research prospects for development of sustainable tourism for the same territories was studied.

Figure 2. Scheme of Functional Zoning for Resort Gelendzhik



Results of this work have been highly commended and decision was taken to improve Methodology taking into account lessons learned. One of the components within the next EuropeAid project "Technical Assistance to the Black Sea Environmental Program" (2002 - 2004) included development of the following documents:

- Black Sea Regional ICZM Strategy and Action Plan;
- Guidelines For Preparation of National Codes of Conduct For Coastal Zones of Black Sea States;
- ICZM Tools and Techniques (Best practices);
- Methodology of Spatial Planning for Coastal zones;
- ICZM Pilot Project in Gelendzhik;
- Glossary of ICZM Legal Terms;
- Legislative improvement and distribution.

All documents mentioned above and detailed description of ICZM Pilot Project for resort Gelendzhik could be found on the web-site of the Commission on the Protection of the Black Sea Against Pollution (<http://www.blacksea-commission.org>) in section of the ICZM Advisory Group. Scheme of Functional Zoning for Resort Gelendzhik is given on Figure 2.

## Black Sea Ecosystem Recovery Project

Experience of 10-years work and its results were taken into account and developed within the frame of UNDP-GEF Black Sea Ecosystem Recovery Project 2003 - 2007. There was a series of ICZM-related activities supported/implemented within BSERP.



### ***Regional ICZM Strategy***

The Draft Regional Black Sea Strategy on ICZM was developed by the ICZM Activity Center (Krasnodar, Russia) with technical support of the EuropeAid Technical Assistance to the Black Sea Environmental Program Project. The Black Sea Commission approved the Strategy during its 11th Meeting (November 2004). The Commission decided to start official consultations within the Contracting Parties at the inter-ministerial level.

A Comparative Analysis between the Draft Regional Black Sea ICZM Strategy and the EU Policies has been prepared in 2005 by BSERP specialists. As a follow-up, in support for the national consultations process for the adoption of the Draft ICZM Regional Strategy a questionnaire on "National Comments on the ICZM related Articles of the BSSAP and the Draft Regional ICZM Strategy" was developed.

After analysis of national comments the following conclusion was made:

Legal framework and management instruments, as well as inter- sectoral committees are needed in all Black Sea countries to facilitate ICZM implementation;

Romania is the only Black Sea Country where legal framework and management instruments, as well as inter-sectoral committees have been developed and enforced;

The ICZM Guidelines are needed and they have to be developed in a separate document/set of documents;

ICZM Protocol to the Black Sea Convention should be developed and adopted;

The Black Sea ICZM Strategic Action Plan should be incorporated in the overall Black Sea Strategic Action Plan;

At national level the following tools are considered to be priority needed for ICZM implementation:

Specific ICZM Law;

Definition of the coastal zone status;

Informational, analytical and economic ICZM instruments;

ICZM information and data base system;

Progress indicators to evaluate the implementation of ICZM developed and harmonised with the European ones;

All administrative levels of management, population, NGO's and business sector included/involved when developing and implementing the ICZM SAP;

The analysis of socio- economic and political condition in the coastal zone.

### ***ICZM Pilot Project in Turkey***

The main task of ICZM Pilot project in Turkey was to test Methodology on spatial planning developed within TACIS project. Akçakoca municipality was chosen as a pilot region (Black sea coast of Turkey). Specialists of the Istanbul Technical University implemented project.

Testing of Methodology highlights the potential and the benefits as well as some critical conditions, limitations or constraints in implementation of the methodology. They are as follows:

The lack of a national level strategy and development plan for coastal areas has hindered the realization of ICZM in Turkey.

Insufficient data on coastal marine environment is one of the main problems during project implementation.

Project implementation needs specific period.

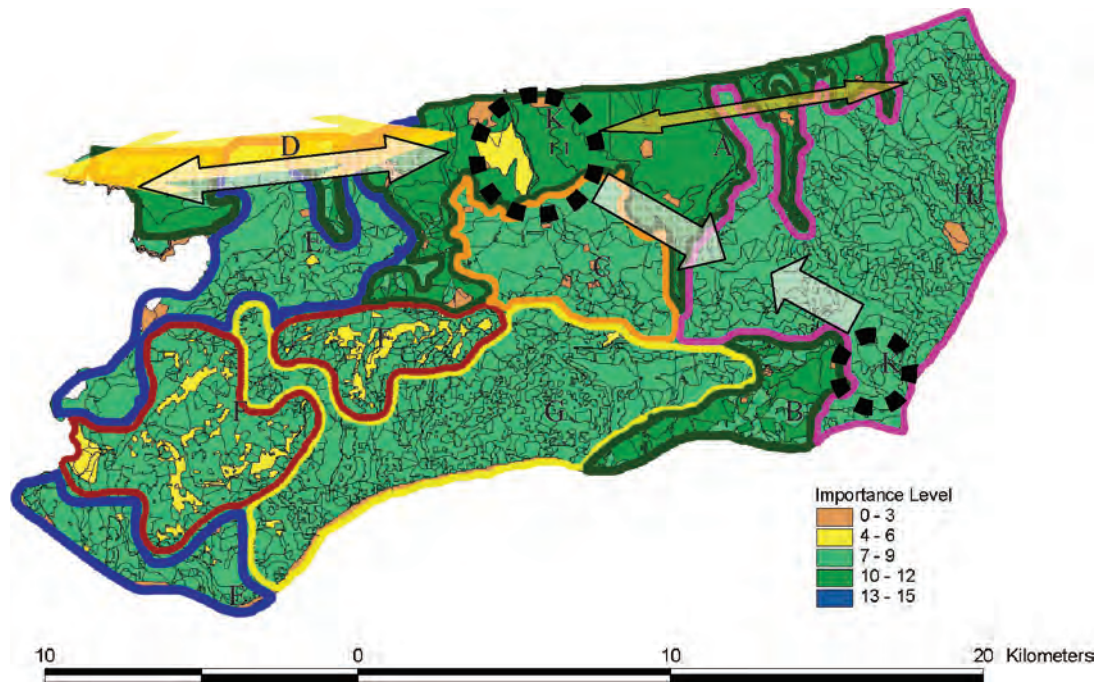
The constraints in timing have also limited the implementation of the methodology in terms of participation of stakeholders in the process.

The results of the study highlight the main conflicts between the different land-uses, the general social and economic trends, and the general tendency and behaviour of the Akçakoca inhabitants. It is obvious that

these conflicts cannot be solved in the short term. It is recommended to devote a long-term study to discuss the alternative and sustainable ways of development, certain social programs, training activities, etc. by the local authorities and stakeholders. Such efforts are proposed to stimulate public awareness as inhabitants form an essential part of ICZM.

Except the limitations the implementation of the methodology in Akçakoca provides many benefits especially in increasing the awareness of the stakeholders from national to local level. Overall evaluation of the study shows that Methodology of Spatial Planning has a great potential in evaluating the multi-dimensional structure of the coastal zone management, in describing the conflicting interests and in developing an integrated management model.

Figure 3. Functional Zoning of Akçakoca District



During the evaluation process different zones were identified:

K - This group identifies the urban development areas including the centre of Akçakoca, Dereköy, Subaşı-Tepeköy and Altınçay settlements. Akçakoca Centre and the surrounding area identify the intersection region of the sectoral functions such as urban planning, transportation, logistic, and forestry. The region around Dereköy includes the functions of urban planning, agriculture, transportation, and forestry. There is a continuous interest among these two residential sites which is reflected by the transportation network.

A - The dominating functions at the coastal area around the central area are agriculture, forestry, recreation and tourism.

B - This group that covers Dereköy and the nearby settlements around it provides especially agriculture and forestry functions.

C - This group located at the south of Akçakoca Centre that cover highly dense rural settlements and crop and livestock productions include functions of agriculture and natural tourism.

D - Coastal area extending from Akçakoca Centre till the mouth of Melen River includes the major functions of coastal tourism and recreation together with agriculture, forestry and transportation.

E - This group includes agriculture and forestry functions and also describes the region where agricultural activities constrict on forestry.

F - This group that is not suitable for the development of human activities defines the areas where the functions of environmental protection and forestry have to be intensified.

G - This group presenting both the highest elevations and the most highly sloped areas of the district has to basically include forestry function.

H - This group lying on the east of the district is recommended to be dominating with the forestry function as there is a necessity to improve this land's quality by environmental protection studies against the negative human effects encountered by agricultural activities, transportation, etc.

#### Feasibility Study on ICZM Instrument to the Bucharest Convention

The definition of legal provisions for ICZM is an area that requires special attention of the Contracting Parties to the Bucharest Convention. That is why it was decided to prepare a feasibility study for an ICZM protocol to the Convention, with the aim to evaluate whether a protocol is the most suitable legal instrument. This study should be based on an independent evaluation of the experiences with the preparation of such a protocol for other regional seas conventions.

The objectives of this Study developed by Dr. Vinogradov within BSERP were as follows:

- To provide an overview of all existing documents relevant for coastal zone management in the Black Sea at national and international levels and to make use of the experiences from other Conventions, in particular in the Baltic and Mediterranean Seas;
- To evaluate the implementation of the existing protocols to the Bucharest Convention;
- To demonstrate whether a legally binding instrument to the existing convention will be helpful and/or sufficient to meet the objectives of the ICZM regional strategy, to assure better coastal management in the Black Sea countries;
- To identify and assess at least 3 options for the ICZM document;
- To identify and to justify the most feasible solution.

After comprehensive analysis a two-step approach was recommended:

Short-medium term (next 2-5 years) - the adoption and implementation of the suggested combination of ICZM instruments: ICZM Declaration, Code of Practice and Action Plan. In this respect it is imperative to ensure the consistency, compatibility and complementarity of the three documents in order to avoid unnecessary duplication and overlap.

Long-term (5-10 years) - depending on the immediate achievements, overall performance and expected results of the proposed set of 'soft law' ICZM instruments one might consider to elaborate, if necessary, a legally binding document - additional protocol to the Bucharest Convention. Such a document will be developed on the basis of sufficient practical experience acquired by then.

#### **Conclusions and next steps**

The nearest activities in ICZM field that are identified as follows:

- Development of ICZM legislation on Black sea regional level as it is recommended within Feasibility Study;
- Continuation of work with ICZM Methodology by implementation of ICZM Pilot Projects
- Exchange of experience and lessons learned between Black sea countries with participation of international specialists;
- Development of a system of indicators for integral assessment of Black Sea coastal zones ecosystem and ICZM implementation.

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### II.16.2. Indicators for Measuring Progress in the Implementation of ICZM (Progress markers) Bulgaria

Country: BULGARIA

Region: VARNA, BOURGAS, DOBRICH

Local area: 18

coastal municipalities

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
Aspects of coastal planning and management are in place	1	Decisions about planning and managing the coast are governed by general legal instruments.	1	1	1	1	1	1
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.	1	1	1	1	1	1
	3	There are spatial development plans which include the coastal zone (but do not) AND THEY treat it as a distinct and separate entity.	1	1	1	1	1	1
	4	Aspects of the coastal zone, including marine areas, are regularly monitored.	1	1	1	1	1	1
	5	Planning on the coast includes the statutory protection of natural areas.	1	1	1	1	1	1
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.	1	1	1	1	1	1
	7	Adequate funding is usually available for undertaking actions on the coast.	0	0	0	0	0	0
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.	0	0	0	0	0	0
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.	1	1	1	1	1	1
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.	1	1	1	1	1	1
	11	A sustainable development strategy which includes specific references to coasts and seas is in place.	1	1	1	1	1	1
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.	1	1	1	1	1	1
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.	0	0	0	0	0	0
	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.	0	0	0	0	0	0
	15	There is a statutory coastal zone management plan.	0	0	0	0	0	0
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.						
	17	A non-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.	0	0	0	0	0	0
	18	There are open channels of communication between those responsible for the coast at all levels of government.	1	1	1	1	1	1



Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Phase		Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.	0	0	0	0	0	0
	20	Statutory development plans span the interface between land and sea.	1	1	1	1	1	1
	21	Spatial planning of sea areas is required by law.	1	1	1	1	1	1
	22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.	0	0	0	0	0	0
	23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.	0	0	0	0	0	0
	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.	1	1	1	1	1	1
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.	0	0	0	0	0	0
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.	1	1	1	1	1	1
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.	1	1	1	1	1	1
	28	A long-term financial commitment is in place for the implementation of ICZM.	0	0	0	0	0	0
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.	0	0	0	0	0	0
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.	0	0	0	0	0	0
	31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal and marine resources.	1	1	1	1	1	1

**Georgia**

Country: GEORGIA

Region: Generic Treatment

Local area: Generic Treatment

Note: Time milestones for measuring the progress with ICZM indicators corresponds to joint Ministerial meetings and international cooperative actions (Odessa Declaration 1993, Istanbul Black Sea Strategic Action Plan 1996, Sofia Declaration 2002, and 2008).

	Phase	Action	National			Regional			Local				
				1993	1996	2002	2008	1993	2002	2008	1993	2002	2008
	Not attained	Partially Attained				+ upgrade - downgrade							
Aspects of coastal planning and management are in place	1	Decisions about planning and managing the coast are governed by general legal instruments.	0	0	0	1+6	0	0	1+7				+8
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.			1+9	0- 10			1+1				
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.				1+3			1+2	1+3			+14

<sup>6</sup>Draft ICZM legislation prepared but not under formal consultation yet.

<sup>7</sup>Kolkheti National Park (KNP) legislation enacted in 1999 (but not yet enforced in its entirety).

<sup>8</sup>Shoreline management strips delimited (and approved); General Scheme for the Black Sea Coast of Georgia developed (but not approved yet).

<sup>9</sup>ICZM State Consultative Commission established by Presidential Decree (but irregular meetings; no decision-making power).

<sup>10</sup>ICZM State Consultative Commission abolished (ICZM Working Group reactivated, but still at inception stage).

<sup>11</sup>Kolkheti National Park (KNP) Advisory Council established in 2005 (irregular meetings; no decision-making power, only advisory and consultative role).

<sup>12</sup>Preparation of the statutory KNP management plan initiated with substantial spatial planning/zoning component (¼ of Georgian CZ).

<sup>13</sup>Kolkheti Protected Areas (KPA) (KNP and Kobuleti Nature Reserve/KNR) management plans approved by the Ministry of Environment.

<sup>14</sup>Local zoning plans prepared for several coastal settlements but not yet approved statutorily (Kobuleti, Batumi, Poti).

Phase	Action	National				Regional				Local			
			1993	1996	2002	2008	1993	2002	2008	1993	1996	2002	2008
A framework exists for taking ICZM forward	4	Aspects of the coastal zone, including marine areas, are regularly monitored.											
	5	Planning on the coast includes the statutory protection of natural areas.						+2	+8				
	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.											
	7	Adequate funding is usually available for undertaking actions on the coast.			+15	-16		+17				+18	+19
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.		+20	+21			+22					
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.			+4	-5							

<sup>15</sup>WB/GEF funded Georgia ICM Project (GICMP) appraised (1999) and implementation completed (2007).

<sup>16</sup>GICMP finalized; small scale ICZM funding bridged by EU project ICZM component.

<sup>17</sup>GICMP included component for Kolkheti wetlands establishment and management which can be considered as a regional initiative.

<sup>18</sup>Small community grant scheme was developed and international funding secured for 30 communities around the Kolkheti protected areas.

<sup>19</sup>EU funded project ICZM component provides certain minor resources for the local ICZM pilot project (Tskaltsminda).

<sup>20</sup>National ICZM Report prepared in 1996.

<sup>21</sup>ICZM component of GICMP undertook socio-economic assessment and other stocktaking tasks for Georgia's coastal zone management.

<sup>22</sup>KNP stakeholder analysis undertaken.

Phase	Action	National				Regional				Local			
		1993	1996	2002	2008	1993	2002	2008	2008	1993	1996	2002	2008
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	10 Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.												+23
	11 A sustainable development strategy which includes specific references to coasts and seas is in place.		+ 24	+ 25									
	12 Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.			+26		+27							
	13 All relevant parties concerned in the ICZM decision-making process have been identified and are involved.												
	14 A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.												
	15 There is a statutory coastal zone management plan.						+7	+8					

<sup>23</sup>ICZM Demonstration projects implemented in Kobuleti (combining community development, beach management and coastal/wetland interpretation).

<sup>24</sup>National ICZM Policies and Strategies document prepared, certain strategic actions implemented but others remain pending.

<sup>25</sup>ICZM Policy note and ICZM Work Program prepared and submitted for consideration of high level decision-makers / National Coastal Strategy is under preparation.

<sup>26</sup>ICZM Guidelines prepared and endorsed by the Minister of Environment but implementation is at early stage of development.

<sup>27</sup>Kolkheti Wetlands management planning guidelines produced and implemented (Georgia joined Ramsar Convention, established KNP).

Phase	Action	National			Regional			Local		
		1993	1996	2002	2008	1993	2002	1993	2002	2008
16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.									
17	A non-statutory coastal zone smangement strategy has been drawn up and an action plan is being implemented.		+19	+20						
18	There are open channels of communication between those responsible for the coast at all levels of government.									
19	Each administrative level has at least one member of staff whose least one member of staff whose	+28	+29	-30					+31	
20	Statutory development plans span the interface between land and sea.						+7		+8	
21	Spatial planning of sea areas is required by law.								+8	
22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.									

<sup>28</sup>National ICZM Focal Point designated.

<sup>29</sup>ICZM Centre established in charge of implementing GICMP project.

<sup>30</sup>ICZM Centre dissolved. National ICZM Focal Point remains designated. Reportedly Monitoring and Prognosis Center has ICZM staff with certain experience.

<sup>31</sup>A djara Department of Natural Resources designated ICZM personnel, functions are yet limited. KNP administration could be considered as in charge of Kolkhetti coast.

Phase	Action	National				Regional				Local			
		1993	1996	2002		2008	1993	2002	2008	1993	1996	2002	2008
23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.												
	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.												
	There is strong, constant and effective political support for the ICZM process.	+32	-33										
26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.												
27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.			+34									
28	A long-term financial commitment is in place for the implementation of ICZM.		+10										

<sup>32</sup>Regional Black Sea Action Plan signed, Georgia joined Ramsar Convention and designated Kolkehi wetlands, Georgia ICZM Program initiated.

<sup>33</sup>Due to certain coastal developments and changes in the Government's policy directions support to integrated management approaches dwindled and remains subdued.

<sup>34</sup>Annual national reports are being prepared for Black Sea Commission. ICZM progress indicator tool was adopted as well and national reporting initiated.

Phase	Action	National				Regional				Local			
		1993	1996	2002		2008	1993	2002	2008	1993	1996	2002	2008
29	End users have access to as much information of sufficient quality as they need to make timely, coherent and wellcrafted decisions.												
30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.												
31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal more sustainable use of coastal								+35				

<sup>35</sup>Despite several drawbacks Kolkheti protected areas are functioning and contributing to improved protection of coastal resources.



**Romania**

Country: ROMANIA  
Constanta & Tulcea area

Region: Black Sea

Local area : Romanian coastal zone -

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
Aspects of coastal planning and management are in place	1	Decisions about planning and managing the coast are governed by general legal instruments.	0	1	0	1	0	0
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.	0	1	0	1	0	1
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.	0	1	1	1	0	0
	4	Aspects of the coastal zone, including marine areas, are regularly monitored.	1	1	1	1	1	1
	5	Planning on the coast includes the statutory protection of natural areas.	1	1	1	1	1	1
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.	0	1	0	1	0	0
	7	Adequate funding is usually available for undertaking actions on the coast.	0	1	0	1	0	1
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.	0	1	0	1	0	1
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.	0	1	0	1	1	1
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.	1	1	1	1	1	1
	11	A sustainable development strategy which includes specific references to coasts and seas is in place.	0	1 (draft)	0	1 (draft)	0	0

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.	0	0	0	1 (draft methodologies on specific issues)	0	0
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.	0	1	0	1	1	1
	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.	0	1 (State of coast environment)	0	1 (State of coast environment)	0	1
	15	There is a statutory coastal zone management plan.	0	0	0	0	0	0
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.	0	0	0	0	0	0
	17	A On-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.	0	1 (Draft)	0	1 (Draft)	0	0
	18	There are open channels of communication between those responsible for the coast at all levels of government.	0	1	0	1	1	1
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.	0	1	0	1	0	0
	20	Statutory development plans span the interface between land and sea.	0	0	0	0	0	0
	21	Spatial planning of sea areas is required by law.	0	0	0	0	0	0
	22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.	0	0	0	0	0	0
	23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.	0	1	0	1	0	1
	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.	0	1	0	1	0	0

## Annex II. Policy Actions

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.	0	1	0	1	1	1
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.	0	1	0	1	1	1
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.	0	1	0	1	0	0
	28	A long-term financial commitment is in place for the implementation of ICZM.	0	0	0	0	0	0
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.	0	1	0	1	1	1
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.	0	1	0	1	0	0
	31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal and marine resources.	1	1	1	1	1	1

### Russian Federation

Country: Russian Federation; Region: Black Sea Local area : Krasnodar krai, Sochi, Tuapse, Gelendzhik

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
Aspects of coastal planning and management are in place	1	Decisions about planning and managing the coast are governed by general legal instruments.	0	1	0	0	1	0
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.	0	0	0	0	0	0
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.	0	1	0	0	1	0
	4	Aspects of the coastal zone, including marine areas, are regularly monitored.	0	1	0	0	1	0
	5	Planning on the coast includes the statutory protection of natural areas.	0	1	0	0	1	0
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.	0	1	0	0	1	0
	7	Adequate funding is usually available for undertaking actions on the coast.	0	0	0	0	0	0
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.	0	0	0	0	0	0

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.	0	0	0	0	0	0
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.	0	0	0	0	0	0
	11	A sustainable development strategy which includes specific references to coasts and seas is in place.	0	0	0	0	0	0
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.	0	0	0	0	0	0
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.	0	0	0	0	0	0
	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.	0	0	1	0	0	1
	15	There is a statutory coastal zone management plan.	0	0	0	0	0	0
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.	0	0	1	0	0	1
	17	A non-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.	0	0	0	0	0	0
	18	There are open channels of communication between those responsible for the coast at all levels of government.	0	0	0	0	0	0
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.	0	0	0	0	0	0
	20	Statutory development plans span the interface between land and sea.	0	0	0	0	0	0
	21	Spatial planning of sea areas is required by law.	0	0	0	0	0	0
	22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.	0	0	0	0	0	0
	23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.						
	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.	0	0	1	0	0	1

## Annex II. Policy Actions

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.	0	0	0	0	0	0
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.	0	0	0	0	0	0
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.	0	0	0	0	0	0
	28	A long-term financial commitment is in place for the implementation of ICZM.	0	0	0	0	0	0
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.	0	0	0	0	0	0
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.	0	0	0	0	0	0
	31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal and marine resources.	0	0	0	0	0	0

### Turkey

Country :TURKEY

Region : BLACK SEA

Local area: Any local area in the region

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
Aspects of coastal planning and management are in place	1	Decisions about planning and managing the coast are governed by general legal instruments.	0	0	0	0	0	0
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.	0	0	0	0	0	0
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.	1	1	0	0	0	1
	4	Aspects of the coastal zone, including marine areas, are regularly monitored.	0	0	0	0	0	0
	5	Planning on the coast includes the statutory protection of natural areas.	1	1	1	1	1	1
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.	0	0	0	0	0	0
	7	Adequate funding is usually available for undertaking actions on the coast.	0	0	0	0	0	0

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.	0	0	0	0	0	0
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.	0	0	0	0	0	0
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.	0	0	0	0	0	0
	11	A sustainable development strategy which includes specific references to coasts and seas is in place.	0	0	1	1	1	1
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.	0	0	0	0	0	0
	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.	0	0	0	0	0	0
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.	0	0	0	0	0	0
	15	There is a statutory coastal zone management plan.	0	0	0	0	0	0
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.	0	0	0	0	0	0
	17	A non-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.	0	0	0	0	0	0
	18	There are open channels of communication between those responsible for the coast at all levels of government.	0	0	0	0	0	0
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.	0	0	0	0	0	0
	20	Statutory development plans span the interface between land and sea.	1	1	0	0	0	0
	21	Spatial planning of sea areas is required by law.	1	1	0	0	0	0
	22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.	0	0	0	0	0	0
	23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.	0	0	0	0	0	0
	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.	0	0	0	0	0	0

## Annex II. Policy Actions

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.	0	0	0	0	0	0
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.	0	0	0	0	0	0
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.	0	0	0	0	0	0
	28	A long-term financial commitment is in place for the implementation of ICZM.	0	0	0	0	0	0
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.	0	0	0	0	0	0
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.	0	0	0	0	0	0
	31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal and marine resources.	0	0	0	0	0	0

### Ukraine

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
Aspects of coastal planning and management are in place	1	Decisions about planning and managing the coast are governed by general legal instruments.	1	1	1	1	1	1
	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.	0	0	0	1	0	0
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.	0	1	0	1 (Law on General Scheme of planning of the territory of Ukraine, 2002)	0	0
	4	Aspects of the coastal zone, including marine areas are regularly monitored.	1	1	1	1 (State Inspection of Black and Azov Seas)	1	1
	5	Planning on the coast includes the statutory protection of natural areas.	0	0	0	0	0	0
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.	0	0	0	0	0	0
	7	Adequate funding is usually available for undertaking actions on the coast.	0	0	0	0	0	0



Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.	0	0	0	0	0	0
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.	0	0	0	1 (Commissi on of Black and Azov Seas under the Law on Programm e...)	0	0
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.	0	0	0	0	0	0
	11	A sustainable development strategy which includes specific references to coasts and seas is in place.	0	0	0	0	0	0
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.	0	0	0	0	0	0
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.	0	0	0	0	0	0
	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.	1	1 ( Report of Inspection of Black and Azov Seas)	1 ( Report of Inspection of Black and Azov Seas)	1	1	1
	15	There is a statutory coastal zone management plan.	0	0	0	0	0	0
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.	0	0	0	0	0	0
	17	A non-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.	0	0	0	0	0	0
	18	There are open channels of communication between those responsible for the coast at all levels of government.	0	0	0	0	0	0
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.	0	0	0	0	0	0
	20	Statutory development plans span the interface between land and sea.	0	0	0	0	0	0
	21	Spatial planning of sea areas is required by law.	0	0	0	0	0	0

## Annex II. Policy Actions

Phase	Action	Description	Local		National		Regional	
			2000	2005	2000	2005	2000	2005
	22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.	0	0	0	0	0	0
	23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.	0	0	0	0	0	0
	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.	0	0	0	0	0	0
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.	0	0	1	1	0	1
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.	0	0	0	0	0	0
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.	0	0	0	0	0	0
	28	A long-term financial commitment is in place for the implementation of ICZM.	0	0	0	0	0	0
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.	0	0	0	0	0	0
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.	0	0	0	0	0	0
	31	Monitoring shows a demonstrable trend towards a sustainable use of coastal and marine resources.	0	0	0	0	0	0

## II.17. Supporting Figures

### Nutrient loads

Figure 1.a Nutrient loads for all reported rivers to the BSC (TDA, 2007)

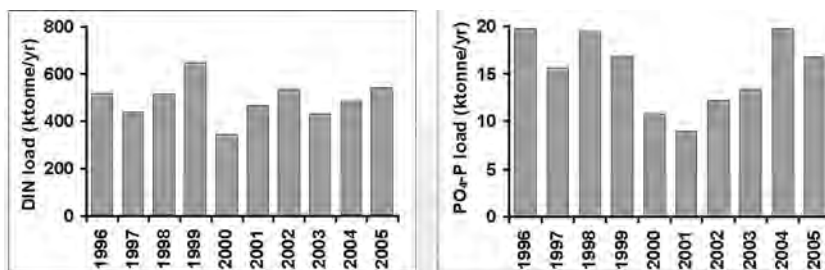


Figure 1.b Nutrient loads of the Danube River stemming to the Black Sea (TDA, 2007)

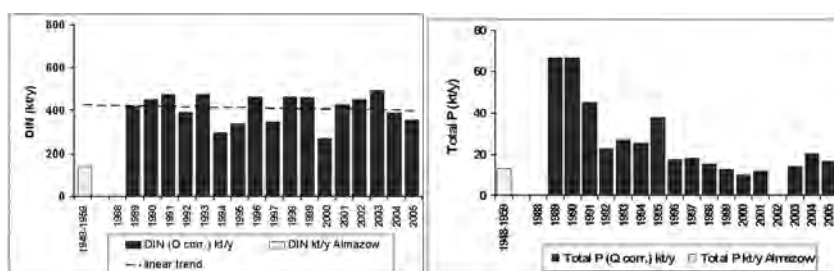
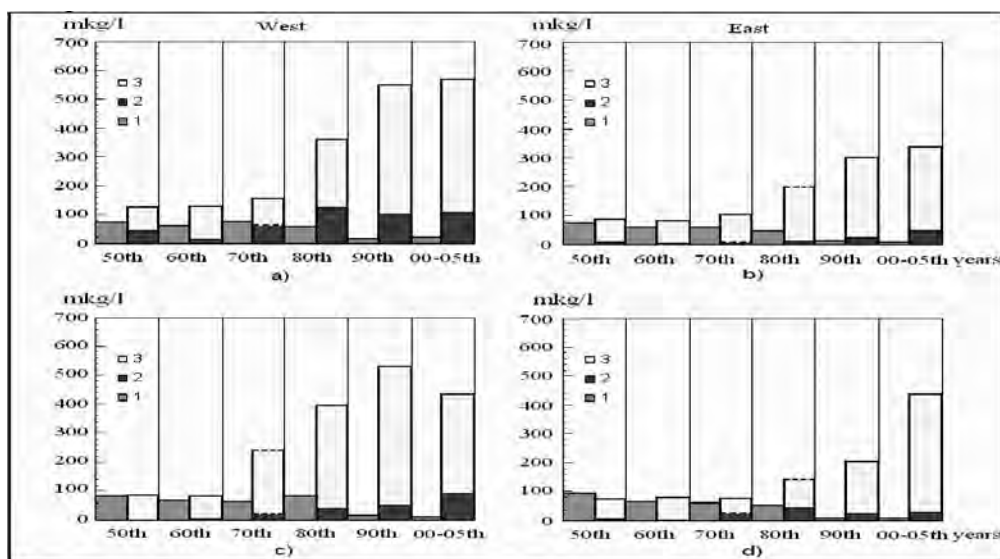


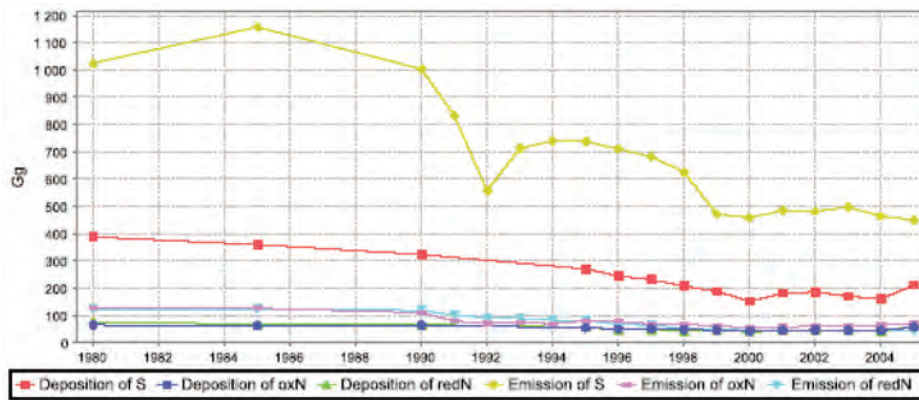
Figure 1.c Long Term Variability of the Average Annual Nutrient Concentrations in the surface ("a" and "c") and bottom ("b" and "d") waters of the western and eastern parts of the NWBS (1 - phosphates; 2 - inorganic forms of the nitrogen and 3 - organic form of the nitrogen)



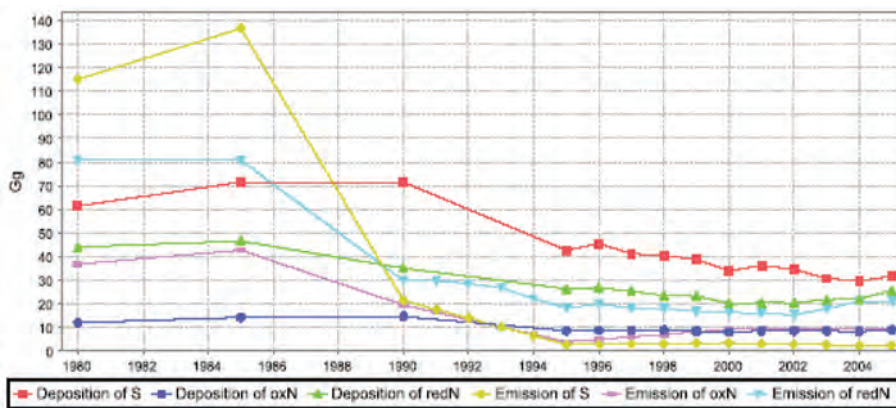
Source: ESTIMATION OF THE ECOLOGICAL STATE OF THE NORTH-WESTERN PART OF THE BLACK SEA, I. Loyeva, I. Orlova, N. Pavlenko, Yu. Popov, V. Ukrainskiy, Yu. Denga, V. Komorin, V. Lepeskin, Proceeding of the 1st biannual scientific conference of the Black Sea Commission, 2008 (in print, Ukrainian Scientific Center of Sea Ecology.) (Taken from the National Gap Analysis Report, 2007)

Figure 2 a. Atmospheric pollution: Trends in emissions and depositions of oxidised sulphur, oxidised nitrogen and reduced nitrogen. Units: Gg(S) or Gg (N).

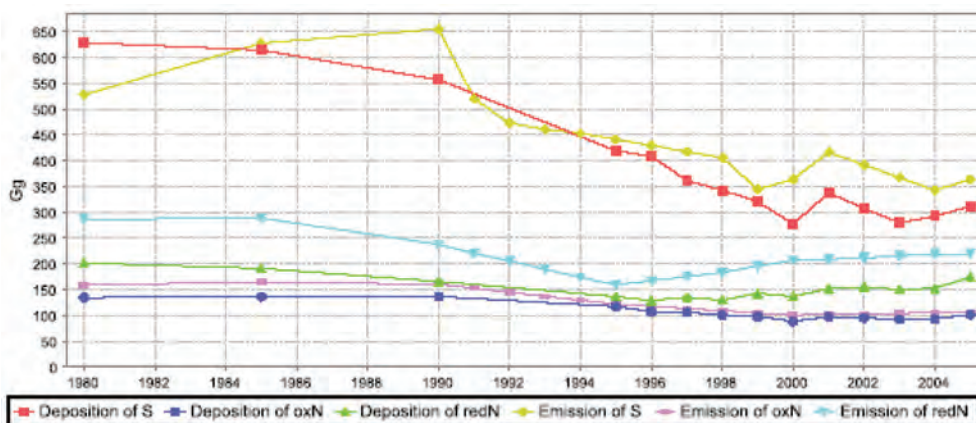
**Bulgaria**



**Georgia**

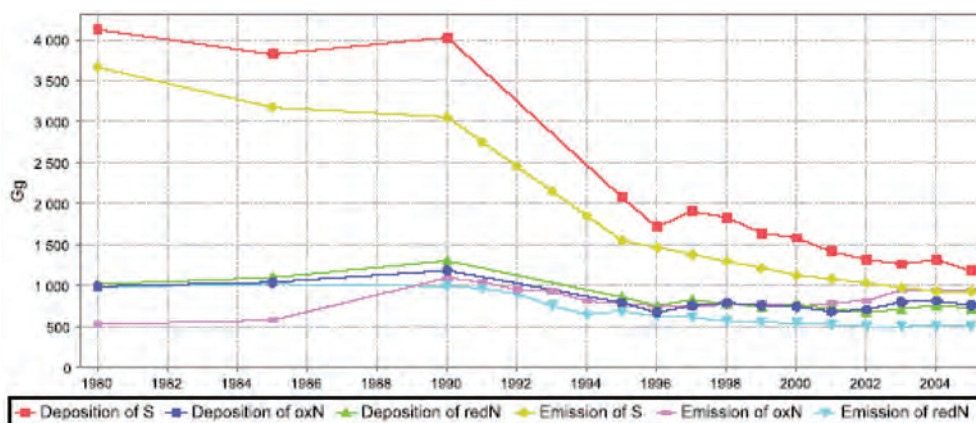


**Romania**

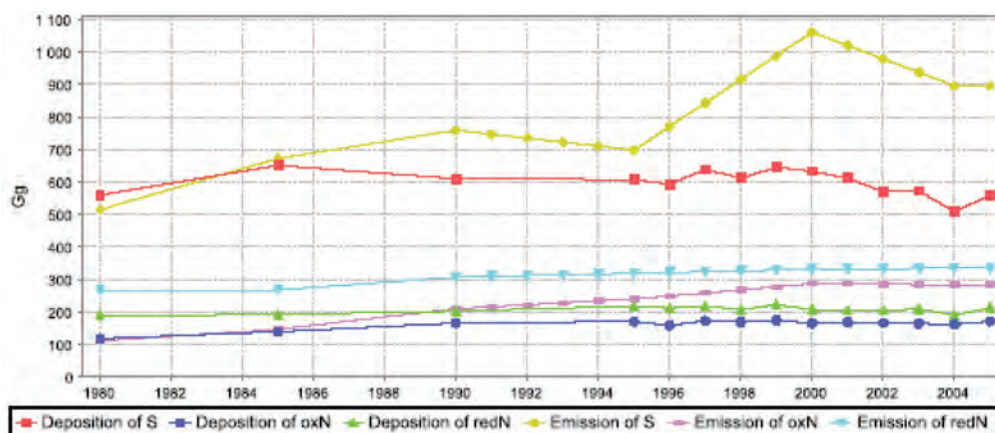




### Russian Federation



### Turkey



### Ukraine

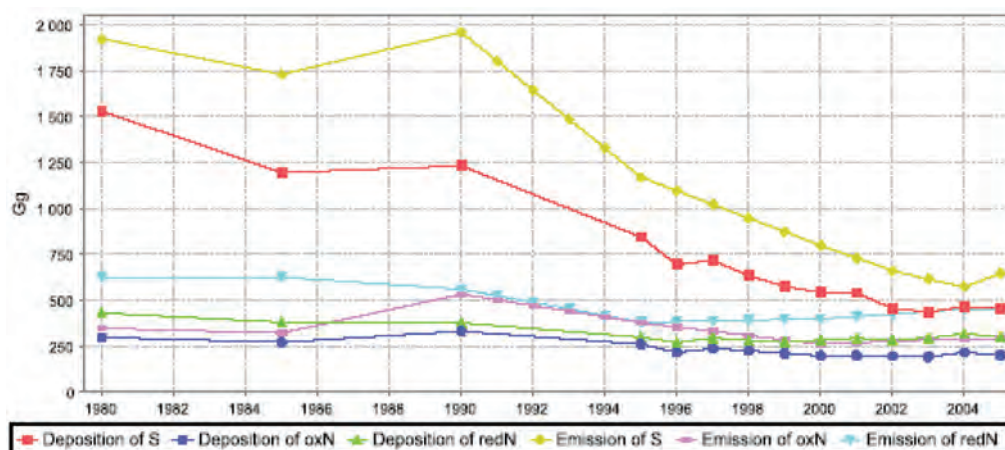


Figure 2.b Atmospheric pollution: Comparison of CO<sub>2</sub> emissions of 1990 and 2004 according UNDP-HDR

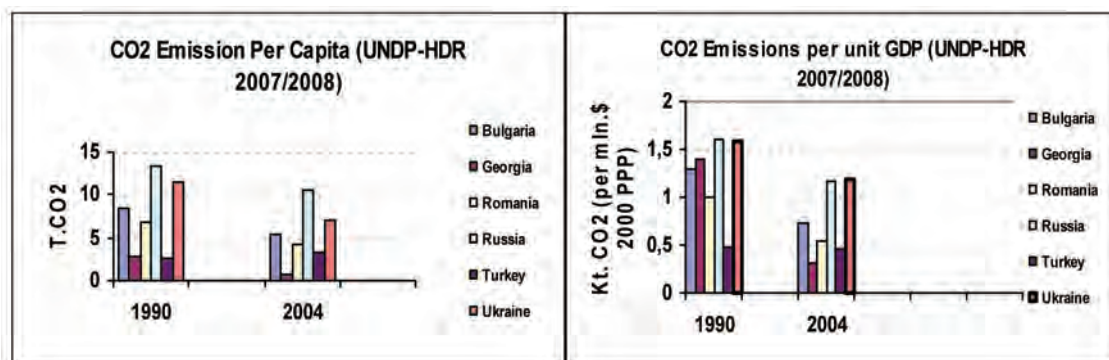


Figure 2.c. Atmospheric pollution: Deposition of airborne Cd, Hg and Pb to the Black Sea Basin (Source: EMEP, [http://www.msceast.org/countries/seas/seas\\_index.html](http://www.msceast.org/countries/seas/seas_index.html))

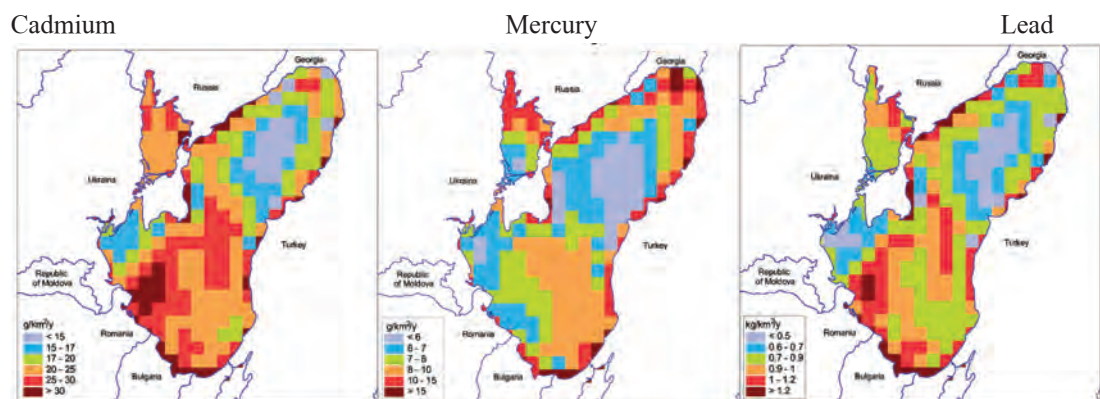


Figure 3. Urban and Rural Population connected to sewage treatment

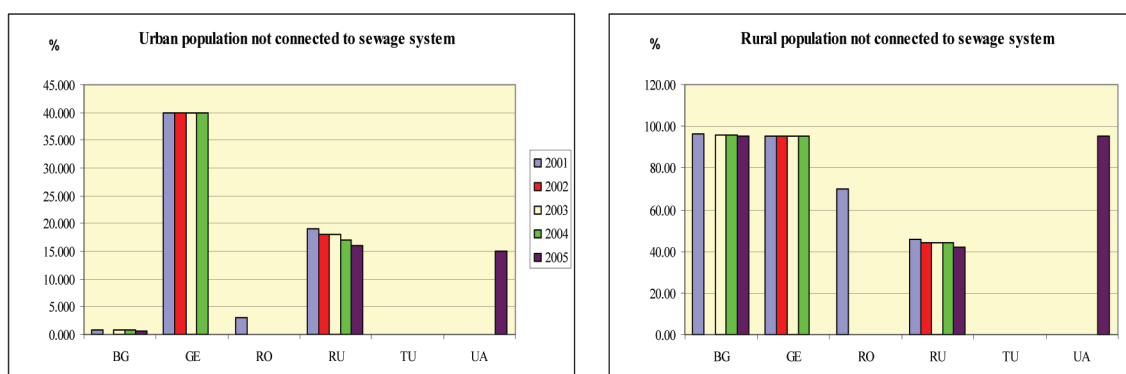
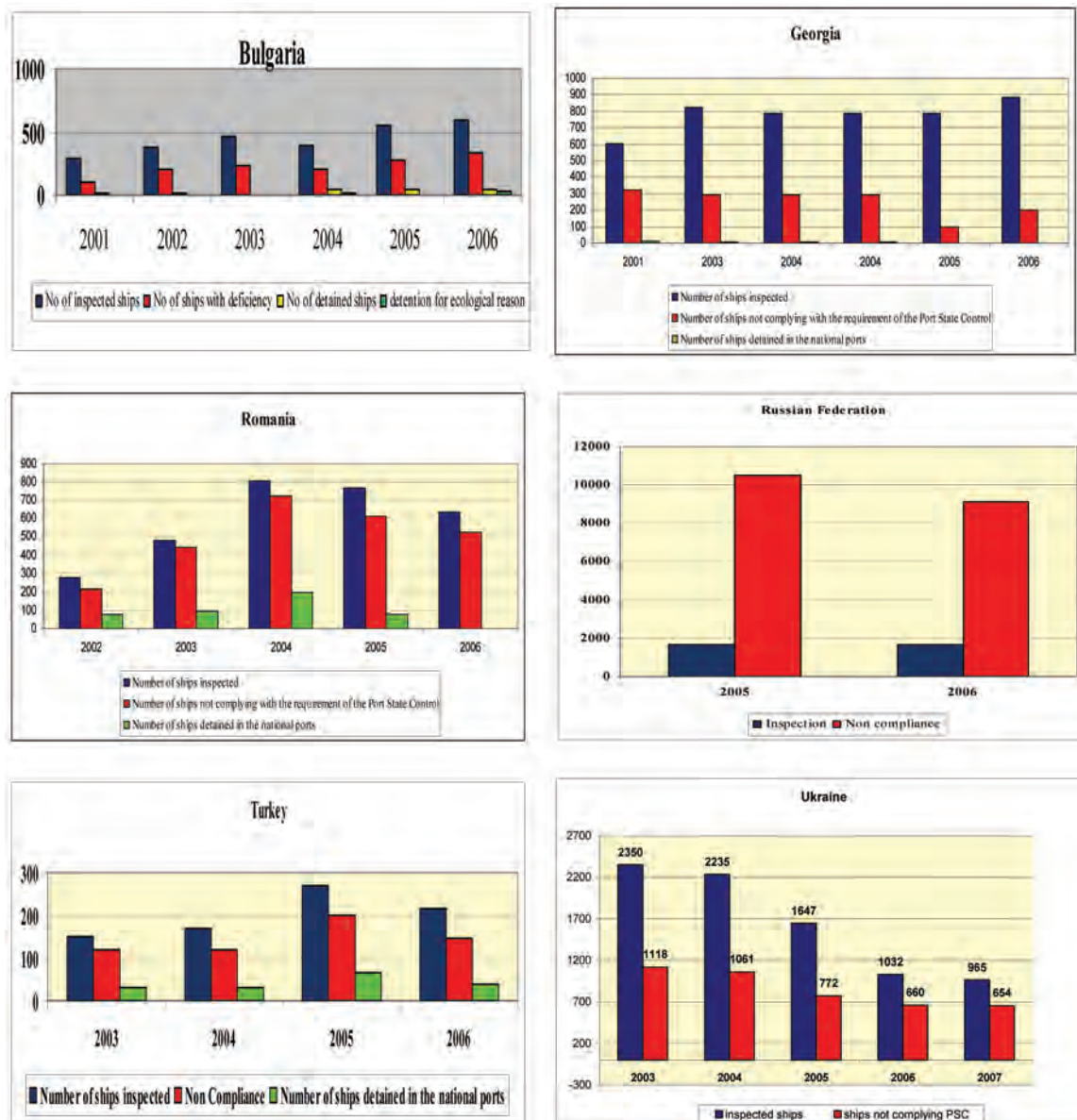


Figure 4. Number of ship inspections performed by BS States



Note: The system of Russia for counting non-compliance is not number of ships, but number of detected inconsistencies with requirements, they can be many per ship.



Figure 5. Volume of dumped dredged spoils (m3) in Romania, Russian Federation and Ukraine in 1996-2006.

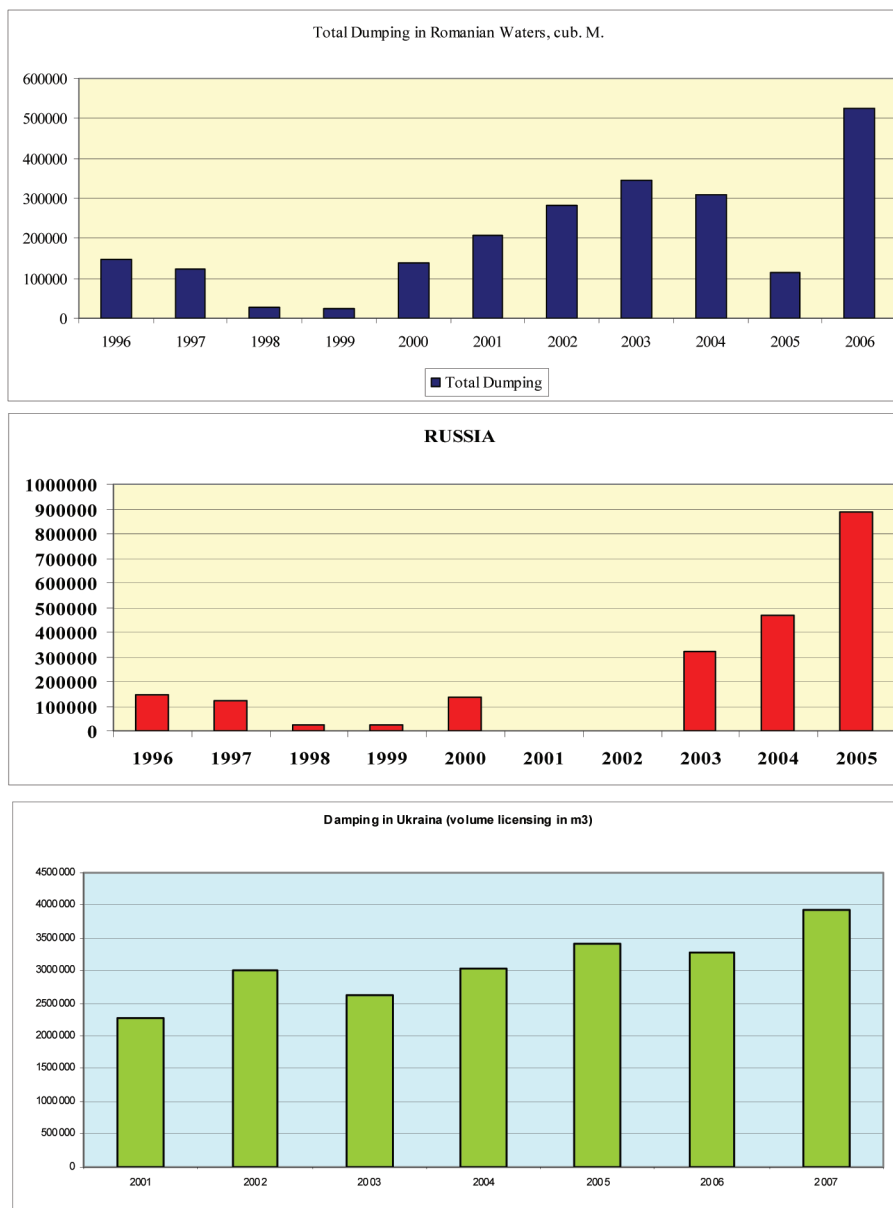


Figure 6. A. Number of oil spills in 2005 and 2006 (ESAS AG Annual Report, 2007)

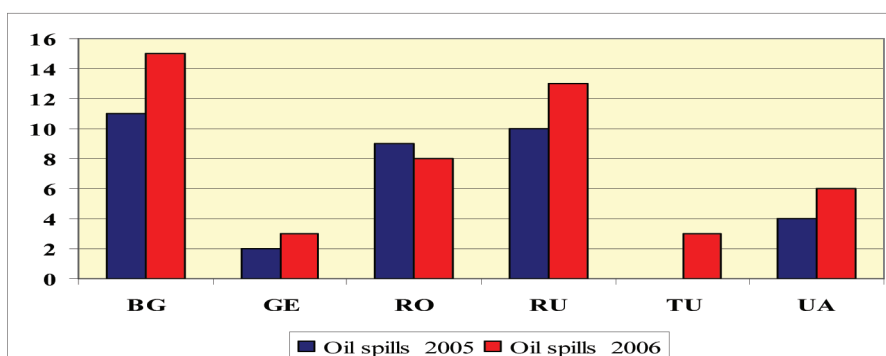


Figure 6.B. Amount of hazardous substances transported via the Istanbul strait in 1996-2006 (data of the TU Ministry of Environment and Forestry)

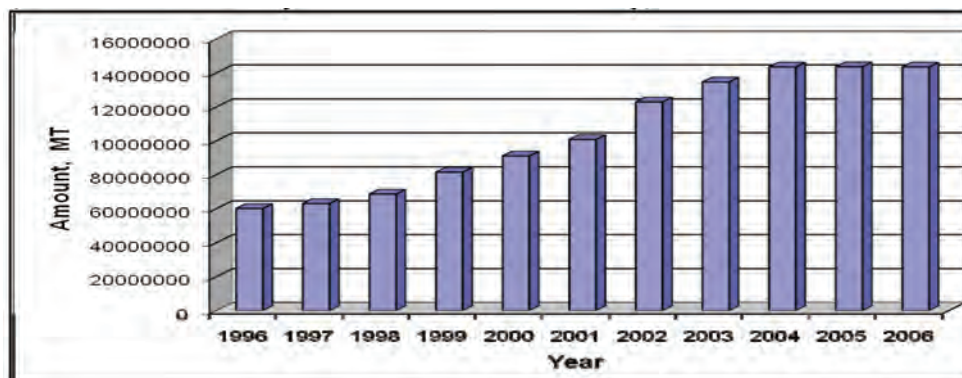
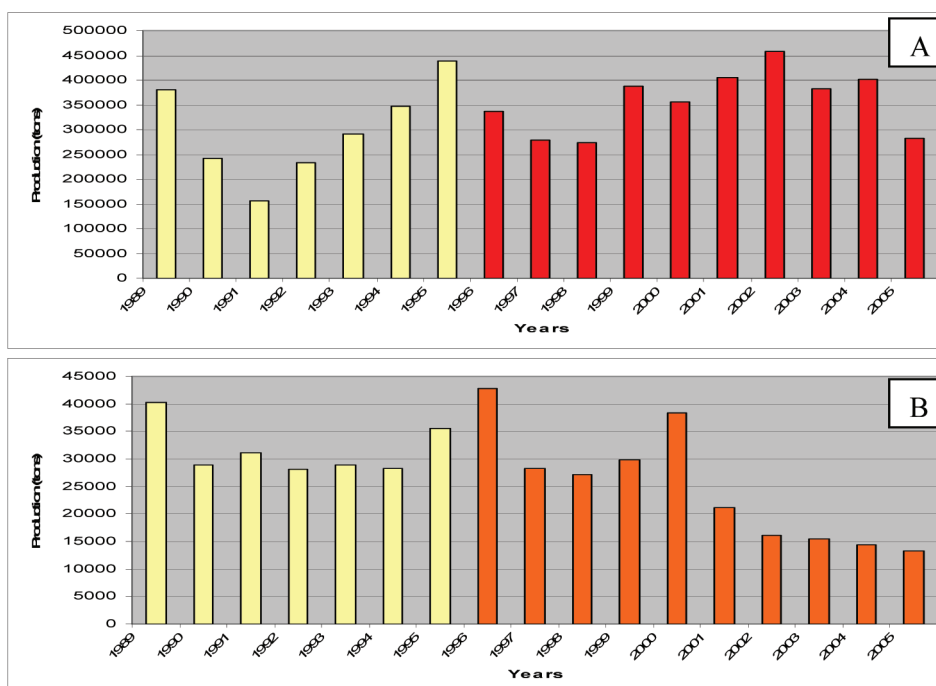


Figure 7. Total capture production of main fish species (pelagic (A) and demersal (B)) in the Black Sea during 1989 -2005 (FOMLR AG Annual Report, 2007)



### Bulgaria

Capture Production	1999	2000	2001	2002	2003	2004	2005	Average
Rapana	3 800	4 015.8	3 353.4	698.0	324.0	2 427.9	510.9	2 161.5
Black Sea Mussel			6.5	55.0	15.1	33.7	10.4	24.1

Figure 8. Results of special investigations of population sizes of the three Black Sea cetaceans (Alexei Birkun, CBD AG Annual Report, 2007)

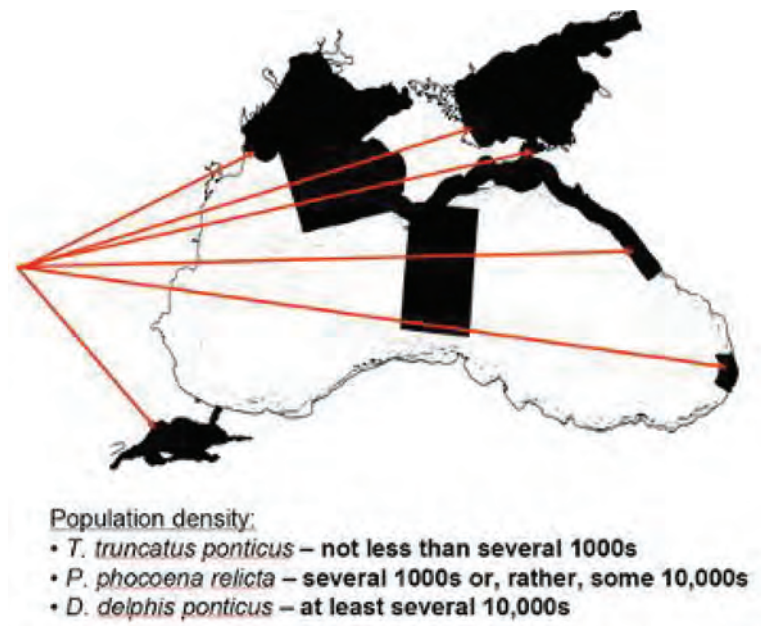
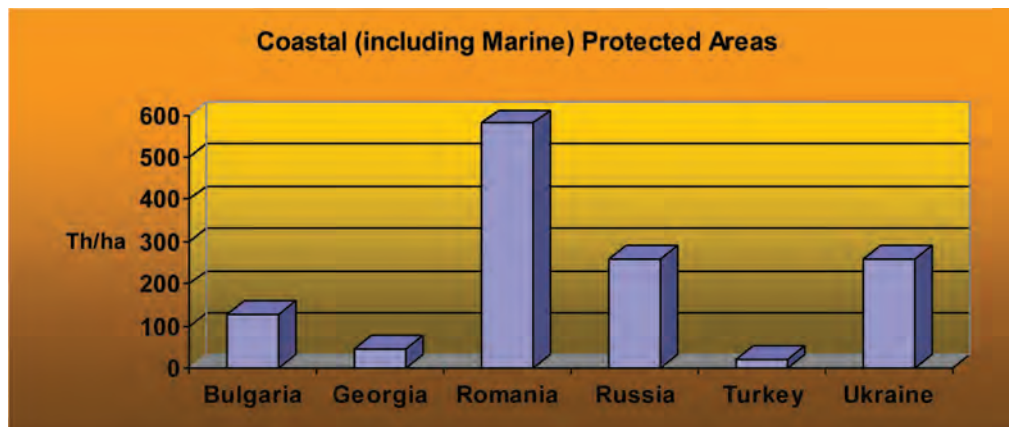


Figure 9. Protected areas in the Black Sea by country



## Annex III: LBS Report 2007: Land Based Pressures on the Black Sea.

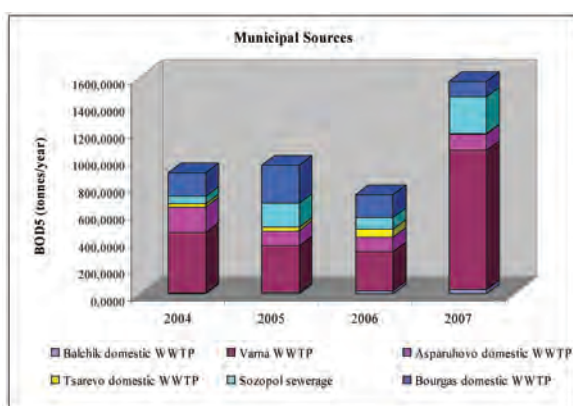
The Reports deals with Municipal, Industrial Pollution Sources and Riverine Loads to Coastal Waters.

### *Municipal Pollution Sources*

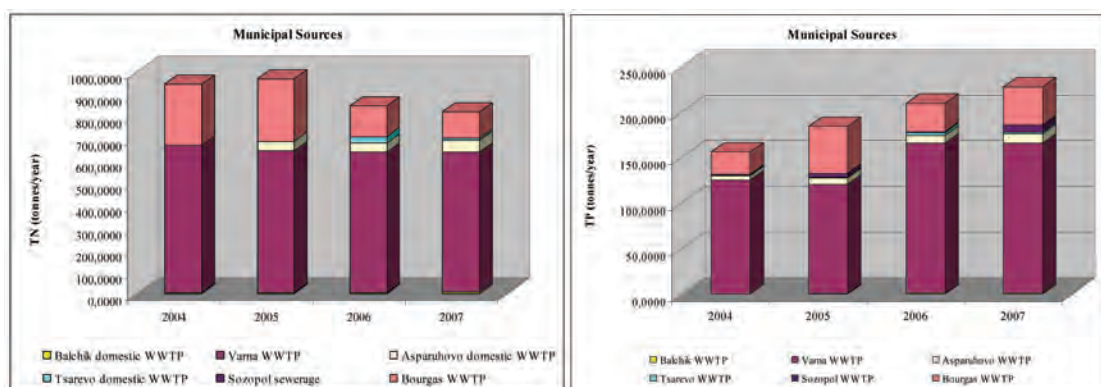
Municipal Sources include the wastewater treatment plant (WWTP) discharges from the residential (urban) areas that were reported by the BS States. For the municipal pollution sources five parameters, which are BOD5, Total Nitrogen (TN), Total Phosphorus (TP), Total Suspended Solids (TSS) and Flow (Q), have been selected to illustrate in this report.

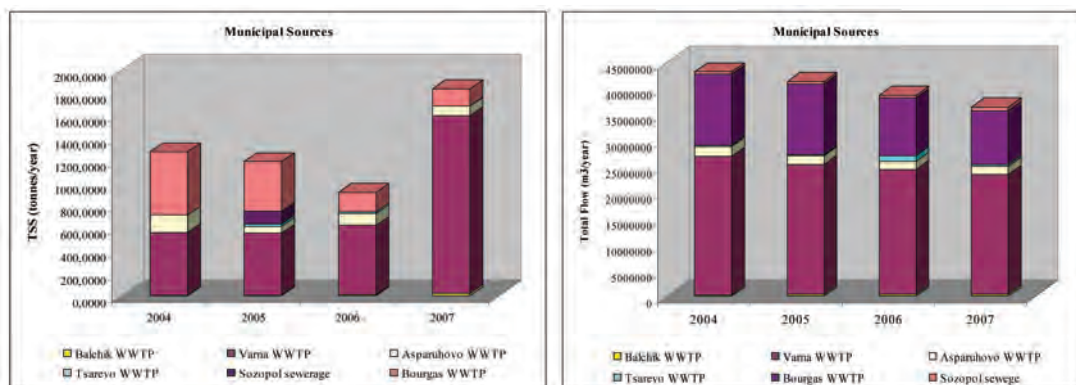
### *Bulgaria*

The six Municipal Sources, identified as Hot Spots, reported by Bulgaria are Balchik, Asparuhovo, Tsarevo, Varna, Bourgas and Sozopol.



As it is illustrated in the Figure above, the highest BOD contribution is coming from Varna WWTP and Sozopol sewerage which have app 54% and 15% of the total amount respectively in 2007. Naturally, Varna has the biggest load for Bulgaria because it is one of the biggest cities in the Bulgarian Black Sea coast.

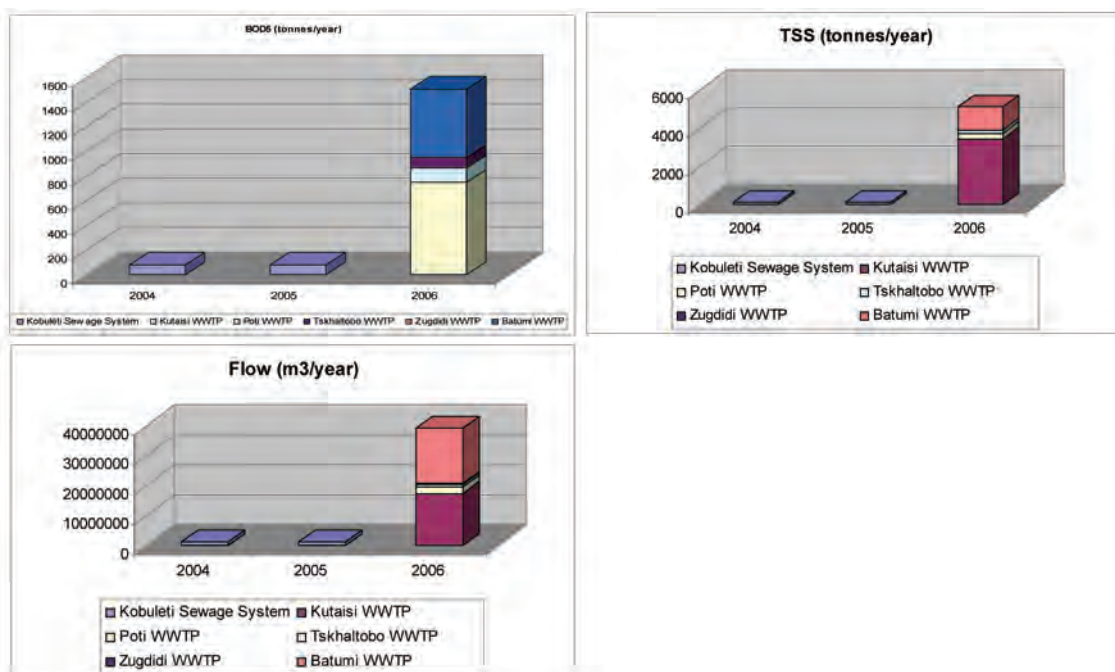




Since Bourgas WWTP does not discharge directly into the sea, Varna is the largest source that discharges directly into the Black sea.

### Georgia

Georgia has reported only 3 parameters in 2006, which are BOD-5, TSS and Q. Six Municipal Sources reported by Georgia are Kobuleti, Kutaisi, Poti, Tskhaltobo, Zugdidi and Batumi.

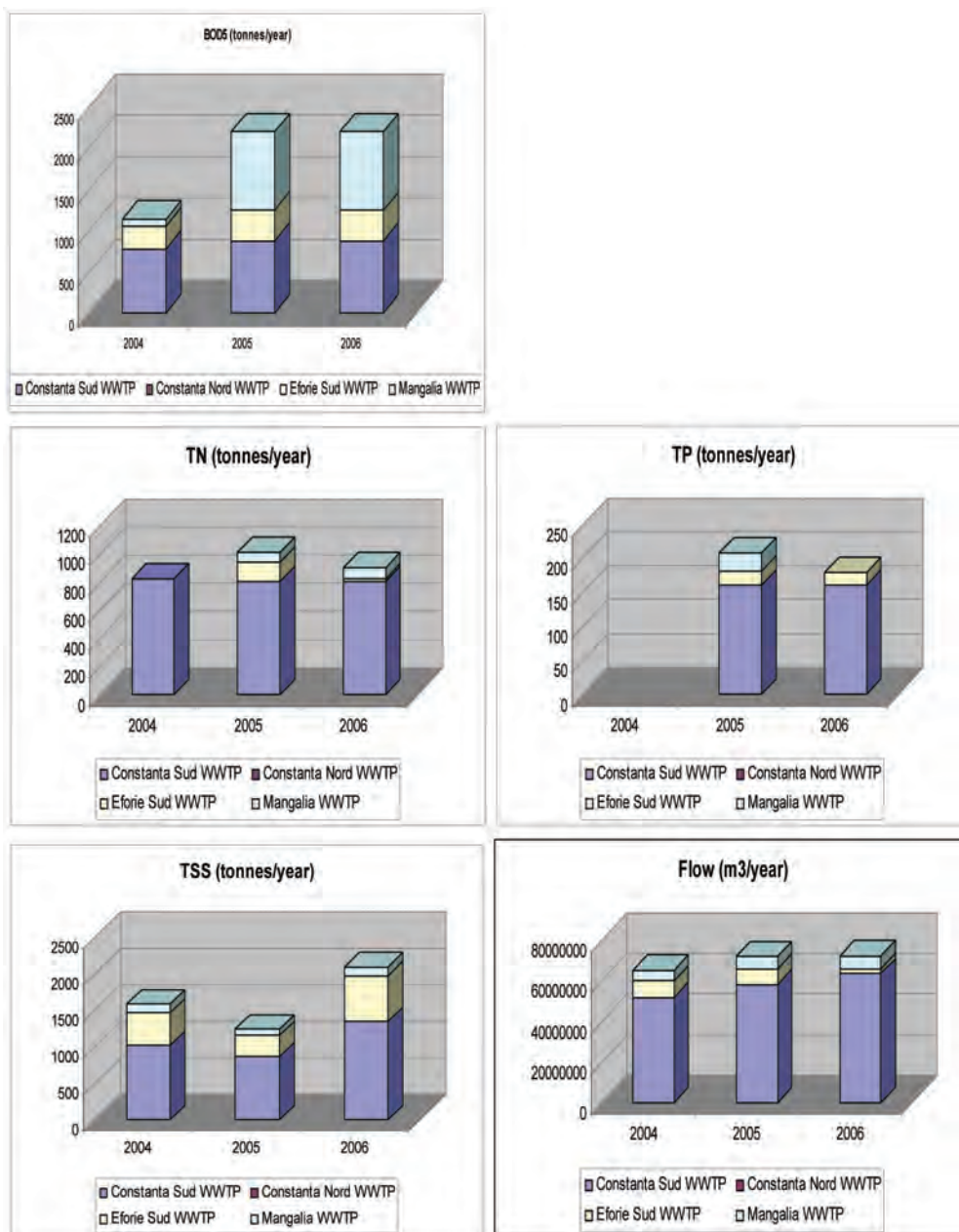


Kutaisi and Batumi seems the largest BOD-5 and TSS sources among the six municipal sources reported by Georgia. However, due to the fact that the other points were not reported by Georgia, we can not conclude clearly as Kutaisi and Batumi are the largest pollution sources. Neither TN nor TP were reported for 2006 by Georgia.

### Romania

Romania has four municipal sources, which are Constanta Sud, Canstanta Nord, Eforie Sud and Mangalia.





Constanta Sud (south) is the largest pollution source along the Romanian coastline.

### Russian Federation

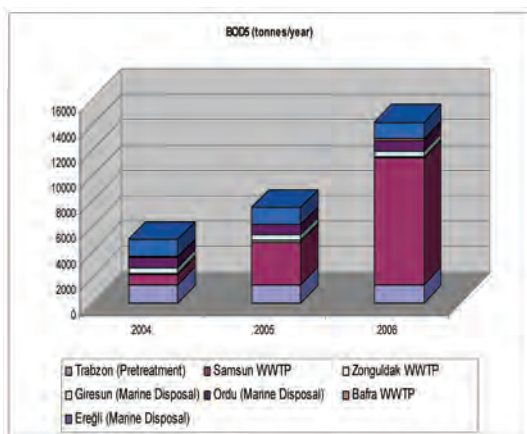
Russian Federation Municipal sources of pollution at the Black Sea	Adler
	Kudepsta
	Bzugu
	Navaginskiye
	Dagomis
	Lazarevskiye
	Tuapse
	Gelendzhik
	Kabardinka
	Novorossiysk
	Anapa

### Annex III. LBS Report 2007: Land Based Pressures on the Black Sea

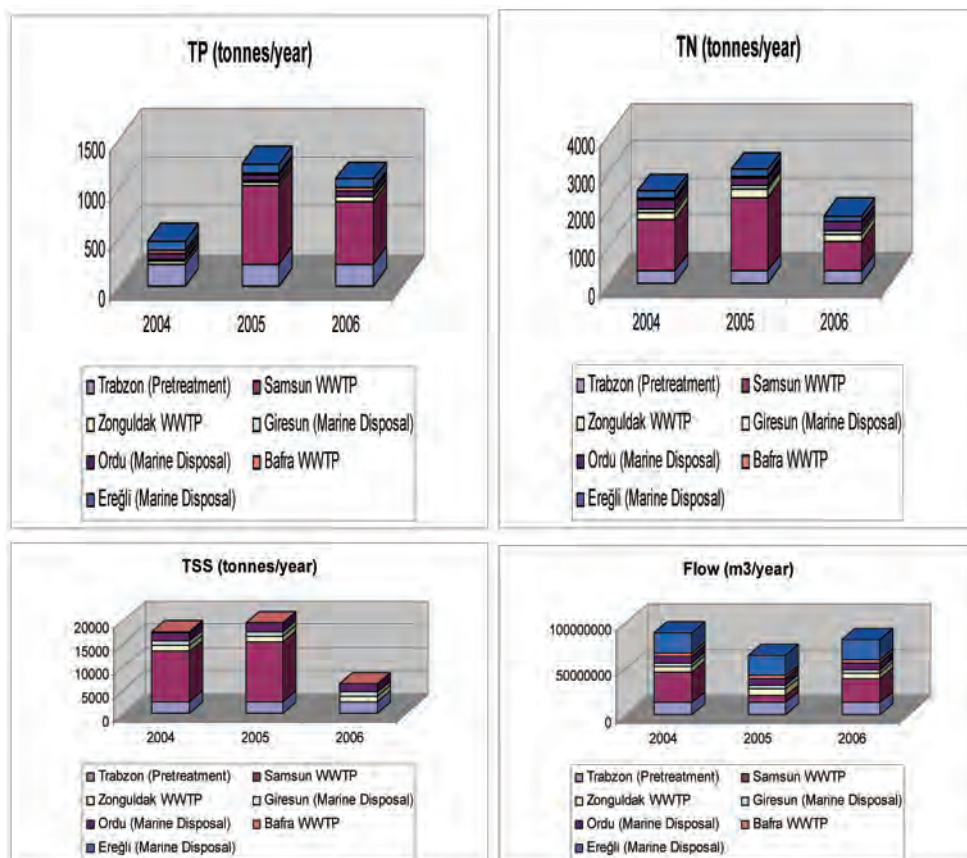


### Turkey

Turkey has seven municipal sources, which are Trabzon, Samsun, Zonguldak, Giresun, Ordu, Bafra and Ereğli.





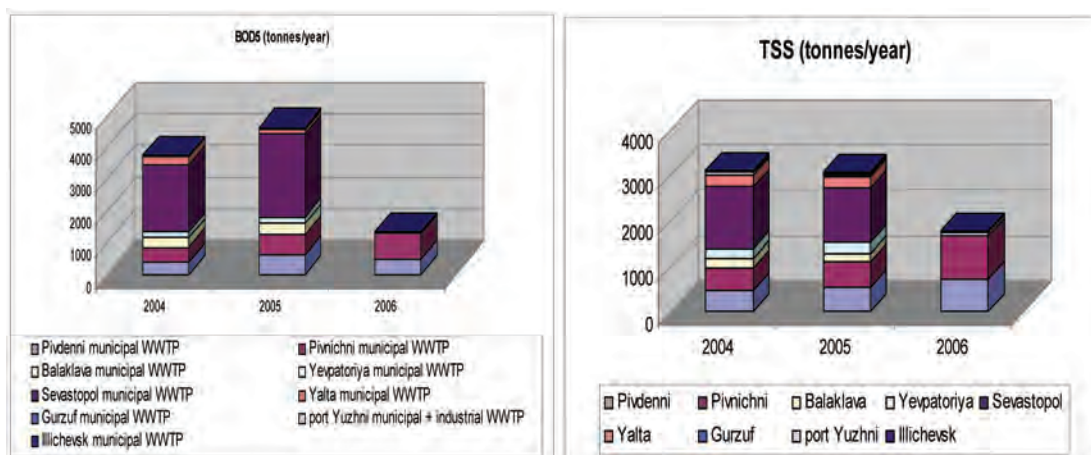


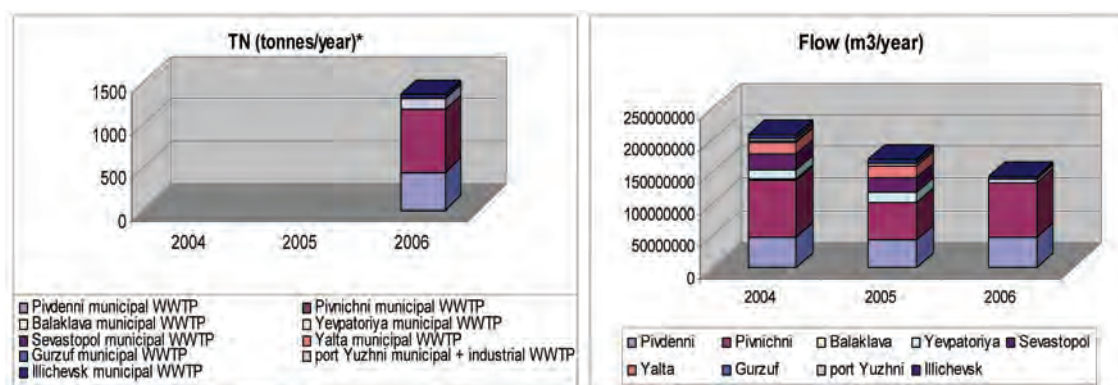
Samsun WWTP is the largest pollution sources among the seven sources that Turkey reports.

### Ukraine

Ukraine has eight municipal and one mixed discharging points, which are Pivdenni, Pivnichni, Balaklava, Yevpatoriya, Sevastopol, Yalta, Gurzuf, Illichevsk and Port Yuzhni (mixed source). Ukraine has not reported all the parameters and all of the sources; therefore it is difficult to assess the largest pollution source for the BS coming from Ukraine.

TN was not reported by Ukraine. To give an idea, the sum of NO<sub>2</sub>-N, NO<sub>3</sub>-N and NH<sub>3</sub>-N was used instead of TN.





\* NO<sub>2</sub>-N+ NO<sub>3</sub>-N+ NH<sub>3</sub>-N

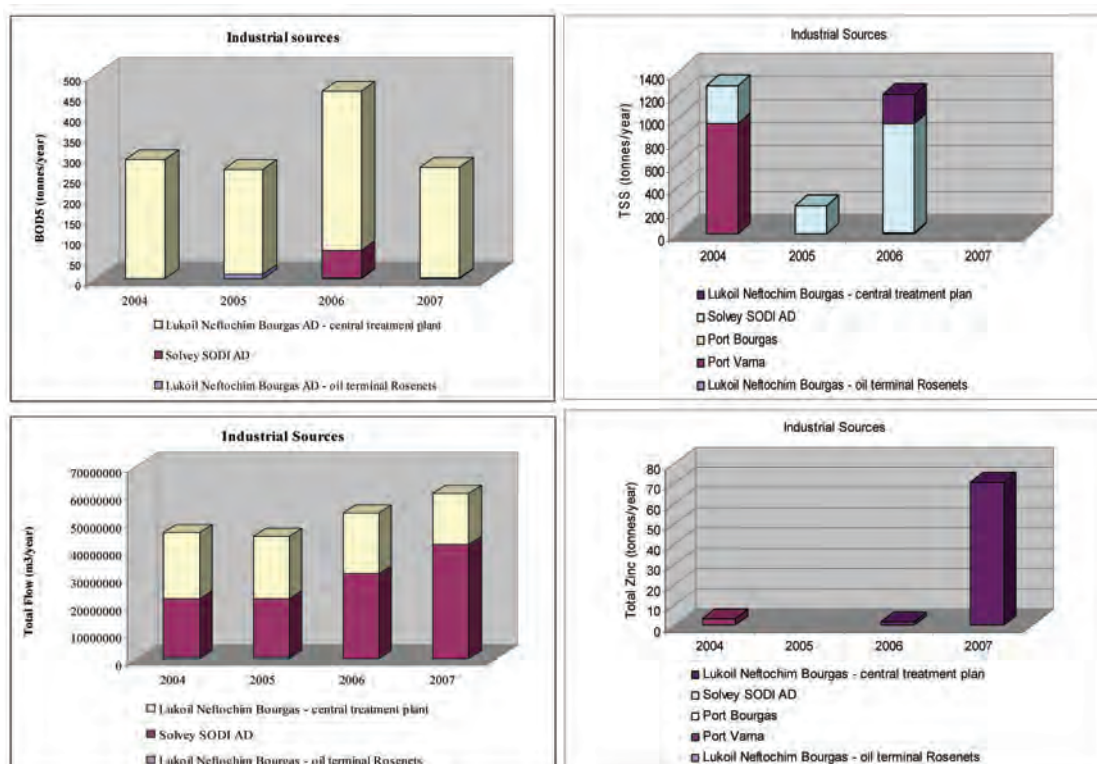
As it was mentioned before, it is difficult to determine which municipal source has the largest load to the BS among the WWTP's that Ukraine reports because of the lack of data. So, the decline in the trend may not reflect an actual decrease.

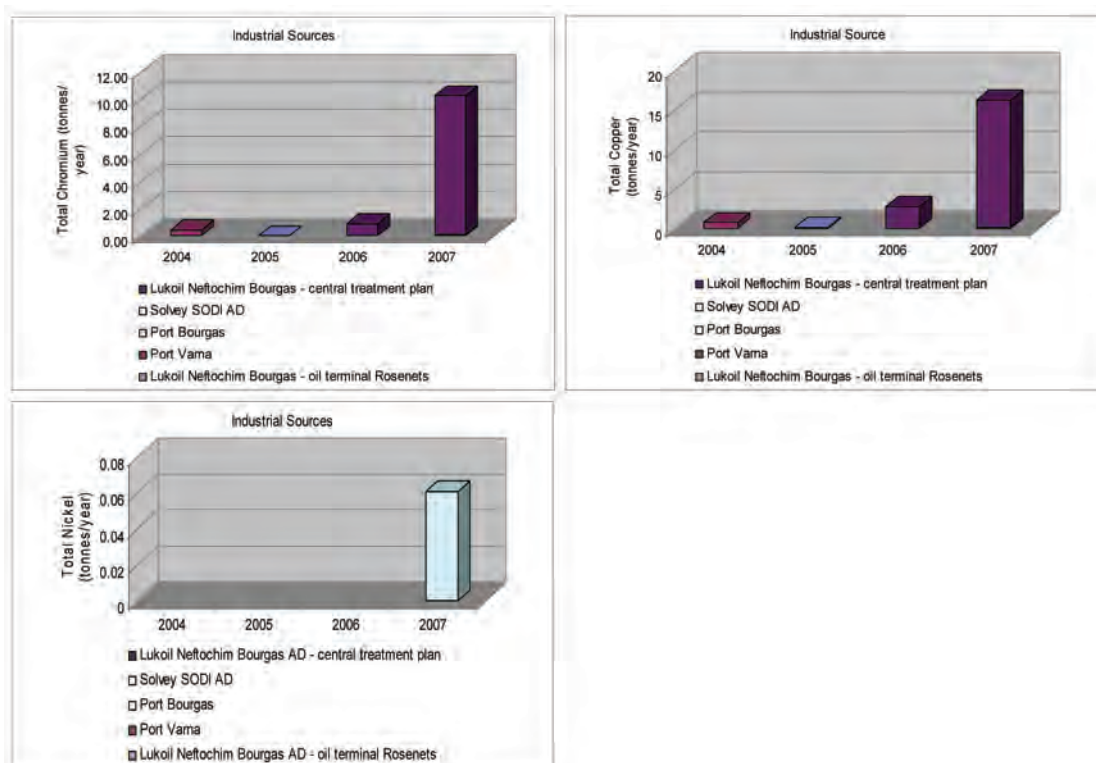
### Industrial Pollution Sources

Industrial sources that were reported by the BS States include, oil terminal, mining activities, ports and other relevant industries within the coastal line of the BS States. Every State has named its own industry and reported their effluents to the Commission. BOD<sub>5</sub>, TSS, Q and heavy metal concentrations were selected to illustrate in this report. Since most of the states have gaps on these parameters in their reports, evaluation of the industrial inputs fully is not possible.

### Bulgaria

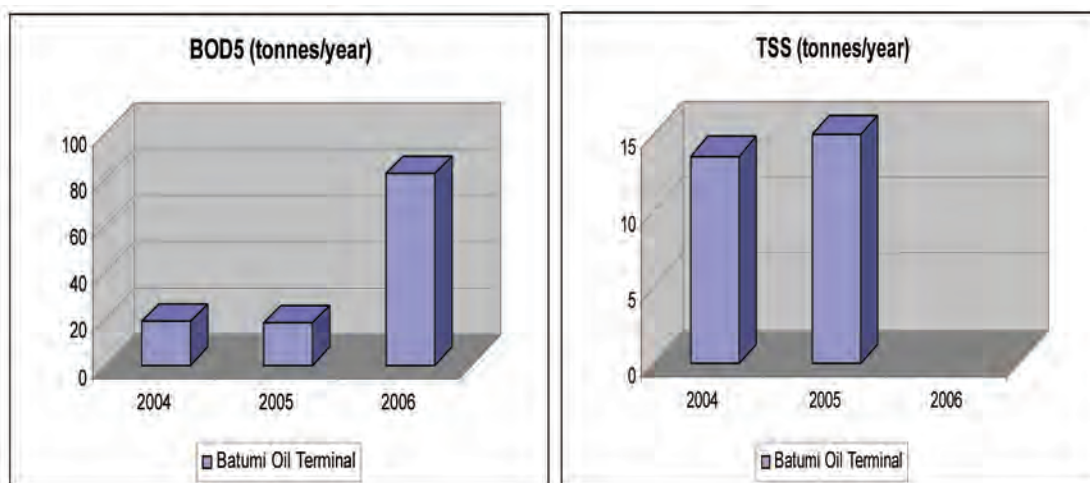
Bulgaria reports five industrial sources, which are Lukoil Neftochim Bourgas AD - oil terminal Rosenets, Port Varna, Port Buurgas, Solvey Sodi AD and Lukoil Neftochim Bourgas AD - oil refinery (central treatment plan). From them three industrial sources are reported as Hot Spots.



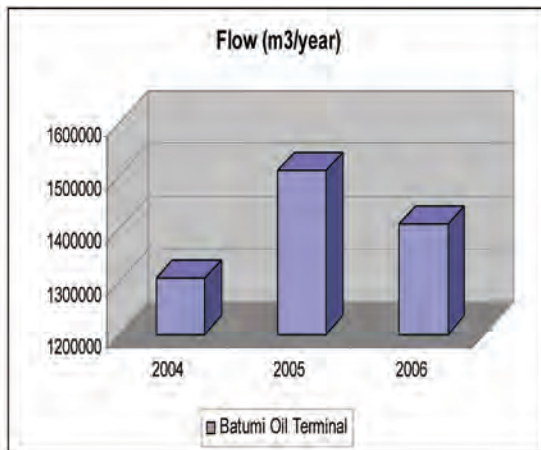


## Georgia

Georgia has only one industry, Batumi Oil Terminal, to report.



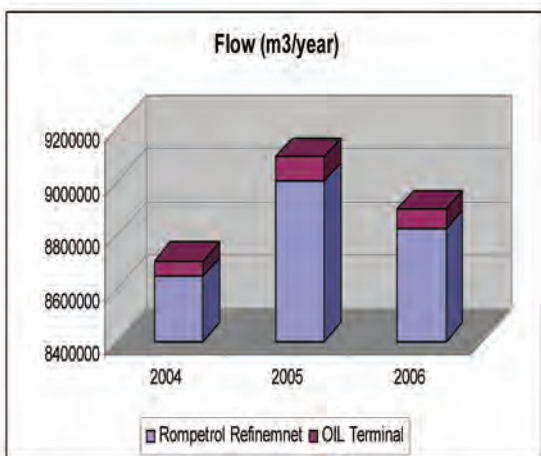
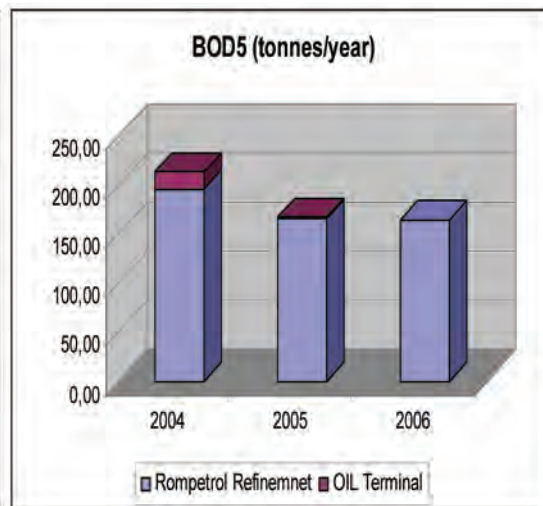
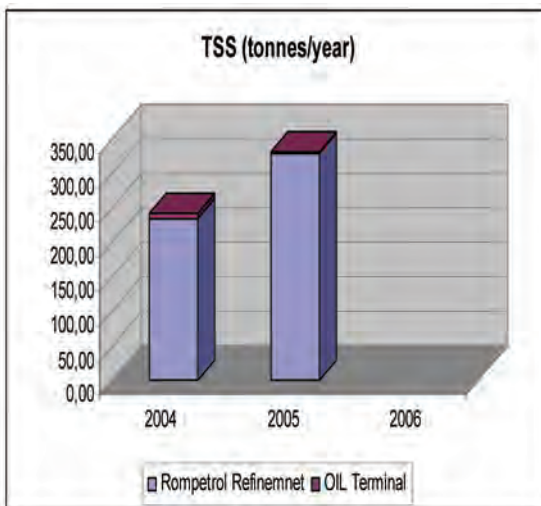




Heavy metals and TSS for 2006 were not reported by Georgia.

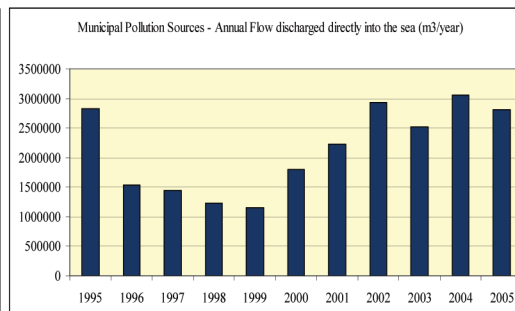
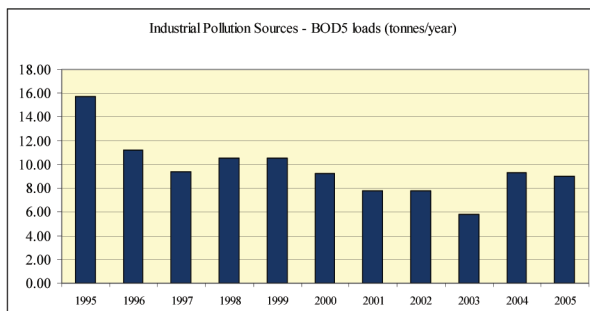
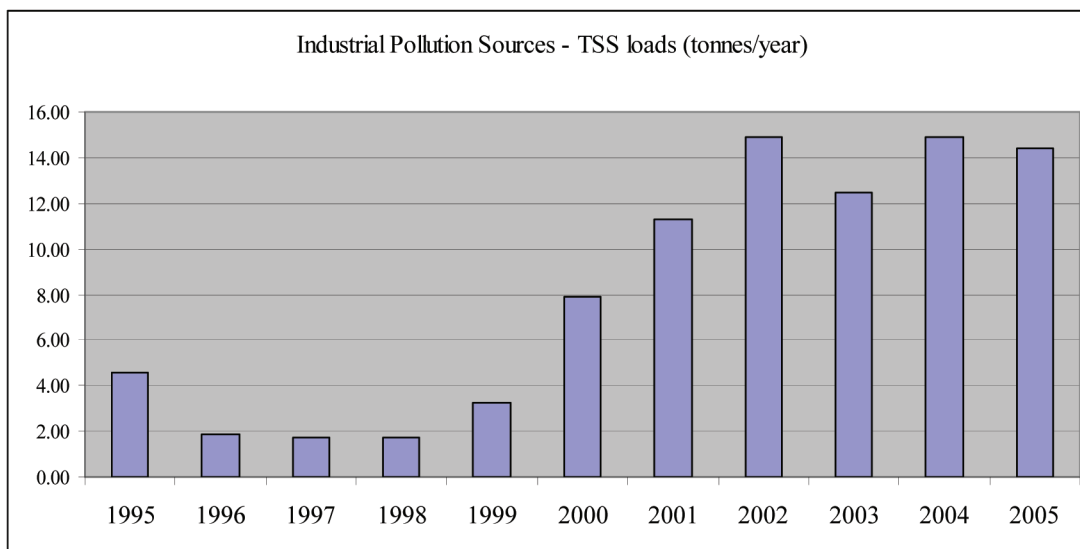
### Romania

There are two industries along the Romanian coast that were reported to the Commission, which are Rompetrol (refinery and petrochemical plant) and Oil Terminal. Heavy metals were not reported by Romania.



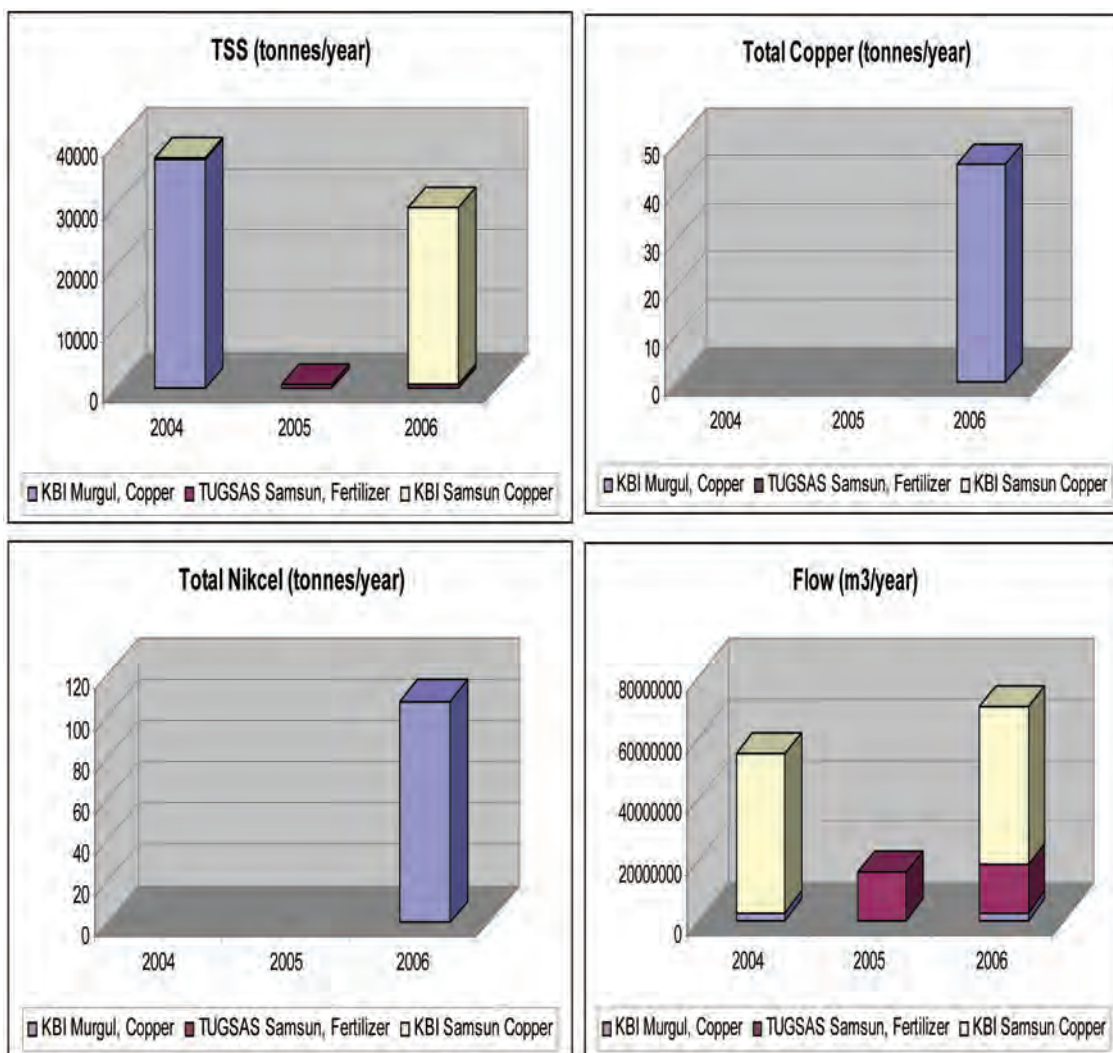
### Russian Federation

Russian Federation	Ballast water treatment plant, Tuapse	Tuapse	Oil pollution	"Nafta-T" company
	Ballast water treatment plant, Novorossiysk	Novorossiysk	Oil pollution	Chernomortransneft



### Turkey

The industries that were reported by Turkey are Turas KBI Murgul, TUGSAS Samsun and KBI Samsun Copper. The reported parameters are presented below:



### Ukraine

Industry loads have not been reported by Ukraine.

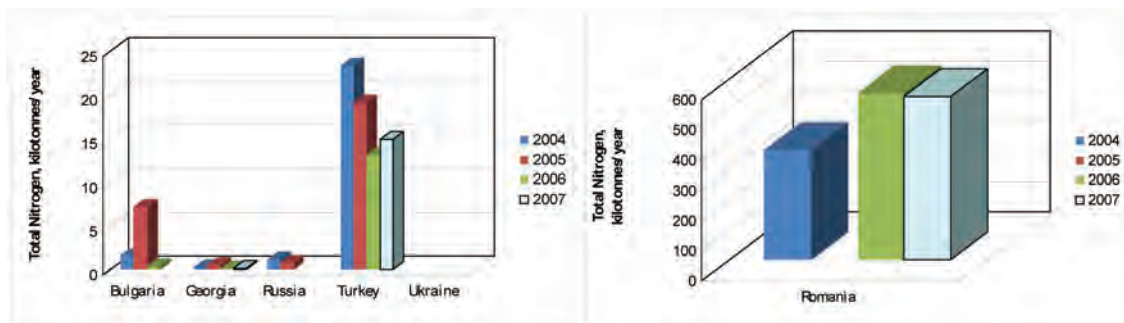
### Riverine Loads to Coastal Water

According to the Black Sea Strategic Action Plan, all riparian countries report the agreed parameters that are measured in the individual rivers that flow to the Black Sea in their coastline. Ukraine reports eight rivers, Russia reports six rivers, Georgia and Turkey report five rivers, Romania reports three rivers (braches of Danube) and Bulgaria reports two rivers. In this report, total riverine inputs from each county for 2006 were evaluated for TN, TP, BOD-5 and TSS loads and Q. Total riverine input from Romania was plotted separately since the total load from Romania (Danube) was very high when compared with the other countries. In fact Danube is the largest pollution source for the Black Sea in comparison with the other reported rivers.

Additionally, total loads for 2004 and 2005 were included to show general picture.

### Total Nitrogen (TN) Load

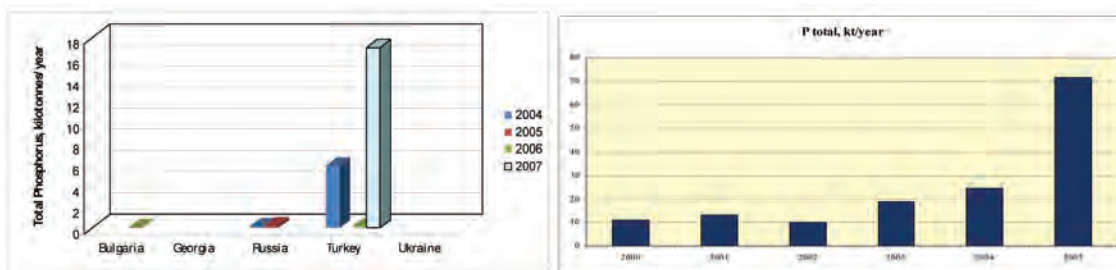
Georgia has not reported TN for all of the five rivers. TN load reported in 2004 is the load from Rioni (north) only and loads reported in 2005 and 2006 includes loads from Rioni North and Tchorokhi. Georgia has not reported TN in 2006; hence the sum of NO<sub>2</sub>-N, NO<sub>3</sub>-N and NH<sub>3</sub>-N was used instead of TN. TN load reported by Turkey in 2004 is also the cumulative of NO<sub>2</sub>-N, NO<sub>3</sub>-N and NH<sub>3</sub>-N (excluding Ammonia from Filyos exit and Çoruh River).



Measured at Reni, SoE Report data.

### ***Total Phosphorus (TP) Load***

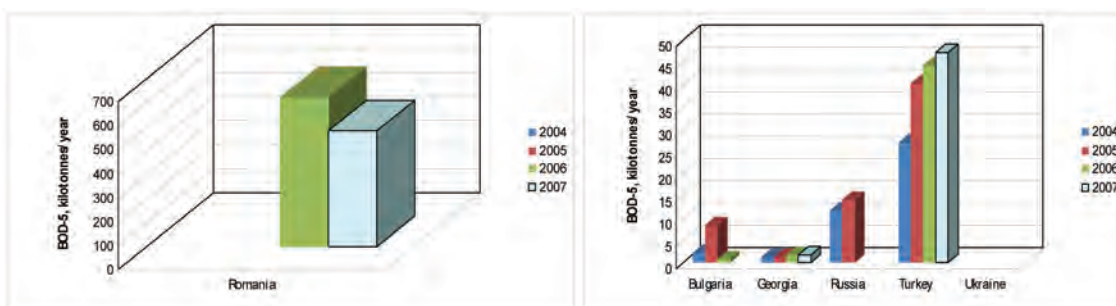
Evaluation of TP load from the rivers may not give a clear information since some of the countries have not reported it at all, while the others have reported the values not from all rivers within their borders. In 2004, the TP load reported by Turkey includes loads from Sakarya and Çoruh Rivers and load reported by Romania includes only Sulina Branch load.



The second Figure above shows the TP VALUES Measured at Reni (TNMN data, ICPDR Reporting to the BSC). TP value for Reni in 2005 is indeed substantially elevated, but this value was double-checked by the Romanian monitoring experts and approved formally by Romania. The difference between 2005 and 2004 is that in 2005 a substantial increase in suspended solids load was observed at Reni being a carrier of TP. But of course other factors can play certain role as well.

### ***Biologic Oxygen Demand (BOD-5)***

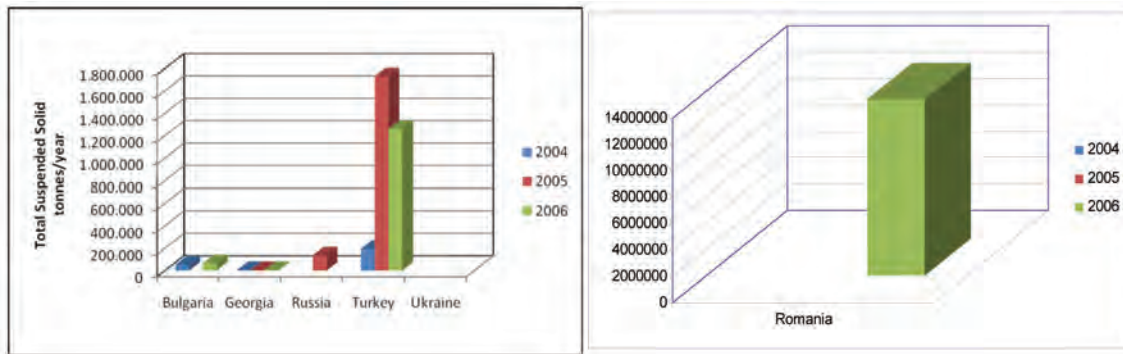
BOD-5 loads reported by Georgia and Turkey do not include Rioni (south) and Çoruh river, respectively.



### ***Total Suspended Solid (TSS) Load***

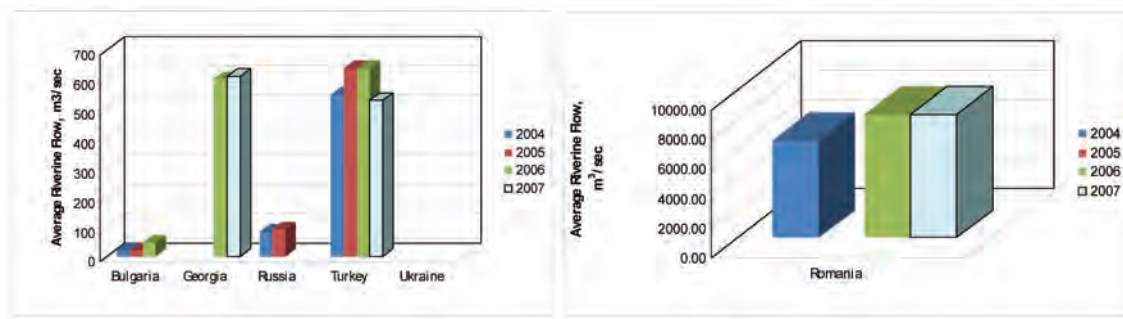
TSS loads reported by Turkey in 2004 and 2005 do not include Filyos Exit and Çoruh River and in 2005 it does not include Çoruh River. Similarly, Georgia has not reported TSS loads from Supsa River in 2004 and 2005, and TSS load from Rioni (South) in 2006.





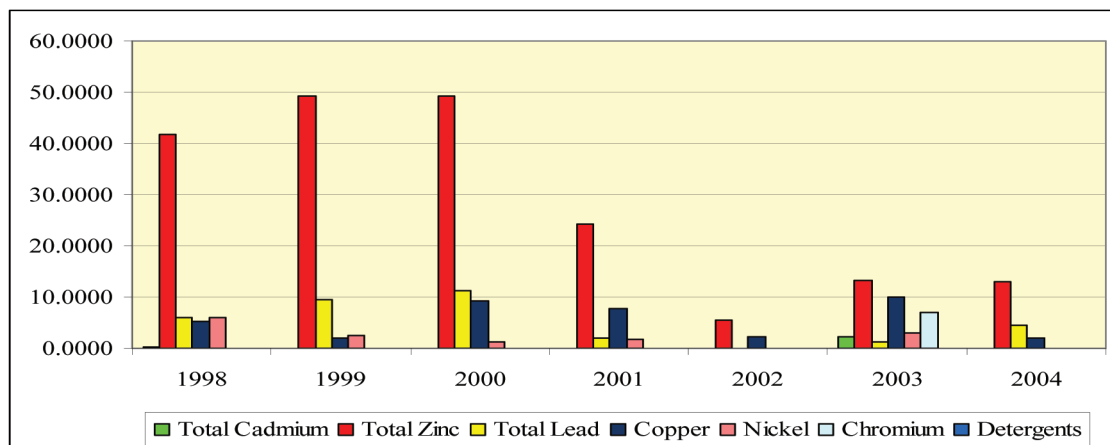
### Average Riverine Flow (Q)

Total Russian riverine flow in 2005 does not include flow from Tuapse.



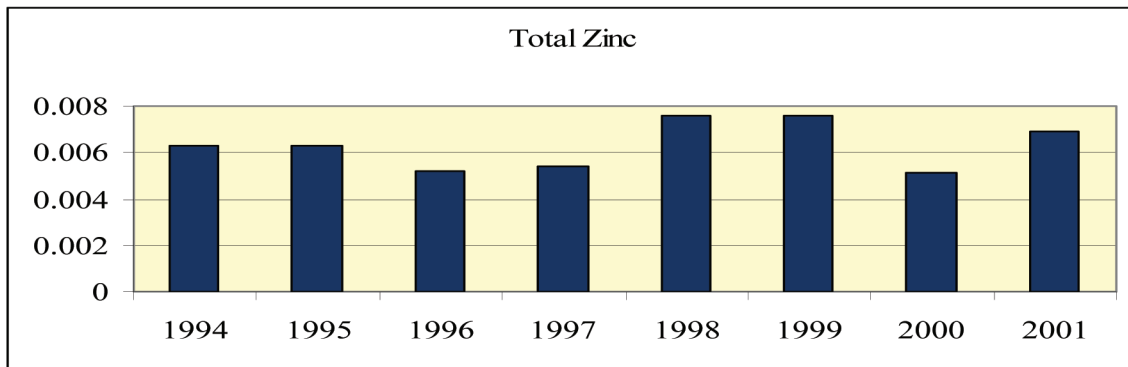
### Total River Input of Trace metals and organic pollutants (tonnes)

#### Bulgaria

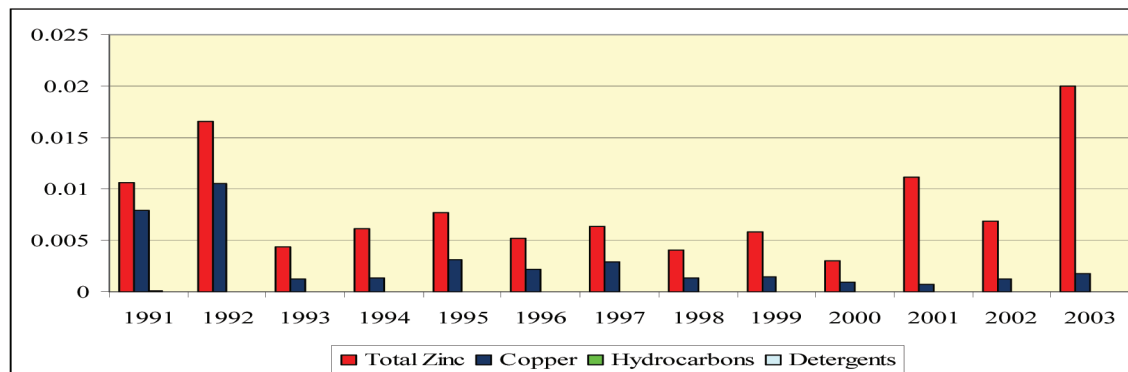


#### Georgia

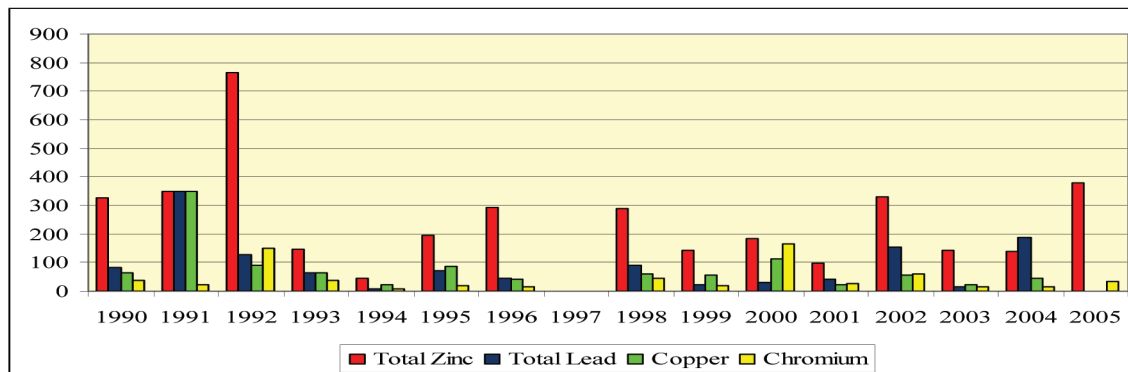
Rioni (north)
Rioni (south)
Tchorokhi
Supsa
Khobi



*Russian Federation, Sochi, trace metals and detergents (tonnes), hydrocarbons (kilotonnes)*

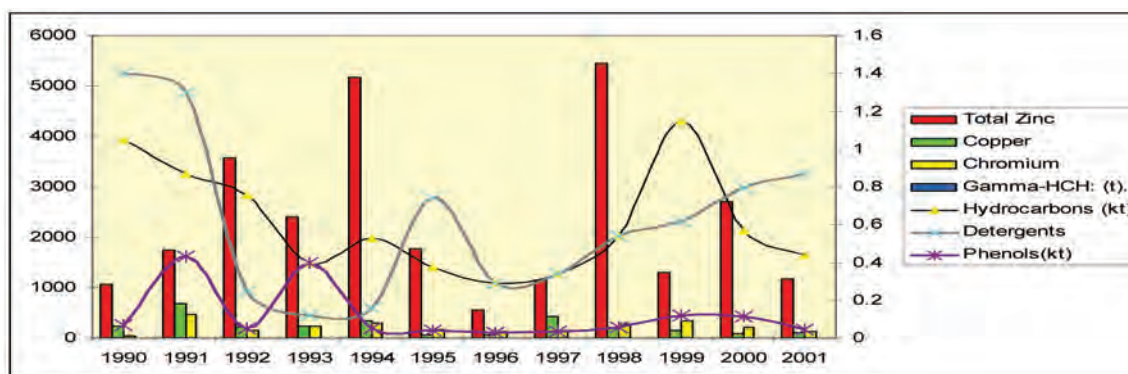


*Turkey (River Sakarya in tonnes)*

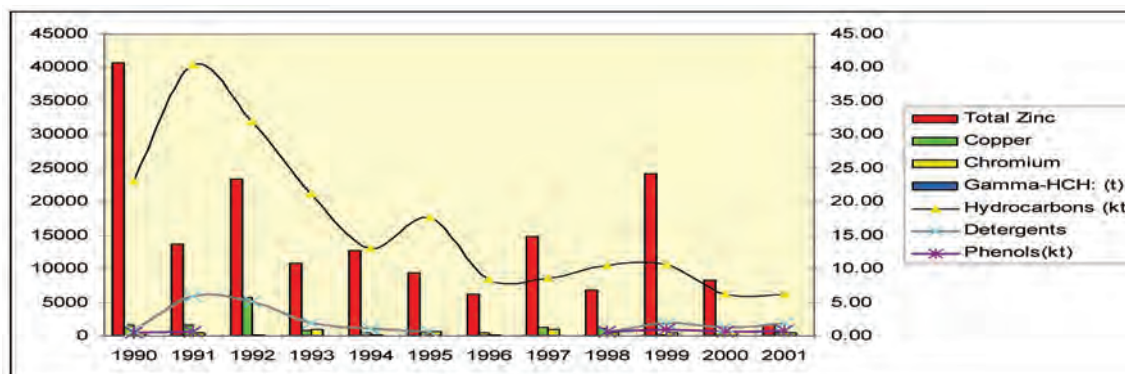


*Ukraine*

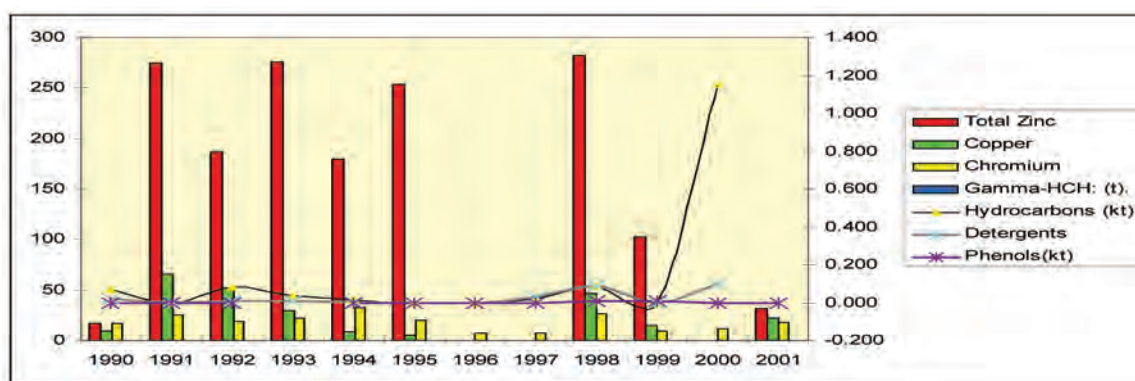
Dnipro River (trace metals in tonnes)



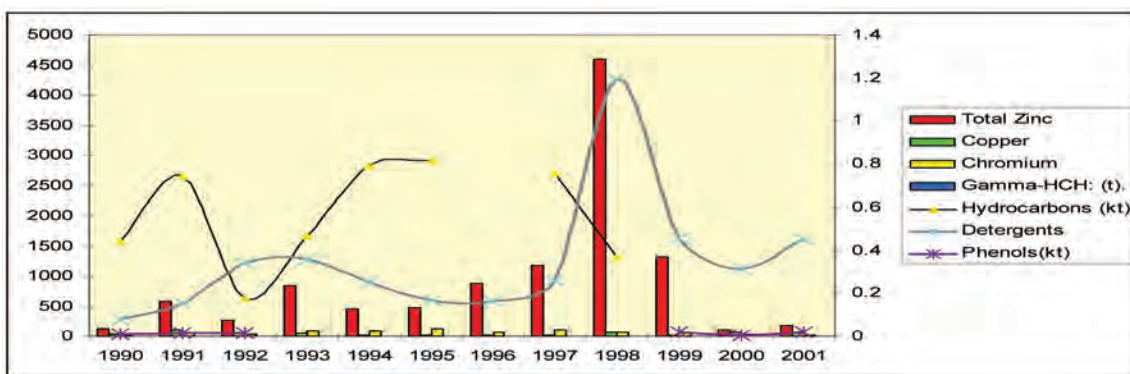
### Danube River (Chilia branch)



### Southern Bug



### Dniester River



## Annex IV: Nationally reported data

(see also [www.blacksea-commission.org](http://www.blacksea-commission.org) - BSIMAP and BSIS in Inf&Resources)

Reporting of PMA and LBS AG: Pollution, Monitoring and Assessment/Land Based Sources and cross-cutting issues with other Advisory Groups reporting (CBD, FOMLR, CBD and ICZM)

Contaminant important to be monitored	Policy questions addressed	BSIMAP Activity	Action by	Actions in 2007-2011 undertaken already and planned
Cd, Hg, Pb, Cu	What are the loads of trace metals from land-based sources of pollution? Are agreed measures effective in reducing pollution?	1. Monitor discharges and estimate riverine, direct industrial and municipal loads  2. Regularly update the list of hot spots	AG LBS	To improve the reporting format To improve/quality check the regional database on land-based pollution discharges To compile national meta data on all industrial and municipal sources of pollution in the coastal BS zone To develop set of indicators to continue harmonizing monitoring strategies
	What are the concentrations in water, sediments and biota?	1. Monitor concentrations in water, sediment and biota	AG PMA	To improve the format and procedure for information exchange To quality check the regional pollution monitoring database To develop background values and assessment criteria for environmental quality To sustain the regional quality assurance and quality control system To develop set of indicators for reporting on the state of the Black Sea environment To outline trends To continue harmonizing the methods used and national monitoring strategies
Pesticides	What are the levels of pesticides in the water, sediments and biota?	Monitor concentrations in water, sediments and biota	AG PMA, LBS	To assess the scope of problem for the Black Sea by random sampling in the vicinity of major sources of organotin pollution (say major ship routes)
PCBs (not reported by the BS states)	What are loads of PCBs in the Black Sea	Up to now not being included in the national reporting, to promote such observations needed	AG LBS	To compile national data if available: inventory of PCBs sources and preliminary assessment of loads, including riverine inputs

## Annex IV. Nationally reported data

Contaminant important to be monitored	Policy questions addressed	BSIMAP Activity	Action by	Actions in 2007-2011 undertaken already and planned
	What are the concentration of PCBs in marine biota (including mammals) and bottom sediments	Needed pilot monitoring of PCBs levels in bottom sediments and biota and decision on their relevance for regional monitoring program	AG PMA	To propose including sampling for PCBs
PAHs	Which are the major sources and how large are the inputs	1. To update the list of pollution sources 2. To assess input of PAHs from different pollution sources	AG LBS AG PMA	Further compile and quality check data on PAHs loads where available
	What are the concentrations in water, sediments and biota	1. To carry out the screening of the levels of PAHs in water, biota and bottom sediments	AG PMA	To include PAHs measurements in programs of cruises 2. To quality check the existing information on PAHs concentrations in water, sediments and biota and
	Do PAHs affect fish and shellfish	1. To identify effects of contamination		1. To incorporate random sampling where possible to address the problem (feasibility study)
NHS	What chemicals are transported via the Black Sea?	Up to now not being included in the national reporting	AG ESAS	To compile meta data on regular transportations Illegal discharges, Accidents
Phenols	What are the loads of phenols coming from land-based sources of pollution?  What are their concentrations in water and sediments?  Do phenols pose risk to human health and Black Sea environment?	Conduct inventory of pollution sources of phenols, loads estimations, concentrations in water and sediments monitoring	AG LBS, PMA	To assess level of loads stemming to the marine environment  To assess level and impact of phenol pollution on coastal waters and sediments  To outline trends
Detergents	What are the concentrations in Black Sea waters and sediments? What are the loads from rivers and other land-based sources of pollution?	Monitor concentrations of detergents in coastal waters, sediments, estimate loads	AG PMA	To assess level of detergents in coastal waters and sediments, improve reporting  Outline trends

Implementation of the Strategic Action Plan  
for the Rehabilitation and Protection of the Black Sea (2002 - 2007)

Contaminant important to be monitored	Policy questions addressed	BSIMAP Activity	Action by	Actions in 2007-2011 undertaken already and planned
Oil pollution, petroleum hydrocarbons	What are the pollution sources of oil	1. To assess pollution loads of oil from land based sources and offshore installations 2. Illegal discharges 3. Accidents	AG LBS, ESAS	Compile national information on oil pollution, include satellite investigations, improve reporting
	What are the values of total petroleum hydrocarbons in water and sediments?	Monitor concentrations		Identify background values, assess oil pollution, improve reporting
Radionuclides	What are the trends of radionuclides in the Black Sea?	1. Monitor concentrations of radionuclides in water, sediments and biota 2. Assess risk to human health and biota	AG PMA  IAEA	1. Assess trends  2. Improve reporting and compilation of available data
	Do they pose risk to human health and Black Sea biota?			
Eutrophication				
Nutrients	Are agreed measures effective in reducing eutrophication? What are the levels of nutrients in water and sediments, what are the loads from rivers and other land-based sources of pollution?	Monitor concentrations and discharges, assess loads of nutrients	AG LBS  AG PMA	Quality check, improve reporting, outline indicators and trends for loads and concentrations Introduce monitoring of nutrients in sediments to assess the level of secondary eutrophication
Phytoplankton	How often phytoplankton blooms occur?	Monitor chlorophyll, phytoplankton abundance, biomass and species composition	AG PMA AG CBD	To contact JRC for satellite images, To improve reporting, to radically change the CBD reporting format
	What are the areas of most frequent phytoplankton blooms?			
	What are the consequences for the Black Sea flora and fauna?			
Zoobenthos	What are zoobenthos communities structure and abundance?	Monitor abundance, species composition	AG CBD	Habitats classification and mapping, outline of trends
	Are their state improving in comparison to previous periods?			
State of other communities, endangered species	What is the state of macrophytes? Do numbers of endangered species increase?	Monitor abundance	AG CBD	Red data book update
Litter				



## Annex IV. Nationally reported data

Contaminant important to be monitored	Policy questions addressed	BSIMAP Activity	Action by	Actions in 2007-2011 undertaken already and planned
Sources and occurrence	What are the sources of litter, its amount, and areas of its occurrence	Continue assessing the scope of the problem in the Black Sea region	AG ESAS AG LBS	1. Include some observations in the GEF cruises
Effects on birds and marine organisms	What are the effects on birds and marine organisms	Not part of the monitoring system	AG CBD AG FOMLR	Compile information
Fisheries				
Impact of fisheries on ecosystem	What are the trends in fish catches? Which species are overfished?  By catches and discards levels?  Bioaccumulation of toxic substances?  Increase in fishing fleet?	monitor ichthyoparameters, assess stocks, catches, etc.	AG FOMLR  AG PMA	Harmonization of methodologies, improvement of the format and national reporting, improved assessments of stocks, etc.
Mariculture		initiate regular monitoring	AG FOMLR	Improve reporting
Genetic disturbance	What are the trends in aquaculture development?  What species are cultivated?			Track the eutrophication effect of mariculture.
Transfer of diseases	What diseases were reported?			
Chemicals used	What chemicals were used for treatment?		AG PMA	
Habitats destruction	Are destructive used in the Black Sea region? What are the reasons for habitats destruction in the Black Sea?	Monitor via sonars, underwater video, etc.	AG CBD, FOMLR	Create reporting format for habitats, assess most threatened habitats at present, identify habitats of Black Sea importance to designate them as protected areas.
Exotic species	What exotic species are intentionally and non-intentionally introduced	Monitor exotic species	AG FOMLR AG CBD	Road map for implementation of the BWM Convention, improve reporting
	What are risks and vectors of introduction of new exotic species	Assess risks and vectors of introduction of new exotic species		
Microbiological indicators	What is the quality of bathing waters in terms of bacteriological pollution	Monitor bacteriological parameters	AG LBS	To better compile national information on the quality of bathing waters, develop indicators and visualization on the WEB page of the BSC



Contaminant important to be monitored	Policy questions addressed	BSIMAP Activity	Action by	Actions in 2007-2011 undertaken already and planned
Atmospheric pollution	What is the level of atmospheric pollution? Which areas are mostly polluted?	Up to now very poorly reported	AG PMA, LBS	Improve reporting format, become end-user of PROMOTE project
Diffuse courses of pollution	What is the level of nutrients and pollutants entering the Black Sea from diffuse sources of pollution?	Up to now not reported, and not being assessed	AG LBS, ICZM	Develop guideline for inventory, classification and assessment of diffuse sources of pollution, starting with nutrients. Development of models or adoption of available ones.

#### ***Reporting of CBD AG (Conservation of Biodiversity Advisory Group)***

<b>What and when exotic species are registered in your country</b>
What international or bilateral agreements relevant to conservation of biological diversity are signed/ratified by your state?
Backterioplankton abundance and biomass
Phytoplankton abundance, biomass, predominating groups
Zooplankton, including opportunistic species
Macrophytes, abundance, biomass, species, indicators species
Macrozoobenthos, abundance and biomass by major groups, predominating species
What species are in the national RED Data Book?
When the National Red Data Book has been updated
Is enforcement of the ban on hunting marine mammals effective in your country?
What assessments of the marine mammals were conducted in your country
How often you communicate with the Activity Center on Conservation of Biological Diversity in Batumi, Georgia
What national centers/sanctuaries/dolphinaria do you have in your country!
What Projects/Programs/Studies on biodiversity of coastal zone and marine waters were conducted in your country
International or bilateral agreements signed or ratified for the conservation of habitat and landscape
Conservation areas in the Black Sea including coastal zone and wetlands
National policies, regulations, action plans for conservation biological and landscape diversity
What Agencies are responsible for management of protected areas
What are national instruments for management of conservation areas
How are authorities that manage conservation areas equipped and staffed
What public awareness campaigns were developed for conservation areas
What scientific publications were of Black Sea importance were published in your country

#### ***Reporting of FOMLR AG (Fishery and other Marine Living Resources Management)***

The group reports on:

1. Legislation and strategies development, institutions involved
2. Aqua and mariculture activities in terms of:  
Fish restocking farms and species cultivated

## Annex IV. Nationally reported data

Mussel and fish rearing

Norms and impacts

Socio-economic indicators (poorly reported)

3. Fishing Fleet

4. Employment and other socio-economic indicators poorly reported.

5. Fishing gears

6. Fish processing

7. Fishing areas and seasons

8. By-catch and discard

9. Landings

10. Stocks

### **Reporting of LBS AG: Land Based Sources of Pollution**

#### **Riverine loads agreed determinants**

Black Sea Rivers

	UNITS	Number of observations ( to be included)	Regional Agreement from October 2006
YEAR			
STN_ID			
LONG			
LAT			
STN_NAME			
RIVER_NAME			
CATCH_NAME			
SEA_AREA_NAME_ID			
Dissolved oxygen			Changed
Nitrate (N-NO3)	kilotonnes		
Nitrite (N-NO2)	kilotonnes		
Orthophosphate	kilotonnes		
Total Nitrogen	kilotonnes		
Total Phosphorus	kilotonnes		
Ammonia	kilotonnes		
Zinc (Zn) - Dissolved			add
Copper (Cu) - Dissolved			add
Chromium (Cr) - Dissolved			add
Lead (Pb) - Dissolved			add
Cadmium (Cd) - Dissolved			add
Mercury (Hg) - Dissolved			add
Nickel (Ni) - Dissolved			add
Total Zinc	tonnes		
Total Copper	tonnes		
Total Chromium	tonnes		
Total Lead	tonnes		
Total Cadmium	tonnes		Changed

	UNITS	Number of observations ( to be included)	Regional Agreement from October 2006
Total Mercury	tonnes		Changed
Total Nickel	tonnes		Changed
Lindane (instead of Gamma-HCH)	tonnes	not reported usually	Changed
TSS (instead of Suspended Particulate Matter)	kilotonnes		Changed
Total Hydrocarbons	kilotonnes	not reported usually	Changed
Anionic active surfactants (instead of detergents)	kilotonnes		Changed
Phenols	kilotonnes	not reported usually	
PCB-28	tonnes	not reported usually	
PCB-52	tonnes	not reported usually	
PCB-101	tonnes	not reported usually	
PCB-118	tonnes	not reported usually	
PCB-153	tonnes	not reported usually	
PCB-138	tonnes	not reported usually	
PCB-180	tonnes	not reported usually	
Total PCBs	tonnes	not reported usually	
Other Hazardous Substances (please give name and CAS No)	tonnes		To be removed
BOD-7	kilotonnes	not reported	To be removed
BOD-5	kilotonnes		
COD-Mn	kilotonnes		To be removed
COD-Cr	kilotonnes		
TOC	kilotonnes		
AOX	kilotonnes		
Tritium	Bq	not reported usually	
Other Radionuclides (please name)	Bq	not reported usually	
Average Riverine Flow for the Year	m3/sec		
Long Term Annual Average Riverine Flow	m3/sec		

- Industrial loads (same determinands)
- Municipal Loads (same determinands)
- Green-house gases (same determinands)
- Accidental pollution (same determinands)
- Waste Waters, as follows:

Total amount of waste waters discharged into the Black Sea
Amount of insufficiently treated water
Amount of untreated waters

The group reports also on policy and legislation development.

## Annex IV. Nationally reported data

### ICZM AG (Integrated Coastal Zone Management Advisory Group)

The AG reports on the state of the coast, coastal management and ICZM policies/legislation development.

<b>Country:</b>		
Reported Area (km2):		
Reporting Organization:		
Owner of Data:		
		Here please insert rows if you have more than one procedure to add.
Intersectoral Coordinating Mechanisms	Existence of legal procedures for coordination of coastal management decisions	Name/ year
Intersectoral Coordinating Bodies	Existence of bodies for coordination of coastal management decisions	Name/ year
Legal Planning Mechanisms for Coastal Territorial Management	Existence of legal planning procedures for coordination of coastal management decisions	Name/ year
Integrated Permitting Procedures for Coastal Territorial Management	Existence of legal integrated permitting procedures for coordination of coastal management decisions	Name/ year
Legal Basis Guaranteeing the Public Access to the Sea	Legal document - normative act guaranteeing that all the coastal line is free for the access of the public	Name/ year
Type of indicator	Indicators	UNITS
Population and Geography	Administrative organization of coastal zone	
	a) total no. of cities	No.
	b) no of cities over 100 000 inhabitants	No.
	c) no of cities over 1000 000 inhabitants	No.
	d) total no of rural settlements	No.
	Total inland area of coastal zone (if is defined)	km2
	Total sea area of coastal zone	km2
	Number of population	Thousands pers.
	Population density in coastal regions	
	a) out of the touristic season	inhabitant/km2
	b) in the touristic season	inhabitant/km2
	Birth rates	persons per thousand
	Mortality	persons per thousand
	Morbidity	persons per thousand
	Working people	thousands
	Unemployment	thousands
	Retired people	thousands
	Average Age of population	years
	Children under 18 years old	thousands
	Population growth in Black Sea coastal region (natural increase, natural decrease)	rate per 1000 inhabitants

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<b>Country:</b>		
	Net migration rate	%
	Urbanization Rate	%
	Rural/urban residence ratio	%
	Total land funds use	ha
	a) agriculture areas	ha
	b) forest and other forest vegetation lands	ha
	c) waters and ponds	ha
	d) wetlands	
	e) beaches (area)	GDP
	General land use change	%
	Unemployment rate	%
	Average Net monthly earnings	Euro (or in your National currency, but giving conversion rate)
Energy	Total energy consumption by fuel	tones/year
	Energy production/capita	MW/cap/year
	No of wind farms	No
Water and Wastewater	Public sewage network system	No of localities
	Drinking water supply network	No of localities
	Volume of drinking water supplied to consumers	m3
	Population with access to clean drinking water	No
	Length of drinking water supply network	km
	Population connected to WWTP (total rural+urban)	%
Biodiversity	Green areas	Ha
	Number of natural (parks) reserves and their areas	No; Ha
	Number of Natura 2000 site and their areas	No ; ha
	Number of marine protected area and their areas	No ; ha
Coastal erosion	Number of vulnerable areas to erosion	No.
	Annually beach surface eroded	ha
	Average rate of beach erosion / abrasion	meters
	Retreat of cliffs	meters
Economy	Regional gross domestic product	Thou Euro
	GDP growth	% change/year
	Sectoral distribution of GDP	%
Tourism	Touristic accommodation capacities	Places/year
	Touristic accommodation units in coastal zone	no/year
	Number of tourist arrivals	
	a) National	no/year
	b) From abroad	no/year

## Annex IV. Nationally reported data

<b>Country:</b>		
	Number of tourist facilities conducting ecological audit	No
	Number of Tourist Companies Promoting GreenTourism	No
	Number of "Blue Flag" Beaches	No
	Carrying capacity of beaches	sq.m per person
	Number of tourist staying overnight	no/year
	Value of tourist expenditures	Thou Euro
Health	No of sanitary units	
Solid Waste Management	Industrial wastes	tones/year
	Hazardous industrial wastes	tones/year
	Municipal wastes	number
	Number of landfills	tones
	Total capacity of landfills	number
	Number of incineration plants	tones/year
	Total capacity of incineration plants	tones/year
Agriculture	Total area of agricultural lands	thousand ha
	Arable lands treated with mineral fertilizers	thousand ha
	Fertilizers application rate	kg per ha
	Arable lands treated with pesticides	sq.km
	Pesticides application rate	kg per ha
	Area of irrigated lands	ha
	Number of animal farms	No
	Number of cattle	thousand heads
	Number of pigs	thousand heads
	Number of sheep	thousand heads
	Number of poultry	thousand heads
Industry	Number of metallurgic enterprises	
	Total production of metallurgic enterprises	Euro (or in your National currency, but giving conversion rate)
	Number of textile enterprises	
	Total production of textile enterprises	Euro
	Number of food processing enterprises	
	Total production of food processing enterprises	Euro
	Number of refineries	
	Total production of refineries	Euro
	Please add any other industry important in your coastal zone	
Transport	Density of the public road network,	km/km2
	Number of airports	no.
	Length of rail ways	km
	No of harbours	No
	Total harbour area	ha
	Harbour Traffic capacity	mln tones/year
	Number of oil terminals	th.t

<b>Country:</b>		
	Capacity of oil terminals	th.t.per year
	Lengths of oil pipelines	km
	Capacity of oil pipelines	th.tones per year
	Length of gas pipelines	km
	Capacity of gas pipelines	mln tones/year
Climate	Precipitations	mm per year
	Sunshine	hours per year
	Sea level rise	mm

The basic problem with the ICZM reporting is that there is no definition of COASTAL ZONE. The states report in a different way: for instance Bulgaria reports for municipalities along the Black Sea coast, Georgia - almost for half of the country.

#### ***ESAS (Environmental Safety Aspects of Shipping)***

The reporting of the group consists of data on:

- Ballast waters
- Oil spills (accidental, number and volume)
- Offshore installations
- Dumping and dredging
- Ports and port reception facilities
- Ships (tankers and cargo) calling at Black Sea ports and passing the Bosphorus, cargo turnover, passengers. Compliance with regulations.
- Policy and legislation development





## ANNEX V. Black Sea Integrated Monitoring and Assessment Program: Reported concentrations in water, sediments and biota in 2001-2005

BSIMAP data on Nutrients in Water

Water	O <sub>2</sub>	O <sub>2</sub>	TSS	Secchi disk	BOD <sub>5</sub>	P-PO <sub>4</sub>	TP	N - NH <sub>4</sub>	N - NO <sub>3</sub>	TN
Bulgaria	%	mg/L O <sub>2</sub>	mg/L	m	mg/L O <sub>2</sub>	μmol/l P		μmol/l N	μmol/l N	
2005										
Average	84.8	8.4	6.5		1.9	0.623	0.91	5.09	32.34	58.21
Max	121.0	13.5	47.0		4.0	3.05	3.07	31.21	50.71	120.71
Min	46.2	4.2	0.0		0.0	0.00	0.00	0.00	3.57	23.21
No of samples	26	28	22		21	28	12	28	18	15
2004										
Average	87.39	8.13	19.23		1.97			5.36	6.56	
Max	180.00	17.40	350.00		4.60			15.85	12.90	
Min	54.90	4.46	1.00		0.00			0.00	0.00	
2003										
Average	82.00	8.03	10.80		1.67	0.04		0.179	19.43	
Max	116.00	15.40	40.00		2.90	0.21		3.57	49.29	
Min	46.50	4.51	1.00		0.90	0.00		0.00	0.00	
No of samples	40	40	40		38	40		38	24	
2002										
Average	76.86	7.19	15.23	1.75	1.87	0.06		11.01	1.59	
Max	132.00	14.20	28.00	5.5	4.88	0.86		39.93	37.86	
Min	52.00	4.47	6.00	0.8	0.97	0.00		0.00	0.07	
No of samples	38	38	38	38	38	38		24	38	
2001										
Average	97.48	9.17	18.00		1.75	0.11		7.11	39.21	
Max	175.00	16.10	57.00		5.50	1.11		36.99	92.86	
Min	38.10	4.16	2.00		0.80	0.00		0.00	0.00	
No of samples	38	38	38		36	38		38	28	

**Annex V. Black Sea Integrated Monitoring and Assessment Program: Reported concentrations in water, sediments and biota in 2001-2005**

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<b>Water</b>	<b>O2</b>	<b>BOD5</b>	<b>P (PO4)</b>	<b>P total</b>	<b>N (NH4)</b>	<b>N (NO3)</b>	<b>N (NO2)</b>	<b>N,Total</b>	<b>SiO4</b>
Georgia	μmol/l	μmol/l	μmol/l	μmol/l	μmol/l	μmol/l	μmol/l	μmol/l	μmol/l
2005									
Average	190.94	49.596	0.26		6.24	2.88		?	
Max	259.4	65.6	0.38		10.2	5.61		?	
Min	154.7	34.38	0.18		1.12	1.38		?	
No of samples	8	8	8		8	8		8	
2001									
Average	169.6	121.28	0.52	0.65	0.26	7.17	0.10		13.84
Max	204.8	147.2	0.70		0.40	8.30	0.45		15.6
Min	150.4	102.4	0.18	0.54	0.20	6.20	0.02		11.4
No of samples	20	19	14	19	19	19	19	4	22

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Water	O2	BOD5	P (PO4)	TP	N (NH4)	N (NO3)	NO3-N+ NO2-N	TN	SiO4
Romania	μmol/l O2	μmol/l O2	μmol/l P	μmol/l P	μmol/l N	μmol/l N	μmol/l N	μmol l/N	μmol /l Si
2005									
Average	301.14	133.23	0.38	1.43	7.30	6.62		47.84	8.74
Max	405.5	304.6	7.23	4.32	46.05	32.68		155.3	90.7
Min	225.5	9.38	0.04	0.53	0.35	1.68		16.1	0.6
No of samples	47	49	49	12	49	49		12	49
2004									
Average	333.23	139.06	0.566		4.853	8.323			9.973
Max	546.6	392.1	15.240		47.500	71.570			
79.200									
Min	225.1	45.1	0.010		0.550	1.080			1.700
No of samples	116	116	116		116	116			116
2003									
Average	347.33	150.35	0.69		6.51	7.95	8.57		8.61
Max	649.40	527.90	13.36		104.60	58.85	61.19		44.10
Min	257.20	54.90	0.02		0.98	0.83	1.18		0.40
No of samples	94	90	88		99	99	99		99
2002									
Average	325.5	145.3	0.57		8.7	8.48	9.52		10.01
Max	543.1	408.6	5.98		0.32	2.21	2.48		0.1
Min	198.3	32.2	0.01		101.8	51.79	53.53		114.8
No of sample	84	84	86		83	83			83
2001									
Average	385.54	175.24	0.23		8.53	1.70			4.04
Max	426.24	357.12	3.40		19.06	11.70			28.25
Min	180.16	20.16	0.00		0.90	0.38			0.05
No of samples	78	62	74		74	74			71

**Annex V. Black Sea Integrated Monitoring and Assessment Program: Reported concentrations in water, sediments and biota in 2001-2005**

Water	O2	BOD5	P (PO4)	TP	N (NH4)	N (NO3)	N (NO2)	TN	SiO4
Russian Federation	ml/L	mg/L O2	mkg/L	mkg/L	mkg/L	mkg/l	mkg/L	mkg/L	mkg/l
2005									
Average	6.42	0.832	7.104	14.705	12.395	42.577	2.687	274.81	494.38
Max	8.10	2.698	27.884	92.122	40.619	248.995	6.334	715.97	1826.142
Min	3.097	0.172	0.041	3.513	3.903	2.063	0.410	90.70	61.87
No of samples	213	115	177	133	154	147	176	131	177
May-August 2003									
Average	8.2		8.34		13.7	0.7	1.5		395.88
Max	9.3		8.46		29.4	1.5	3.6		560.00
Min	7.6		8.27		0.0	0.0	0.2		230.00
No of samples	8		20		8	6	8		20
2002									
Average	6.04		12.15		43.37	80.07	0.55		1999.20
Max	8.08		40.60		134.50	457.00	3.10		5644.00
Min	4.94		0.00		7.70	0.00	0.00		118.00
No of samples	6.00		6.00		6.00	6.00	6.00		6.00

Water	O2	Secchi	H2S	P (PO4)	P total	N (NH4)	N (NO3)	N, Total	SiO4
Turkey	mg/l O2	m	mg/L	µmol /l P	µmol /l P	µmol/l N	µmol/l N	µmol/l	µmol/l Si
2005									
Average	8.86	6.59		0.199	0.386	1.636	0.367	8.315	10.813
Max	14.67	13.7		3.85	5.78	10.793	3.777	85.081	190.927
Min	1.67	0.6		0.007	0.029	0.377	0.0095	0.988	0.004
No of Samples	836	128		835	836	836	835	836	836
2004									
Average	8.47	12.17	0.31	0.32	0.31	1.84	0.35	3.76	13.06
Max	11.63	15.88	0.50	4.69	1.74	7.62	7.26	12.07	52.71
Min	0.54	7.93	0.18	0.14	0.14	0.06	0.01	2.42	0.62
No of Samples	413	415	4	414	412	415	414	412	415

Water	Chlorophyll			
Turkey				
2004	mg/L			
Average	0.76			
Max	5.186			
Min	0.1			
No of samples	389			

Water	O2	Secchi	BOD5	P (PO4)	P total	N (NH4)	N (NO2)	N (NO3)	N total	SiO4
Ukraine	mg/L	m	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2005										
Average	8.66		2.25		0.04	0.17	0.02	0.29	0.17	0.45
Max	11.30		4.40		0.06	2.23	0.43	2.00	0.52	1.04
Min	3.12		1.80		0.01	0.00	0.00	0.01	0.04	0.01
No of samples	113		78		13	78	88	86	12	15
2004										
Average	9.05	2.48	2.28			0.11	0.01	0.22	0.38	
Max	11.30	1.70	14.00			2.05	0.22	2.20	3.45	
Min	4.80	14.00	1.00			0.00	0.00	0.00	0.00	
No of samples	88	74	88			68	86	69	57	
2003										
Average	7.29		2.20	0.028	0.06	0.12	0.01	0.20	0.56	0.45
Max	10.80		6.20	0.122	0.15	1.59	0.17	2.40	1.70	0.89
Min	3.24		1.50	0	0.01	0.00	0.00	0.00	0.11	0.15
No of samples	21		98	19	17	112	116	116	17	18
2002										
Average	9.79		2.36		0.02	0.05	0.01	0.09	0.18	0.39
Max	11.07		4.60		0.03	0.22	0.06	0.37	0.18	0.43
Min	8.53		1.36		0.01	0.01	0.00	0.01	0.18	0.35
No of samples	15		13		5	15	16	15	4	5
2001										
Average	9.00		2.40	0.016	0.04	0.05	0.01	0.01	0.37	0.29
Max	10.19		2.90	0.029	0.07	0.25	0.03	0.04	0.58	0.47
Min	7.50		1.80	0.004	0.02	0.01	0.00	0.00	0.17	0.12
No of samples	13		10	8	5	13	13	13	5	5

**Annex V. Black Sea Integrated Monitoring and Assessment Program: Reported concentrations in water, sediments and biota in 2001-2005**

**BSIMAP Data on Heavy Metals and Organic Micropollutants in Water**

<b>Water</b>	<b>Cd</b>	<b>Cu</b>	<b>Hg</b>	<b>Pb</b>
Bulgaria	µg/l	µg/l	µg/l	µg/l
2004				
Average	0.13	2.07		1.07
Min	0.00	0.00		0.00
Max	2.00	6.00		8.00
No of samples	35			

<b>Water</b>	<b>Cd</b>	<b>Cu</b>	<b>Hg</b>	<b>Pb</b>
Georgia	µg/L	µg/L	ng/L	µg/L
2001				
Average	41.00	4.66		0.24
Max	41.00	78.00		0.28
Min	41.00	0.07		0.21
No of samples	5.00	19.00		19.00

<b>Water</b>	<b>Cd</b>	<b>Mn</b>	<b>Cu</b>	<b>Pb</b>
Romania	µg/l	µg/l	µg/l	µg/l
2003				
Average	1.52	5.98	3.79	8.17
Max	2.86	14.54	10.73	32.85
Min	0.73	0.99	0.16	0.51
No of samples	18	11	18	18
2001				
Average	1.80	12.01	10.56	9.25
Max	10.97	22.29	40.80	49.95
Min	0.06	2.27	0.04	0.59
No of samples	50	30	50	39
Water	DDT	Lindane	Petroleum Hydrocarbons	PAHs
Romania	µg/l	µg/l	µg/l	ng/l
2003				
Average	32.32	223.6	194.1702	36.87
Max	32.32	359.88	1096	103.07
Min	32.32	130.27	9.5	1.85
No of samples	1	3	51	3
2001				
Average	18.64	89.38	149.35	253.85
Max	783.00	2083.00	2268.40	993.00
Min	0.00	0.00	0.00	2.32
No of samples	42	42	96	38



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Water	DDT	DDD	DDE	Lindane	Petroleum Hydrocarbons
Russian Federation	n/L	n/L	n/L	n/L	mg/L
2002					
Average	0	0	0	0	0.03
Max	0	0	0	0	0.09
Min	0	0	0	0	0
No of samples	0	0	0	0	6

Water	Cd	Cu	Hg	Pb	Petroleum Hydrocarbons
Turkey	µg/l	µg/l	µg/l	µg/l	µg/L
2004					
Average	0.51	1.61	1.74	0.14	11.24
Max	0.86	3.28	7.74	1.10	77.17
Min	0.26	0.72	0.00	0.00	0.99
No of Samples	50	50	50	50	66

Water	Cd	Cu	Hg	Pb	Petroleum Hydrocarbons
Ukraine	µg/L	µg/L	µg/L	µg/L	µg/L
2004					
Average					50
Min					50
Max					180
No					86
2003					
Average					50
Min					50
Max					60
No					96
2002					
Average					50
Min					50
Max					90
No					94
2001					
Average					50
Min					50
Max					50
No					9

**BSIMAP: Heavy Metals in Bottom Sediments**

<b>Bottom Sediments</b>	<b>Cd</b>	<b>Cu</b>	<b>Hg</b>	<b>Pb</b>
Romania	mg/kg	mg/kg	mg/kg	mg/kg
2004				
Average	5.52	57.86		50.95
Max	30.19	182.96		149.45
Min	0.65	8.61		3.49
No of samples	42	43		43

<b>Bottom Sediments</b>	<b>Cd</b>	<b>Cu</b>	<b>Hg</b>	<b>Pb</b>
Turkey	mg/kg	mg/kg	mg/kg	mg/kg
2004				
Average		69.08	68.50	27.04
Max		269.00	286.00	62.00
Min		19.00	4.00	11.00
No of Samples		50	39	49

**Trace metals in Biota**

<b>Biota, mussels</b>	<b>Pb</b>	<b>Cd</b>	<b>Hg</b>
Romania	µg / g	µg / g	µg / g
2003			
Average	0.41	0.092	
Max	0.58	0.150	
Min	0.31	0.017	
No of samples	3	3	

**APPENDIX I: Information on SQL-server on-line BSIS developed within the BSERP**

The Black Sea Information System (BSIS) was a part of the Information Strategy developed within the project. BSIS was the first key element of the implementation of the Information Strategy of the Black Sea Commission. The system provides tools for reporting and communication at the international level, regional, and national level.

The implemented approach distinguishes between two sections/parts of the information system developed. These are: an internal area/system (or "the loop of official reporting") and external interface/systems (or "the loop of supporting activities and development"). The first internal part of the system has to support and facilitate the Commission's activities in relation to the official reporting of the countries, whereas the loop of development provides needed means and tools to facilitate any kind of supporting activities, i.e. the development of background documents, assessments or drafting official documents (strategies, protocols, agreements, etc.).

The main requirements to the information within the BSIS are to:

- correspond to the needs in information, as well as to the interest of users (e.g. the Black Sea Commission, International Programmes (e.g. BSERP, Tacis, WB ICZM), public, NGOs, private sector, etc.);
- provide operational access of the interested parties (also via the Internet) to the data and information available for the Black Sea region in different fields of activities;

- correspond to the information requirements of decision support tools, in particular GIS;
- consider the regional peculiarities of the Black Sea environment;
- correspond to the requirements of the Programmes developed within BSEP/BSERP (e.g. the Black Sea Monitoring and Assessment Programme (BSMAP), Water Quality Objectives for the Black Sea region, system of environmental indicators);
- provide a basis for further development of the water quality standards, quality objectives and key indicators in the region and harmonisation of the existing in the riparian countries legislation.

The main principles of the BSIS are regarded to be:

- BSIS must be of a regional nature and be coordinated (but not necessarily operated) at the Black Sea level (e.g. Permanent Secretariat)
- All participants to the system need to be interested in the functioning and future development of the system, which would provide its sustainability in future
- Data and information quality must fit the international QA/QC procedures
- All riparian countries must share data and information on the Black Sea within the implementation of the Black Sea Convention and corresponding Strategies, Protocols and Programmes.

Database. The central database of BSIS is a SQL-server 2000 database. The database contains 219 inter-related tables containing information on all aspects of the implementation of the Black Sea Strategic Action Plan. In order to operate the database a Database Management Application has been developed with a user-friendly interface.

Database Management Application. The software has been developed on the basis of the corresponding Informational Strategy. The development process involves the main organisational units of the Black Sea Commission and presently focuses mainly on the official reporting rather than development/research activities. There are two types of DBMAs. Central DB application works with the central BSIS database, whereas every AG-specific DBMAs work only with the tables related to the corresponding AG-related information. A "super" DBMA is able to work with all sections of the database. The Central DB application forms a sound basis for the implementation of data exchange and provides all needed tools for storing/retrieval the data and support of management decisions (initially - State of Environment reports, reporting on the implementation process of the Black Sea Strategic Action Plan).

Importing data into BSIS. A number of supporting applications have been developed to enter the data into the system. These are:

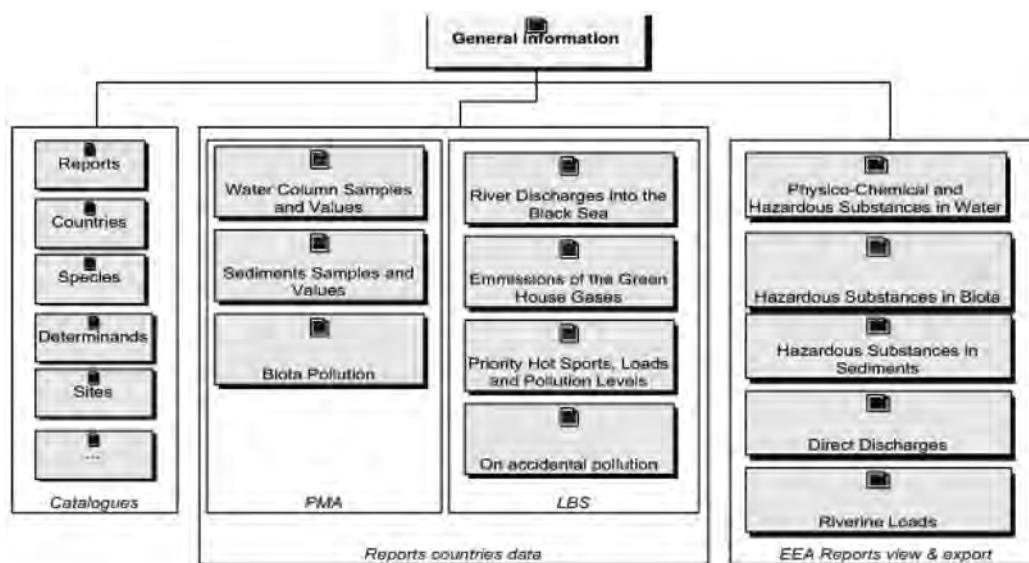
Software for each of the AG, which operates a MS Access database compatible with the Central BSIS database.

Reporting templates in MS Excel developed for each Advisory Group. The templates are also compatible with BSIS

A series of importing routines have been developed for user-friendly import of data received from the countries into the system.

Web-based Application. In order to access information stored in BSIS a web-application has been developed for browsing and exporting the BSIS data. The structure of the web-application is presented below. Only data to be reported to EEA are accessible.

BSIS is operational in the joint premises of the BSC/PS and BSERP PIU. The database of the system has been populated with the data for 2001-2005.



## APPENDIX II: Vessel Traffic Oil Pollution System (VTOPIS) Pilot Project

The pilot project is implemented in Bulgaria. The main activities of the project included:

- Assessment of the current situation, determination of the place of VTOPIS offices and identification of goals and objectives for the VTOPIS;
- Development of software for visualisation, tracking and backtracking of the ships' traffic, which could pose a high risk of pollution for the marine environment;
- Development of an integrated database with the ship's pollution information, including collection and dissemination of information among the Bucharest Convention, related international organizations, national parties and the public;
- Determination of standard formats to report ships' pollution issues for related authorities and data exchange formats between VTOPIS and the competent national authorities in case of oil spill incidents;
- Provision of hardware and software for building of the database, communications and oil spill modeling;
- Development of a proposal for multiplication of VTOPIS for the rest of the Black Sea countries.

### General objectives:

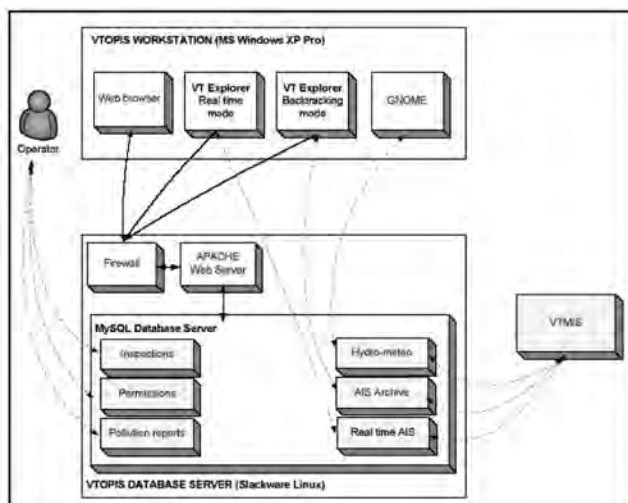
To improve the protection of the marine environment and vulnerable coastal resources;

To enhance and strengthen the capabilities of the authorities of the Black Sea states for monitoring and control of the marine environment, including emergency situations at sea;

To contribute to the effective implementation of the Black Sea Contingency Plan to the Protocol on Co-operation in Combating Pollution of the Black Sea by Oil and other Harmful Substances in Emergency Situations, Bucharest Convention.

***Specific objectives:***

- Assessment of the current situation on management of VTOPIS related information in the nominated country;
- Design a Vessel Traffic Oil Pollution Information System for collection, update, exchange and management of information, including generation of required reports. The System is designed to:
- Support respective national authorities in management of the information related to VTOPIS;
- Establish an information network consisting of central, local facilities and socio-economic organisations, towards the management of VTOPIS and fulfill the obligations to the Bucharest Convention;
- Support Government in monitoring the reduction and elimination of pollution originated from ships;
- Support the Government in monitoring and evaluating environmental policy performance related to management of pollution, in order to take appropriate actions towards environmental protection in Black Sea countries and fulfill the obligation to the Bucharest Convention;
- Provide technical guidance/ format for regular reports on ship's pollution issues to related ministries, sectors and facilities;
- Provide relevant information to support research and development on pollution prevention and control related to pollution from ships. (e.g. information for evaluation of new production processes and technologies, waste treatment technologies etc.);
- Provide information to support the identification and assessment of the potential risks to the human and environment by monitoring the sources and releases of pollution into the environment;
- Exchange and disseminate information among the relevant stakeholders and the public, contributing to the protection of human health and environment from the adverse impacts of pollution;
- Collect information and generate required reports to the Government and the Bucharest Convention.
- VTOPIS structure with different modules for different kind of activities, as:
- Data acquisition - input/output of different kind of information, including hydrological, meteorological, ship particulars, etc.;
- Data exchange - exchange of information with other institutions and/or VTOPIS offices in other Black Sea countries;
- Reports generation, including reports for inspections of the ships, reports for different kind of statistics for pollution and/or ships;
- Database management;
- Real time visualisation;
- Backtracking;
- Oil spill modeling.



After the completion of the project and analyzing of the results the following conclusions can be made:

VTOPIS provides all necessary tools for the daily activities of MEPC department including management of the inspections, permissions and pollution reports;

The information management integrated in VTOPIS database provides fast and accurate generation of all needed reports. Implementation of data export in MS Excel format provides additional possibilities for generation of unlimited number of more "exotic" reports and data analysis;

Close integration between VTMIS and VTOPIS is essential for the efficiency of the system. Real time visualization and backtracking are compulsory for effective monitoring of the vessel traffic and oil spill investigations;

Implementation of VTOPIS does not require expensive and specialized hardware equipment;

Implementation of professional and well supported oil spill modeling system requires more funds than provided in the pilot project. However the GNOME system can be used until such financing is available;

For successful implementation of VTOPIS in the rest of the Black Sea countries more research of the legal basis in these countries is needed;

AIS data sharing between Black Sea countries will improve the readiness in case of oil spills and will provide valuable data for oil spill investigations;

The pilot project VTOPIS gives the necessary data in case of operational or accidental oil spills and other emergencies. The implementation of this system in Bulgaria and possibility for multiplication in other Black Sea countries greatly improves the ecological control of shipping in the Black Sea region.

