

Implementation of the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea: 1996-2001

A Report
By the
Commission on the Protection of the Black Sea Against
Pollution



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Contents

INTRODUCTION	I—2
EXPLANATORY NOTES.....	I—3
I. THE CHALLENGE: THE STATE OF THE BLACK SEA ENVIRONMENT.....	I—4
II. THE BASIS FOR COOPERATIVE ACTION.....	II—7
A. PRINCIPLES	II—7
B. WIDER COOPERATION.....	II—10
III. POLICY ACTIONS.....	III-10
A. REDUCTION OF POLLUTION	III-10
<i>a) Land based sources of pollution</i>	<i>III-10</i>
<i>b) Airborne pollution</i>	<i>III-10</i>
<i>c) High priority point-sources</i>	<i>III-10</i>
<i>d) Regulation of point sources</i>	<i>III-10</i>
<i>e) Vessel source pollution.....</i>	<i>III-10</i>
<i>f) Pollution from dumping.....</i>	<i>III-10</i>
<i>g) Waste management.....</i>	<i>III-10</i>
<i>h) Transboundary movement of hazardous wastes</i>	<i>III-10</i>
<i>i) Assessment and monitoring of pollutants</i>	<i>III-10</i>
B. LIVING RESOURCES MANAGEMENT.....	III-10
<i>a) Commercially exploited resources.....</i>	<i>III-10</i>
IV. BIOLOGICAL DIVERSITY PROTECTION.....	IV-10
V. PROTECTION OF HABITAT AND LANDSCAPE.....	V-10
A. SUSTAINABLE HUMAN DEVELOPMENT.....	V-10
<i>a) Environmental Impact Assessment</i>	<i>V-10</i>
<i>b) Integrated coastal zone management</i>	<i>V-10</i>
<i>c) Development of sustainable aquaculture and tourism</i>	<i>V-10</i>
<i>d) Involving the public in environmental decision making</i>	<i>V-10</i>
VI. NATIONAL BLACK SEA STRATEGIC ACTION PLANS.....	VI-10
VII. FINANCING THE STRATEGIC ACTION PLAN	VII-10
A. FUNDING FOR THE ACTIONS AGREED UPON IN THIS STRATEGIC ACTION PLAN	VII-10
B. SPECIFIC FUNDING ARRANGEMENTS.....	VII-10
<i>a) The Feasibility study of the Black Sea Environmental Fund.....</i>	<i>VII-10</i>
VIII. ARRANGEMENTS FOR FUTURE COOPERATION	VIII-10
IX. RESOLUTION OF THE MEETING OF THE MINISTERS RESPONSIBLE FOR THE ENVIRONMENT PROTECTION OF THE CONTRACTING PARTIES TO THE CONVENTION ON THE PROTECTION OF THE BLACK SEA AGAINST POLLUTION ON THE AMENDMENT OF THE STRATEGIC ACTION PLAN ON THE REHABILITATION AND PROTECTION OF THE BLACK SEA	IX-10
X. ANNEXES.....	X-10

Introduction

The regional cooperation in the Black Sea fostered by the Convention on the Protection of the Black Sea Against Pollution (1992, Bucharest), Ministerial Declaration on Protection of the Black Sea (1993, Odesa) and the Strategic Action Plan on the Rehabilitation and Protection of the Black Sea (1996, Istanbul) becomes stronger and more target oriented every year.

The analysis of the BSSAP implementation undertaken by the Black Sea Commission for the years 1996-2000 reconfirmed the validities of principles on which the Black Sea Strategic Action Plan was created and correctness of policy measures that have to be implemented for protection and rehabilitation of the Black Sea against pollution. The Report on “State of the Environment of the Black Sea: Pressures and Trends” clearly shows the first signs of the ecosystem recovery.

The five year experience (1996- 2000) of the Commission on the Protection of the Black Sea Against Pollution in implementing the Black Sea Strategic Action Plan showed that the Black Sea Coastal States slowly but steadily move towards the goals of the Bucharest Convention and Black Sea Strategic Action Plan although they were too ambitious in setting the BSSAP timeframe. Upon the recommendations of the Black Sea Commission the changes in the BSSAP timeframe were approved by the Ministers of the Environment of the Contracting Parties to the Bucharest Convention on June 14, 2002 in Sofia, Bulgaria.

The policy measures of the BSSAP extend far beyond of merely protection against pollution and are aimed at sustainable human development of the Black Sea coastal states. In a line with BSSAP principles the basin wide approach that was fostered by the European Commission through the Ministerial Declaration (Brussels, 2001) and its DABLAS Task Force is being pursued by the Black Sea Coastal States.

The Black Sea Commission will continue to work towards the full implementation of the Black Sea Strategic Action Plan. It is an intention of the Black Sea Commission to revise the Bucharest Convention and the Black Sea Strategic Action Plan by the next Ministerial Meeting in 2007 in order to expand a scope of the Bucharest Convention and fully incorporate the sustainable human development in regional co-operation.

Explanatory Notes.

The Strategic Action Plan for the Rehabilitation and Protection of the Black Sea (BSSAP) has been developed with the support of the Black Sea Environmental Program in order to implement policy measures of the Odessa Ministerial Declaration, 1993 and signed by the environmental Ministers of the Black Sea coastal states on October 31, 1996. The ambitious goals, set up in this document, extend far beyond the protection of the Black Sea against pollution. It embraces sustainable development of the coastal population as a basic principle, and bears in mind the socio-economic implications of the environmental protection and ecosystem rehabilitation.

The five year (1996-2001) evaluation of the implemented policy measures and outcomes provides clear and concrete answers to the following questions:

- what has been done on national and regional levels in order to implement of the BSSAP?
- what major constraints or reasons for a delay in the process of the implementation of BSSAP have the Black Sea coastal states experienced ?
- what actions are required on the regional level in order to facilitate the implementation of the BSSAP in the Black Sea costal states?

The analysis of the implementation of the Black Sea Strategic Action Plan, 1996-2001, was based on the national responses to the Questionnaire drafted by the Permanent Secretariat of the Black Sea Commission and approved by the Advisory Groups and the Black Sea Commission itself.

Brief statements on achievements, problems and actions required are given for each article of the Black Sea Strategic Action Plan. The layout of the Report follows the structure of the Black Sea Strategic Action Plan. Technical information on implemented measures and future actions, compiled from the national responses to the Questionnaire, is presented in Annexes to this Report.

Based on the conclusions, necessary amendments to the timetable of the BSSAP were drafted, approved by Black Sea Commission, and signed by the Ministers of the Environment of the Black Sea coastal states on June 14, 2002.

I. The Challenge: The State of the Black Sea Environment

The Black Sea Strategic Action Plan requested that the Contracting Parties to the Bucharest Convention undertook all necessary political and managerial measures to rehabilitate and protect the Black Sea environment from ongoing degradation of its ecosystems and from unsustainable use of its natural resources. National and international efforts targeted at reducing or eliminating the major environmental threats to the Black Sea were highlighted by the Transboundary Diagnostic Analysis in 1996, and resulted in some progress but did not fully mitigate consequences of past and present pressures on the Black Sea environment.

- 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.*

Identified in the Black Sea Transboundary Diagnostic Analysis as one of the major threats to the Black Sea environment, eutrophication still remains a priority problem for the Black Sea. A reported slightly decreasing trend has not reached a sustainable level. Consequently a basin – wide strategy for the reduction of nutrient inputs into the Black Sea brought together efforts of the coastal and inland states of the Black Sea basin. This commitment to the reduction of nutrients and priority pollutants is expressed in the Brussels Ministerial Declaration, November 2002. The Memorandum of Understanding between the Black Sea Commission and ICPDR initiated the cooperation between the two Commissions and focuses on pollution reduction measures in the Danube and Black Sea basins.

- 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.*

Bacteriological pollution which results from inputs of insufficiently treated waste waters became less frequent and more local due to significant improvement of the municipal sector in Romania and Bulgaria. Some progress was achieved in Ukraine, the Russian Federation, and Turkey. Less visible changes occurred in Georgia. Constituting a threat to the human health and posing a barrier for development of sustainable tourism and aquaculture, bacteriological pollution continues to affect the socio-economic development of the coastal population which is further hampered by the economic conditions of the transitional economies in the coastal states.

- 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.*

An expected double increase of oil traffic in the Black Sea raises an urgent need for implementing necessary precautionary measures such as contingency planning, strengthening the capacities of response authorities, improving salvage and rescue operations, etc. The draft Black Sea Contingency Plan, currently being negotiated between Black Sea coastal states, is expected to be approved by the Black Sea Commission in 2003.

- 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 devastating impact of *Mnemiopsis leydei* on fisheries in the Black and Azov Seas clearly evidenced the potential threat from exotic species and showed the vulnerability of the unique ecosystem of the Black Sea to biological pollution. The fisheries sector nearly collapsed due to the destructive impact of this predator on fish stocks and on the Black Sea ecosystem. A recent invasion of the *Beroe ovata*, a natural enemy of *Mnemiopsis leydei*, offers the first positive sign for the improvement of the situation.

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.*

Taking into account the availability of framework national legislations, the international obligations of the Black Sea Coastal States to numerous conventions, and the BSSAP as well as the level of public awareness, the serious risk of loosing valuable habitats and landscape, and ultimately the biological and landscape diversity and productivity of ecosystems is lessened to a certain extent. The more serious problem stems from the inability of Black Sea coastal states to rehabilitate valuable habitats, landscapes, and biodiversity that entails significant investments for combating erosion and coast protection. Inadequate resources, both managerial and financial, and the economic and social problems are all interrelated. Most of the Black Sea coastal states have inadequately staffed and equipped local authorities which are unable to effectively enforce existing national environmental legislation.

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 localized 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.*

Signs of improvement in the state of the environment of the Black Sea are becoming more and more visible. A similar trend is reported for the economies of the coastal states. Economic growth that was reflected in the national statistics of the Black Sea coastal states in 2000, may result in an increased pressure on the Black Sea environment. Therefore, the task of securing a healthy Black Sea environment becomes more urgent.

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; to attain a biologically diverse Black Sea ecosystem with viable natural populations of higher organisms, including marine mammals and sturgeons; and to support livelihoods based on sustainable activities such as fishing, aquaculture and tourism in all Black Sea countries.*

Enabling the population of the Black Sea region to enjoy a healthy living environment in both urban and rural areas; attaining a biologically diverse Black Sea ecosystem with viable natural populations of higher organisms, including marine mammals and sturgeons; and the ability to support livelihoods based on sustainable activities such as fishing, aquaculture and tourism in all Black Sea States, are strategic goals of the Convention on the Protection of the Black Sea Against Pollution. These ambitious goals appeared to be more difficult to implement than was expected because most of the Black Sea coastal states were and are struggling through economic transition and social changes. At the same time, the attraction of international assistance, in particular its investment component, is a slow and time consuming process that requires thorough preparatory work as well as changes of the national legislation for the creation of favorable investment climates.

All findings related to the state of the environment of the Black Sea constitute a series of publications produced within the framework of the Black Sea Environmental Programme (Tab. I.1).

The Black Sea Strategic Action Plans requires constant diligent and daily work in order to assure the recovery of the Black Sea to conditions observed in 1960s.

II. The Basis for Cooperative Action

A. Principles

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:

Article 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.

The necessary legislative framework has been or is being developed in the Black Sea coastal states. Three Contracting Parties – Bulgaria, Romania and Turkey are transposing the EU directives and approaches in their accession to European Union; Georgia, the Russian Federation and Ukraine are in the process of harmonization of their environmental policies with the EU legislative framework.

Article 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.

The application of the precaution principle, though widely recognized in the Black Sea region, is nevertheless hampered by the economic conditions in the Black Sea coastal states. That is, their transitional economies equally affect enforcement mechanisms, sustainable development and so on.

Article 10

Anticipatory actions, such as contingency planning, environmental impact assessment and strategic environmental assessment (involving the assessment of the environmental consequences of governmental policies, programs and plans), shall be taken.

Environment Impact Assessment, contingency planning, efficiency of strategic environmental assessment (including the assessment of the environmental consequences of governmental policies, programs and plans) gradually become the commonly accepted practices in the Black Sea coastal states. Environmental impact assessment is enforced by national legislation in all Black Sea states. The draft "Black Sea Contingency Plan to the Protocol on Cooperation in Combating Pollution of the Black Sea Marine Environment by Oil and Other harmful Substances In Emergency Situations" is being circulated to all parties for national consultations in 2002.

Article 11

The use of clean technologies shall be stimulated. This requires the replacement or phasing-out of high waste and/or waste generating technologies that remain in use.

The importance of the use of clean technologies or the phasing out of high waste and waste generating technologies must not be underestimated. A dynamic and market driven economy, one of the targets of the majority of the Black Sea coastal states, requires full implementation of economic incentives and other economic instruments of sustainable development.

Article 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.

Economic instruments became an important part of national environmental policies and management. In particular, 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. With the exception of Turkey, application of the economic incentives is not implemented in practice although provisioned in legislation of the Black Sea coastal states.

Article 13

Environmental and health considerations shall be included into all relevant policies and sectoral plans, such as those concerning tourism, urban planning, agriculture, industrial development, fisheries and aquaculture.

Environmental and health considerations are reflected in all relevant policies and sectoral plans, such as: tourism development, environmental impact assessment, and other appropriate legislation. The practical implementation and enforcement of the existing legislative and regulatory acts is hampered by low income of the local population, inadequately equipped and staffed controlling agencies and other economic factors.

Article 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.

Bearing in mind that ocean boundary matters have not been fully resolved for the Black Sea, issues for the rehabilitation and protection of the Black Sea were facilitated by bilateral agreements and by participation in the regional GEF and TACIS, NATO and IAEA projects, etc.

Article 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.

Cooperation among all Black Sea coastal states was successfully promoted through: the Convention on the Protection of the Black Sea Against Pollution; bilateral cooperation between Black Sea coastal states; multilateral cooperation in the framework of the Black Sea Economic Cooperation; intergovernmental cooperation on salvage and rescue cooperation, port state control; and other relevant agreements and arrangements.

The Brussels Ministerial Declaration, 2001, and Memorandum of Understanding on Cooperation between the Black Sea Commission and International Commission on the Protection of Danube River, 2001 fostered Black Sea basin wide cooperation. The Danube – Black Sea Task Force and the Joint Black Sea – Danube Technical Working Group were established in 2002 in order to implement the above policy documents.

Article 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.

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, the public, NGOs, educators, and others. Cross sectoral cooperation is not always adequate on the national and regional levels, consequently development of the regional and national mechanisms for BSSAP implementation purposes is required.

Article 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.

The delayed establishment of a Permanent Secretariat of the Black Sea Commission (October, 2000) impeded the dissemination of information on the work undertaken in the regional context. The information flow, in particular on national efforts to protect and rehabilitate the Black Sea ecosystem, was inadequate and created an impression of a lack of any progress in the implementation of the Black Sea Strategic Action Plan. Project-based Black Sea Commission websites were not adequately sustained due to very nebulous situation regarding the funding of regional activities. Other problems arose due to the lack of important regional information in native languages of the Black Sea coastal states

Consequently, regional information was not adequately delivered for the public considerations, information on regional activities to the public sector dissipated, and a clear picture was difficult to assess.

At the same time, public involvement in the environmental decision-making on the national level is clearly expressed in national legislation of all Black Sea coastal states and is becoming a common practice in the Black Sea coastal states.

b) The Istanbul Commission.

The Commission on the Protection of the Black Sea Against Pollution (hereafter called Black Sea Commission or BSC) was established in accordance with the Bucharest Convention in order to strengthen regional cooperation amongst the Black Sea coastal states. One of the priority tasks for the BSC is the coordination of national and regional efforts for implementation of the BSSAP.

Article 18

In order to implement the actions and policies agreed on it is imperative that the regional mechanisms for co-operation among Black Sea states be strengthened.

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. The subsidiary bodies of the BSC consists of seven Advisory Groups, organized thematically, a national focal point for each advisory groups, and the Activity Centers placed in and supported by the each Black Sea coastal state individually. (Fig. 1, Annex).

Article 19

The Istanbul Commission and its subsidiary bodies, including its Secretariat, should be fully functioning, in accordance with the Bucharest Convention, by January 1997. In order to achieve this, Black Sea states agree to make available the necessary financial and other resources.

A delay in establishing the Permanent Secretariat of the Black Sea Commission significantly slowed down coordination of concrete practical steps in the Black Sea coastal states proposed for the regional level. The practical work of the BSC subsidiary bodies was curtailed though some specific activities were conducted only due to the assistance of GEF, TACIS and IMO. National support to the subsidiary bodies was given in the form of participation of national experts in the development of some basic documents, including the Transboundary Diagnostic Analysis, the Black Sea Pollution Assessment Report, the Black Sea Red Data Book, etc. Some of these have not been considered and approved by the Black Sea Commission and therefore could not be agreed regionally.

Experience showed that some important aspects of the Black Sea Commission's work were omitted and some important documents were not developed as appropriate legal documents. Therefore the BSC subsidiary bodies shall be strengthened through the establishment of additional advisory or ad hoc groups that could develop and prepare for adoption by the Black Sea Commission the legally binding and non-binding documents (declarations, action plans, contingency plans, etc), facilitate harmonization with appropriate EU directives, develop and harmonize the regional criteria for environmental impact assessment, and pursue other activities deemed necessary for the successful implementation of the BSSAP. The Black Sea Commission is expected to develop a mechanism for the on-going assessment of the implementation of the BSSAP by streamlining the reporting and data flow requirements in conjunction with the relevant EU process and in close cooperation with European Environmental Agency.

Article 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.

The Project Implementation Unit, functioning as an interim secretariat between 1996-2000, coordinated the UNDP/GEF bridging projects and TACIS Black Sea Funds- 1995/1996 and 1996/1997. After the establishment of the BSC Permanent Secretariat and with EU assistance rendered to the Black Sea Commission (2002), the BSC resumed its coordinating role from PIU. The activity of the BSC are strongly supported by the GEF/UNDP Black Sea Ecosystems Recovery Project (2002-2003).

Article 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.

Due to limited financial resources of the Black Sea Commission, Advisory Groups must prioritize their work. Top priority activities should be implemented first by all available means within established timeframes. The results should be reported to the Commission in an effective and timely manner.

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

The BSC established six Advisory Groups and assigned them the tasks of preparing recommendations to the BSC based on the best available regional and international expertise. The Advisory Groups are comprised of national focal points, representatives of national authorities responsible for the respective sectors, and additional expertise as it deems necessary.

The main responsibilities and functions of the Advisory Groups are defined in the Annexes of BSSAP. These subsidiary bodies, coordinated by the Activity Centers, are supported by the national governments as “in kind” contributions to the Bucharest Convention and by international donor organizations if necessary and appropriate. The Terms of References for Advisory Groups are being revised by the Black Sea Commission and will be finalized in the year 2002.

The national governments’ support to the Activity centers and to the national focal points is not adequate to the tasks that are assigned to them. Therefore, international assistance has been and is being sought to strengthen the institutional capacity of Black Sea Commission and its subsidiary bodies.

Article 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.

The BSC will create clear and transparent mechanisms for informing the national authorities, international partners of BSC, stakeholders and the public on the work and products of the Advisory Groups.

The Advisory Group on Information and Data Exchange, coordinated by the Permanent Secretariat, is being established. The Activity Centers, set up with GEF funds for implementation of the BSEP 1993-1995 and for which the further in kind support on national levels was assumed, coordinate the work of the Advisory Groups in accordance of the work plan of BSC.

In addition, an ad hoc Advisory Group will be established for the purpose of the harmonization of national legislation with the EU Water Framework Directive.

Any other ad hoc groups may be established taking into consideration the importance and urgency of technical tasks assigned by the Black Sea Commission and needs for the additional specific expertise.

Article 24.

It is recommended that the Istanbul Commission assume the responsibilities from the 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.

Upon establishing of the BSC Permanent Secretariat, the BSC assumed responsibility for the operation and maintenance of an electronic communication system, established for purposes of facilitating communication between the components of the Black Sea institutional network, from the GEF Project Implementation Unit in October 2000. Due to limited staff and insufficient funding of the BSC Permanent Secretariat, assistance requested from the European Commission was rendered in a form of a grant in December 2001. The Black Sea Information System (BSIS) is being developed and is expected to be fully functioning by the December 2002. Additional assistance in this activity is expected from the GEF/UNDP Black Sea Ecosystem Recovery Project.

The work of the Permanent Secretariat is to some extent impeded by the slow ratification process of the Headquarters Agreement Between the Government of Turkey and the Commission on the Protection of the Black Sea Against Pollution and by delays with national contributions to the BSC budget. The staff of the Permanent Secretariat currently consists of an Executive Director and a Pollution Monitoring and Assessment Officer. Personnel with the required technical expertise should be fully expanded to meet the needs of the BSC.

Article 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 programs. In addition, it is recommended that the Istanbul Commission organize bi-annual research conferences on topics related to the goals of this Strategic Action Plan. The first of such conferences will be held in June 1998.

Research conferences are important for scientists to exchange views on acute and fundamental problems of the Black Sea region, to share experiences and to agree upon common approaches for finding solutions to environmental problems of the Black Sea. Conference goals should include the improvement of knowledge on the state of the environment of the Black Sea and on 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 first bibliography of the scientific publications in the Black Sea region was published in 1998.

B. Wider Cooperation

Article 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;*

The Permanent Secretariat 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 organization including BSEC, GEF, UNDP, UNEP, ICPDR, Port State Control, EU, Black Sea NGOs Network, etc.

Another tool for strengthening regional cooperation was established through a number of Memorandums 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. The MOU between BSC and EEA is being negotiated and is also expected to be signed in by the end of 2002.

Since the Black Sea states are Contracting Parties to a number of global, European and regional conventions and agreements pertinent to the issues covered by the Bucharest Convention, the Permanent Secretariat will establish necessary cooperation with the their executive bodies and networks.

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 is high on the agenda of the Black Sea Commission. Any NGO with a proven ability to work on regional problems may apply for observer status according to the existing criteria and procedures. Regional projects as a rule incorporate NGO components and a small grants' program in order to support the NGO activities on regional and local level. A new tranche of small grants will be announced in the framework of the GEF Black Sea Ecosystem Recovery Project.

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.

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, PHARE, 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. (Tab.II)

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

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.

Article 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.

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 (Table II.2 and II.3)

III. Policy Actions

Article 28.

Taking into consideration the need to fully implement the Bucharest Convention and the Odessa Declaration, the findings of the assessment of implementation of the Odessa Declaration and the Transboundary Diagnostic Analysis (TDA), the following policy actions shall be implemented.

A. Reduction of Pollution

a) Land based sources of pollution

Rivers

Article 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.

The threats and consequences of eutrophication as a key problem of the Black Sea are widely recognized in the Black Sea coastal states and national environmental strategies include measures for abating nutrient inputs. Inputs of nutrient with the river flow constitute the most significant sources for the Black Sea.

The long-term objective for rehabilitation of the environment of the Black Sea was identified by the joint Danube - Black Sea expert group in 1998. This formed the basis for the GEF basin wide project for the Danube and Black Sea. The long term strategic goal is to achieve an ecological status as close as possible to that of the Black Sea in 1960s, when the natural conditions were not significantly disturbed. The Black Sea countries expressed their intention not to increase pollution discharges as economic growth progressed as their intermediate goal.

Although only three Black Sea coastal states (Bulgaria, Romania, and Ukraine) belong to the Danube river basin, the impact on the marine environment through excessive inputs of pollutants in the Danube waters and the adverse effects on the most productive part of the Black Sea shelf indirectly influence the marine environment of all non-Danube states. This is particularly true in terms of the impact on anadromous fish species and other living marine resources. Bulgaria, Romania and Ukraine are also Contracting Parties to the Convention on Danube Protection.

National efforts to reduce eutrophication were supported by the international cooperation through a number of GEF and EU Projects initiated in the Black Sea Convention area, World Bank and EBRD investment programs (Tab.IIIA.1). The following national and important regional projects and programs are active:

- GEF Development of the Strategic Action Plan for the Dnipro River Basin and the Implementation Mechanism (Belarus, Russian Federation, Ukraine),
- GEF Danube Pollution Reduction Program
- National Program on the Ecological Rehabilitation of the Dnipro River Basin and Improvement of Drinking Water Quality, Ukraine

In the framework of the UNDP/GEF block B, the Black Sea coastal states have developed or drafted the national plans/measures to reduce nutrients inputs to the Black Sea in 2000, as follows:

Bulgaria	not responded
Georgia	not responded
Romania	in a framework of the EU accession process
Russian Federation	in a framework of existing Federal programs
Turkey	not responded
Ukraine	in a framework of the National Program on the Protection and Rehabilitation of the Azov and Black Seas, 2001- 2011 and other river basin and sectoral programs.

It is widely recognized that only concerted actions on national levels through effective cooperation with all concerned sectors (municipal, agricultural, industrial, etc.) and all countries in the Black Sea basin will lead to the sustainable long term results.

The regional nutrient reduction plan, developed with support of BSEP, has not been discussed nationally and has not been approved by the Black Sea Commission. A regular process of reporting on progress in the implementation of nutrient reduction has not been initiated.

Coordination of remedial and protection measures for the Black Sea and for the Danube river is implemented by:

Bulgaria	Ministry of Environment and Water
Romania	Ministry of Water and Environmental Protection
Russian Federation	Ministry of Natural Resources
Turkey	Ministry of Environment
Ukraine	Ministry of Environment and Natural Resources

In order to improve coordination between the International Commission on the Protection of the Danube River and the Black Sea Commission, a Memorandum of Understanding was signed in November 2001 in Brussels.

Cooperation with the Danube countries is further fostered under the umbrella of the DABLAS Task Force, created to implement the Declaration of Ministers on the Cooperation in the Danube Black Sea Basin, Brussels, 2002.

In the Black Sea coastal states, compliance with maximum allowable discharges and standards are considered as the quality objectives. They are calculated for each body of water. Bulgaria, Romania and Turkey have to comply with EU Nitrate Directive and WFD.

Taking into account the gap of knowledge in the assessment of the state of hydrogen sulfide saturated stratum in the Black Sea, it is essential to support a study of this issue and its relations with the eutrophication process. This study should also focus on the phenomena of life forms in the saturated hydrogen sulfide strata of the water column.

Implementation of international projects related to Black Sea issues should be better coordinated on the regional level. The Global International Water Assessment, a UNDP/GEF initiated activity directed toward the identification of regional environmental priorities, must be communicated to and agreed with regional bodies. Coordination with UNEP should also be improved on both sides. The UN Global Plan of Action will be further promoted through close cooperation with the Black Sea Commission. The institutional networks, including the national focal points, regional centers, etc., should be closely linked and informed about mutually important activities.

There are evident gaps in knowledge and information, in particular in relation to:

- Assessment of the current state of “hot spots” and investments needed for their elimination, waste water management;
- Assessment of diffuse pollution sources, riverine inputs and atmospheric loads to the Black Sea;
- Assessment of solid wastes problems and management;
- Assessment of coastal erosion and abrasion taking into account urban development of the Azov and Black Sea coasts.

Actions required:

- ⇒ **To finalize, approve and start implementing the regional nutrient pollution reduction plan by the year 2004.**
- ⇒ **To improve coordination with and between international projects, programs, actions, such as UNEP, UNDP, GEF, EU, etc.**
- ⇒ **To accelerate development of regional quality objectives and standards; to seek the possibility for funding necessary regional scientific studies on input of pollutants and nutrients; as expected, the AG PMA and AG LBS will finalized the development of the regional quality objectives before the end of 2003 .**
- ⇒ **To upgrade the Transboundary Diagnostic Analysis taking into account the basin wide approach and recent development of European strategies, including the development of European marine strategy.**
- ⇒ **To develop methodologies, techniques and a set of environmental indicators for assessing river-borne pollution, jointly agreed by the countries in the Black Sea basin by the year 2006.**
- ⇒ **To establish close coordination with existing river basin programs in order to undertake the concerted actions for the improvement of environmental conditions in the Black Sea basin as a whole in the spirit of the Brussels Ministerial Declaration, November 26, 2001. This cooperation could be supported through the GEF projects, TACIS projects, NATO, IAEA , etc.**
- ⇒ **To develop and implement jointly agreed system of indicators and quality standards in the consultation with Black Sea coastal states and Danube countries.**
- ⇒ **To establish an information exchange system which includes the inventories of all existing ICPDR studies pertain to the Black sea issues.**
- ⇒ **To agree upon a set of complementary actions in order to achieve measurable results in improving the state of the environment of the Black Sea.**
- ⇒ **To establish and maintain a regional information system covering issues of relevance to both Commissions.**

b) Airborne pollution

Article 31.

More attention should be focused on the issue of airborne pollutants, particularly those that involve transboundary movements, as well as appropriate measures for controlling them at source. In initial assessment of the magnitude of this problem should be undertaken by 1999.

According to national reporting, air emissions do not show any meaningful growth in the Black Sea coastal states (Table IIIA.2). At the national level, the environmental authorities compile emission data statistics.

However, no regional studies were conducted on the transboundary transport of pollution, on the assessment of loads to the Black Sea via the atmosphere, or on adverse impacts on biota and human health. Slow or no economic growth currently does not seem to present a threat to the marine environment, when taking into account the general economic situation and enforced national legislation. Nevertheless, precautionary measures should be established to avoid the future troubles.

Leaded petrol is still used in the Black Sea coastal states although little by little it is being phased out. Russia expressed its intention to reach EU objectives in lead emission by the year 2010. Turkey applies economic incentives as well as governmental subsidies to promote the use of unleaded petrol. As a complimentary measure, Turkey promotes the use of the liquid gas engines.

The legislative basis for the control and regulation of air emissions includes basic laws, regulations, rules and procedures. Ambient air quality standards and emission permits are common practices in the Black Sea countries.

The institutional arrangements for monitoring air pollution differ from country to country: Hydrometeorological Services (Georgia, Russia, and Ukraine), environmental authorities (Georgia, Romania, Ukraine and Turkey), Health authorities (Turkey, Ukraine). Regular assessments of the impact of air pollution are only reported by the Russian Federation. Exchange of information on transboundary air pollution is missing in the region, (Table IIIA.3).

Actions required:

- ⇒ **To establish close cooperation with relevant parties of the Conventions to which the Black Sea countries are the contracting parties to by the year 2003.**
- ⇒ **To incorporate the monitoring of airborne pollution in the Black Sea Integrated Monitoring and Assessment Program by the year 2005.**
- ⇒ **To promote phasing out the use of leaded petrol.**
- ⇒ **To cooperate with the Convention on the Climate Change and its Kyoto Protocol, Convention on Long-Range Transboundary Air Pollution and other relevant conventions and protocols to which the Black Sea countries are the Contracting Parties in order to promote their implementation in the Black Sea states.**
- ⇒ **The Advisory Group on Land Based Pollution Sources jointly with Advisory Group on Pollution Monitoring and Assessment shall prepare a proposal for regional assessment of atmospheric pollution loads to the appropriate IFIs and in close contact with the above conventions and WMO by 2004.**
- ⇒ **To promote close cooperation between environmental and health authorities in the Black Sea states and between institutions involved in monitoring airborne pollution in order to receive adequate information to implement regular assessment of the airborne pollution and its impacts on the Black Sea ecosystem and human health.**
- ⇒ **To harmonize methodologies and analytical techniques for the assessment of airborne pollutant loads and to establish a quality assurance and quality control system.**
- ⇒ **To promote cross sectoral cooperation on the national and regional level in order to ensure implementation of the provisions of the Bucharest Convention.**
- ⇒ **To incorporate initial assessment of the air emissions and airborne pollution loads in the Black Sea Ecosystem Recovery Project in 2004. The commonly agreed methodologies for assessment of airborne pollution and impact on human health shall be developed and established in the framework of these studies.**

- ⇒ **To implement a regular reporting system in a commonly agreed format developed by the Advisory Group on Pollution Control from Land-Based Sources starting with the air emissions gathered since 2001. This should be extended into a regional database on airborne pollution.**
- ⇒ **To the extent possible, pursue harmonization with EU directives**

c) High priority point-sources

Article 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 realizing 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.

The Black Sea coastal states are facing serious economic problems that started in the late 80s – early 90s and which still persist. An economic growth was only recently reported for these states. The decline in economic activities resulted in overall pollution reduction from industrial and agricultural pollution sources. It is noted that pollution reduction has many common features, namely:

- Reduction of industrial discharges due to reduced industrial output
- Reduction of the number of live – stock farms, arable lands area, etc, due to decline in agricultural sector
- Reduced application of mineral and organic fertilizers and pesticides
- Decline in tourist sector
- Worn out and outdated waste treatment facilities and canalization system

As a result the amount of typical industrial pollutants in wastewaters decreased, but the typical municipal pollution like nitrogen, BOD, etc. remains at the same level. (see *The State of the Environment of the Black Sea: Pressures and Trends, 1996-2001*)

The economic conditions of the Black Sea coastal states contributed to the development of strategies to address pollution reduction that are directed at construction/reconstruction of WWTP, introduction of modern treatment/processing technologies, and the introduction of resource saving technologies and cost recovery. Implementation of these strategies is impeded due to the economic conditions in the region and due to an insufficiently developed market economy. At the same time, the Black Sea countries have had significant achievements in developing environment legislation although its enforcement appears to be inadequate.

The Black Sea Transboundary Diagnostic Analysis and the Black Sea Environmental Priority Studies, conducted during a course of the BSEP, identified the list of “hot spots” requiring urgent investment for each Black Sea coastal state. Although drafted for all Black coastal states, the national environmental priority studies were published only for Turkey and Ukraine and contained some substantial inaccuracies.

Actions required:

- ⇒ **To revise and publish the environmental priority studies by the year 2005 and establish a regular process for its update. The recommended financial sources are GEF, UNDP and TACIS.**
- ⇒ **To attract sufficient investments in the municipal sector in order to expand, renovate, and/or modernize the wastewater treatment facilities and sewer systems.**

- ⇒ **To modernize and improve water supply and waste water treatment systems.**
- ⇒ **To improve the operation, maintenance and training of personnel in the municipal sector.**
- ⇒ **To introduce full payment for service of municipal sector to cover maintenance costs.**
- ⇒ **To fully develop economic incentives and public-private partnership for environmentally sound investments.**

d) Regulation of point sources

Article 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 January 2000. 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 analyze 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.

The problem of insufficiently treated waters arises from overloaded, obsolete and worn out equipment; outdated technologies in the municipal sector; poor conditions of sewage system collectors and pipes; and insufficient investments. The situation is somewhat better in Turkey where there is a higher percentage connected small municipalities and villages. Consequently the situation is better due to enforcement of environmental legislation and decreased water consumption rather than due to modernization and renovation of wastewater treatment facilities. Insufficiently treated water is a decreasing tendency for most of the Black Sea coastal states (*see State of the Environment of the Black Sea 1996-2001*).

Actions required:

- ⇒ **To attract sufficient investments in the municipal sector.**
- ⇒ **To improve operation and maintenance of waste water treatment facilities.**
- ⇒ **To introduce full payment for municipal services to cover maintenance costs.**
- ⇒ **To introduce economic incentives and public/ privates partnerships.**
- ⇒ **To attract assistance for developing financially viable projects.**
- ⇒ **To actively involve World Bank, EBRD, UNDP, EC and other financial institutions in the preparation and implementation of bankable projects.**
- ⇒ **To improve and develop a realistic urgent investment portfolio.**
- ⇒ **To transfer know-how and technologies.**
- ⇒ **To improve professional training and scientific exchange.**

Article 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.

The Protocol on the Protection of the Black Sea Environment Against Pollution from Land-Based Sources to the Convention on the Protection of the Black Sea Against Pollution of 1992 that provisionally indicated the main directions of pollution reduction and identified the responsibilities of the Contracting Parties in reduction for pollution from land-based sources has not been fully implemented. The missing components are as follows:

- Common emission standards and a timetable for pollution reduction
- Common guidelines, standards and criteria dealing with special characteristics of marine outfalls
- Pollution prevention criteria and recommended measures for pollution reduction, control and elimination
- Information exchange and reporting system on pollution reduction and undertaken measures

The above ideas pertain to all pollutants, including the persistent organic pollutants that covered by the Convention on Persistent Organic Pollutants since 2001. Although eliminated from the list of chemicals that are allowed for application in all Black Sea coastal States, the persistent use of chlorinated pollutants still pose a threat to the marine environment. They have accumulated over time in coastal areas. The Black Sea coastal states do not have sufficient capacity to process the expired persistent chemicals contributed mostly from the agricultural sector. Lack of adequate storage facilities adds to the imminent threat to the marine ecosystem and human health. Of the Black Sea countries only Bulgaria ratified the POPs Convention. Nevertheless, the problem of POPs exists and shall be dealt with by all Black Sea coastal states.

All Black Sea countries do not include the POPs in the list of pesticides allowed for application; rules and procedures for application of permitted pesticides are enforced. However, education levels of farmers and lack of capacity to address these issues on the local level still concerns the population and could cause a disturbance to the ecosystem due to inadequate use of pesticides.

Production or usage of another group of persistent chemicals, polychlorinated biphenyls and dioxins, are prohibited in the Black Sea countries (Bulgaria, Georgia, Romania, Russian Federation, production – since 1988, Turkey, usage – 1996, Ukraine - not responded). The monitoring of PCBs biphenyls in the marine environment ended in the Russian Federation in 1994 due very low concentrations but is carried out in Ukraine. The knowledge on levels, trends and the fate of these compounds in the Black Sea environment is insufficient and require special studies.

Actions required:

- To revise the LBS Protocol in order to ensure consistency with the UNEP Global Plan of Action
- To assess the scope of problems and recommended “know-how” for the elimination of POPs accumulated over time
- To establish close working links with POPs Convention and promote POPs Convention in the Black Sea coastal states
- To conduct the POPs assessment in the Black Sea by the year 2006, with initial screening by the year 2004 in a course of GEF and TACIS projects and close coordination with the POP Convention in order to assess a scope of problem and potential threats to the Black Sea environment

a) Water quality objectives shall be harmonized 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 mid-1998. Furthermore, these objectives should be subjected to a comprehensive review every five years.

The first approach to the regional water quality objectives was developed with TACIS Funds 1996/1997 by the Activity Center on Pollution Monitoring and Assessment, Odesa, Ukraine. This document served as a basis for initial discussion on this issue. It appears now that the concept of environmental quality objectives was not elaborated to the required level. The dominant approach that considers of water quality standards as the water quality objectives prevails in the Black Sea coastal states. Marine water quality standards are established in Romania, Russian Federation, and Ukraine.

The water quality objectives in aquaculture and bathing waters were not discussed on the regional level. Taking into account the accession process for Bulgaria, Romania and Turkey, the requirements of EU Bathing Water Directive and EU Shellfish Directive are pressing issues for these counties.

The monitoring data of actual discharges expected to form a basis for regular reporting on the progress in “hot spot” elimination on the national level, has not been harmonized regionally.

Monitoring through ecological inspectorates or equivalent bodies and the obligatory self-monitoring for enterprises (Bulgaria, Georgia, Russian Federation, Turkey, Ukraine) discharging into the marine environment are the common practices in the Black Sea countries. The monitoring frequency depends upon the amount of discharge in Turkey, and monitoring is required for every enterprise on the daily basis in the Russian Federation and Ukraine. The monitoring and assessment of methodologies, approaches, techniques and procedures of actual discharges varies from country to country in the Black Sea region. There is an urgent need for a common approach and harmonized system for assessment based on the regionally harmonized environmental quality objectives and criteria for progress in pollution reduction.

The main responsibility for the compliance monitoring of discharges rests with environmental authorities and sometimes with other institutions such as the Ministry of Agriculture in Turkey. Information on actual discharges is collected by main holders of this information as well as by statistical services (except of Russia), namely:

Bulgaria	– Executive Environmental Agency
Georgia	– Ministry of Environment
Romania	– Ministry of Water and Environmental Protection through the national water companies
Russian Federation	– Ministry of Natural Resources
Turkey	– Ministry of Environment, statistics institutions
Ukraine	– Water Management Committee (special form reported yearly by enterprises) and statistical institutions.

Data reliability varies from country to country but in most cases is inadequate; information from enterprises is not easy to control; local environmental authorities mandated to control enterprises are poorly equipped technically, are weak financially and are insufficiently staffed. Professional training in many cases is inadequate as well.

Actions required:

- ⇒ **To seek technical assistance from donors for local institutional strengthening of the environmental authorities in terms of capacity building, equipment and personnel.**
- ⇒ **To harmonize the procedures for the monitoring of actual discharges and to prepare technical guidelines for the monitoring of actual discharges based on analysis of AG LBS by the year 2004.**
- ⇒ **To promote installation of automatic control devices in industries.**
- ⇒ **To establish regular reporting in an agreed format on the progress of the elimination of “hot spots” and incorporate these data into Black Sea Information System (BSIS).**
- ⇒ **To approve regional quality objectives by the year 2005 having them finalized and agreed upon by AG PMA and AG LBS by the year 2004.**
- ⇒ **To ensure implementation of a quality assurance and quality control system in order to obtain compatible and reliable information on the related issues.**

c) Each Black Sea state shall endeavor 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.

The framework legislation, regulations and licensing systems, implying the “polluter pays” principle were enforced in all Black Sea countries long before the adoption of the Black Sea Strategic Action Plan and other relevant principles of BSSAP. The enforcement mechanisms of the polluter pays principle included strict fiscal, administrative and/or criminal liability. However, these measures are not sufficient for successful enforcement due to existing economic problems such as the low paying capacities of polluters and the insufficient institutional strength of the environmental authorities to deal with a problem.

The development of regulatory tools received further momentum after the BS SAP adoption. Some technical training sessions were held in the framework of the TACIS Black Sea Funds 1996/1997. These were helpful but demand for this training and capacity building is high especially on local levels.

The need for training on the national level in the following areas were explicitly expressed by the AG LBS:

Bulgaria	– cost recovering principles, budget changes accordingly
Georgia	– harmonization with EU legislation in accordance with WFD
Romania	– EU legislation on hazardous substances, on accidental pollution, environmental insurance, international conventions, multi sector ISPA/ PHARE funds
Russia Federation	– local inflation rates; a new law on environmental protection; harmonization with water framework directive
Turkey	– Long-term ecological measures are not covered by polluters;
Ukraine	– WFD and approximation to EU legislation; coastal zone management; guidelines for ecological audit of enterprises

Necessary funding shall be sought by the BSC for the following regional training:

- Training on the WDF
- Guidelines for different topics in water management and coastal code management
- Implementation of river basin management in the region
- Regional Code of Conduct for waste water management

Actions required:

- ⇒ **To develop a system of on-going professional training of the local and national authorities on the enforcement mechanisms of the regulations for discharges from point sources**
- ⇒ **To strengthen the institutional capacity of the local and national authorities**
- ⇒ **To agree upon environmental quality criteria in order to levy the effluent discharges**

d) Each Black Sea state will also endeavor to adopt and implement, in accordance with its own legal system, efficient enforcement mechanisms by 1999.

Relevant legal actions for the control of pollution discharge includes: permits for special water use, penalties, shutting down of hazardous enterprises, or prescription of necessary protection measures.

Actions required:

- ⇒ **Improvement of technical means for environmental authorities.**
- ⇒ **Improvement of fiscal mechanisms, budget distribution.**
- ⇒ **Development of environmental insurance.**
- ⇒ **Developing a mechanism for damages from past problems.;**
- ⇒ **Development of public – private partnership.**
- ⇒ **Improvement of public awareness.**
- ⇒ **Development of an adequate system of on-going professional training for local and national environmental authorities.**
- ⇒ **Development of Black Sea Guidelines on Waste water Management**
- ⇒ **Development of economic incentives mechanisms.**

⇒ **Conduct of feasibility studies.**

The TACIS Black Sea Funds 1995/1996 and 1996/1997 provided seminars and some training to the Ukrainian, Russian and Georgian environmental authorities on licensing. In Turkey, some training was supported by the Japanese International Cooperation Agency, the German Technical Cooperation Agency, and through the technical assistance from the Netherlands. None of these activities covered the whole region though the need for such training is high.

Having in mind the strengthening of regional cooperation, the Advisory Group on the Control of Pollution from Land-Based Sources shall elaborate and agree upon the following guidelines / methodologies/manuals:

- Methodology for assessment of airborne pollution loads by the year 2005
- Guidelines for the inventory of the land-based pollution sources by year 2004
- Regional guidelines on waste water management by the year 2005
- Recommendations for defining and calculating costs for the waste water discharges year 2004
- Regional guidelines for assessment of industrial discharges by end of the 2003
- Regional recommendations for harmonization of national regulatory and legal tools within the EU Water Framework Directive by the year 2005
- Methodology for pollution assessment from diffuse sources starting in 2003 – finalizing in 2005
- Methodology for assessment of riverine inputs of pollutants in the year 2003 based on the OSPAR documents
- Regional guidelines on solid waste management by the year 2004 in cooperation with Advisory Group on Common Methodologies for the Integrated Coastal Zone Management.

Actions required:

- ⇒ **To strengthen the institutional capacities of national and local authorities in order to efficiently enforce the regulatory tools for the control of effluent discharges**
- ⇒ **To develop necessary regional guidelines, recommendations, and methodologies for management and control of point and diffuse pollution sources and for enforcement mechanisms**
- ⇒ **To establish a system of on-going professional training**

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 organized.

Enforcement involves fines, imprisonment, factory closures, or prohibitions on the right to build or operate facilities, though violators can appeal such actions in the courts. In general, municipalities and governmental agencies monitor compliance with regulations. However, because no comprehensive information exists on compliance, the effectiveness of enforcement procedures, outcomes of court challenges, and/or revenues raised through environmental fines, it is impossible to assess the effectiveness of the enforcement system on regional level. The financial constraints do not allow have fully equipped and trained enforcement authorities. In this respect more international technical assistance is needed in the Black Sea region for the next five years.

Due to transitional economy, the size payments are limited because of low paying capacity of those who are charged for pollution or environmental damage. Payments for utilities and municipal services are still partially subsidized from the central budget for the same reason. The payments for discharges and other

payments are not used for environmental protection funds or environmental protection and remedial measures.

One of the important features of inadequate enforcement is the lack of an effective system for on-going professional training of staff of the environmental authorities on all levels and, in particular, on the local level. The immediate needs for trainings cover the following areas:

- Establishing an authentic and full database for the licensing of water-use and waste water discharge and decision-making in the field environmental protection.
- Harmonization with EU Water Framework Directive.
- Promoting economic incentives.
- Tariffs for waste water discharge.
- Training for issuing permits for special water use for local authorities.
- Training for issuing permits for special water use for national authorities.
- Regional seminar for national marine environmental inspections.
- Application of regional quality objectives and standards that are expected to be agreed upon by the year 2004.

Actions required:

- ⇒ **to pursue improvement of the technical capacity of local authorities to the level of efficient enforcement of the regulations of effluent discharges**
- ⇒ **to develop the system of on-going training for the staff of the enforcement authorities in the Black Sea coastal states by the year 2005.**
- ⇒ **to establish the authentic and full database for the licensing of water-use and waste water discharge for decision-making**

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.

One of the important tools for the enforcement of environmental legislation is an application of economic incentives like tax exemptions, reduced payments for resources use for enterprises that introduce low and non – waste technologies or implement other effective environmental measures; stimulating prices and bonus for environmentally clean products; special taxes for ecologically harmful products, favorable credit rates are currently applied in the Russian Federation and Turkey, but minor attention received in the rest Black Sea states.

The following regional projects could significantly contribute to the implementation of the Black Sea SAP during the following five years:

- A feasibility study for development of economic incentives mechanisms and related pilot projects in each Black Sea country to accompany it;
- Assessment of economic and social benefits and resources uses in the coastal zone;
- establishment of public risk economic system and raising public awareness;
- assessment of diffuse sources and airborne pollution;
- assessment of riverine inputs and their effects on marine ecosystem;
- attracting investments in the Black Sea region;

Actions required:

- ⇒ **To sign a Memorandum of Understanding with European Environmental Agency and establish working contacts with its centers in order to keep in line with the European environmental process by the year 2003**
- ⇒ **To finalize the Black Sea Nutrient Reduction Plan (BSNRP) and to gain its approval by the Black Sea Commission in the year 2004.**
- ⇒ **To establish a regular progress reporting system with Black Sea Nutrient Reduction Plan implementation;**
- ⇒ **To conduct feasibility studies with at least one pilot project in each country in order to develop and implement the mechanism of economic incentives in the Black Sea states by the year 2006.**

e) Vessel source pollution

Article 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 2002

The negative environmental impact of shipping on the Black Sea ecosystem is caused by four major factors:

- Operational discharges from ships regulated by Annexes 1-6 of Marpol 73-78
- Marine Pollution Incidents From Ships
- Transport of alien species of potential threat to endemic species from ballast waters and on the hulls
- Discharges from offshore installations.

The Black Sea is defined as "special area" according to Regulation 10 of MARPOL 73/78 Convention although this has not been enforced. This means special measures for the prevention of the pollution by oil and oil products to be undertaken for whole of the region. On the national level, the sensitive areas are defined for the territorial waters for the purposes of the National Oil Spill Contingency Plans.

Actions required:

- ⇒ **To identify the offshore sensitive areas, taking into account the Black Sea currents, spawning grounds, migratory routes of the anadromous fish species, valuable habitats and other areas vital for the Black Sea ecosystem or human health.**
- ⇒ **To create a regional and national map of sensitive areas for the purpose of a regional and national contingency plan**

⇒ To enforce special area discharge requirements

Article 37.

Due to the rapid increase in traffic to Black Sea ports, the capacity of harbor reception facilities needs to be enlarged in order to comply with MARPOL Special Area requirements. Harbor reception facilities will be installed: for garbage by December 1999; for oil by December 2000; and for chemicals by December 2002. 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

In the period 1996 – 2000, port reception facilities for garbage, oil and chemicals were minimally enlarged as follows:

Garbage reception facilities (Tab. III.A5)

Bulgaria	two incinerators at present installed in Port of Varna and Port of Bourgas built before 1996
Georgia	garbage is transferred to the city reception facilities. The port of Poti – the barge with the capacity – 380 mt, the port of Batumi -the barge with the capacity – 380 mt
Romania	a specialized truck for collecting the garbage from ships with 12 m ³ capacity - working since 2000, National Company Maritime Ports Administration, Constantza which invested for this truck 40 000 USD.
Russian Federation	none
Turkey	none
Ukraine	Solid wastes incinerators for the wastes of VI class of hazard, financed by ports and authorities responsible for utilization of hazardous wastes

Oil reception facilities (Tab. III.A6)

Bulgaria	reception facilities, including a treatment plant (gravity separation and floatation), Port of Varna. A private company owns the facilities. A new treatment facility (small oily water separator) was installed in the Port of Bourgas in 2001 as a result of Bulgarian - Dutch cooperation project.
Georgia	all the wastes go to the reception facilities
Romania	only tank rehabilitation and modernization of pipes for a total cost 1 million USD was done by Constanța Oil Terminal Ltd. (not yet privatized-61.7% national shares). In July 2001 a bilge water treatment plant (1 m ³ /h with gravity separation, physical/chemical separation, biological treatment and sludge treatment) was built and installed by National Company Maritime Ports Administration Constanta. This was financed by the Ministry of Economic Affairs of the Netherlands at a cost of approximately \$ 400 000.
Russian Federation	Oil reception facilities were installed before 1996. Novorossijsk has oil reception facilities for dirty ballast water, tank washing (slops), sludge from tanker cleaning, oily bilge water, sludge from fuel oil purifier. Sochi – only for oily bilge water. Tuapse – for dirty ballast water, tank washing (slops), oily bilge water, sludge from fuel oil purifier.
Turkey	not reported
Ukraine	not reported

Between 1996 and 2001 no chemical reception facilities were installed in the Black Sea states. (Tab.III.A.7)

The port reception facilities require modernization, equipment, incinerators, and vessels to collect bilge waters and to remove wastes in all Black Sea coastal states.

A needs assessment for all types of the reception facilities is being carried out currently in Bulgaria, Romania, and Turkey:

Bulgaria	Port Waste Management Plans (PWMP) are under development at present. The capacity of the reception and treatment facilities needed will be assessed on the basis of the waste flow (depending of the number and the type of the ships calling into the port, the number of the ports covered by the plan, etc.)
Romania	a feasibility study for the Strategic Plan for Waste Management in Constanta, total cost 5.200 000 Euro, ISPA funds. The project includes the construction of an incinerator for wastes collected from ships and solid wastes from Port area; a bilge water treatment station; collector vessel for bilge waters and solid wastes from ships and the Port area; and an ecological dumpsite with a total capacity of 160875 tones.
Turkey	The Under secretariat for Maritime Affairs has prepared a draft "Regulation on Services Relevant to Reception of Wastes from Ships and Other Marine Vehicles" which is submitted to Prime Ministry for approval. After this regulation is put into force, Turkey will realize a survey on the current situation of Port Reception Facilities (PRF) along the whole coastline covering Black Sea, Marmara Sea, Aegean and Mediterranean coasts of Turkey in order to prepare a plan for investments on port reception facilities.

The investments needed for a few port reception facilities are estimated as follow:

Bulgaria	in process of assessing
Georgia	no projects
Romania	14 000 000 USD for improvements and modernization
Russian Federation	all types of investments defined for each particular case
Turkey	500 000 USD for Samsung and Trabzon ports.
Ukraine	all types of investments defined for each particular case

The EU / PHARE Feasibility Study Regarding the Establishment of Reception Facilities in the Main Ports of Bulgaria, Romania and Turkey, focusing on the port reception facilities in Samsun and Trabzon was carried out in 1996. As a follow up of this project, the Danish Environmental Agency provided a grant for the preparation of a Port Waste Management Plan for Port of Varna in the framework of EU PHARE Program. In Turkey the outcomes of this project were translated into the draft Regulation on Services Relevant to Reception of Wastes from Ships and Other Marine Vehicles.

Nevertheless the findings of these studies were poorly disseminated in the TACIS countries. No further funding was made available to update these studies or to develop a regional action plan for installation of port reception facilities for hazardous cargoes and garbage.

Recommendations:

- ⇒ **To update outcomes of the BSEP and PHARE relevant studies on port reception facilities**
- ⇒ **To seek international assistance for conducting additional feasibility studies in TACIS countries and to promote public-private partnership in this sector**
- ⇒ **To develop a regional action plan for the improvement of reception facilities and to initiate their installation by the year 2007**

Article 38.

A harmonized 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 and Safety Aspects of Shipping, by December 1998.

Bulgaria, Georgia, Romania, and Turkey successfully promoted regional cooperation between Black Sea ports authorities after signing the Memorandum of Understanding on the Port State Control, 2000. The

document was adopted and ratified in Bulgaria and Turkey and signed but not ratified by Romania. Due to financial constraints the Russian Federation, and Ukraine did not sign the MOU.

The main goals of the MOU are the followings:

- To ensure that marine transport meets the requirements for equipment for the prevention of oil pollution and holds the certificate on bilge and wastewater of ships. In case PSCO detects any deficiency regarding above mentioned equipment or certificates, such as oil record book and garbage log book, then they have legal right to detain ship unless deficiency is removed
- To reduce or to cease the navigation of the non-standard vessels in the Black Sea

The implementation of the MOU on PSC is given to the national competent authorities - the Maritime Administrations. The real implementation will start following the "gratis period" in which PSC inspectors and administrators are trained, information system established, etc.

The Black Sea Commission granted observer status to the Interim Secretariat of the MOU, based in Istanbul.

Actions Required:

- ⇒ **To encourage the rest of the Contracting Parties to join the MOU on Port State Control**
- ⇒ **To organize and maintain a system of on-going training for the staff of maritime organizations involved in implementation of the MOU**
- ⇒ **To further promote cooperation with the IMO in delivering the necessary training to the staff of the maritime and environmental authorities.**

Article 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.

The national legislative and regulatory tools are fully adequate in the Black Sea states, including requirements, restrictions, recommendations, fines, as well as arrests of vessels that do not comply with requirements in the territorial waters or their denial from crossing the national borders.

The competent national authorities that control the territorial waters, although with some limitations due to financial problems, are:

Bulgaria	
Georgia	
Romania	Maritime Transport Maritime Administration, Ministry of Environment of Georgia
Russian Federation	
Turkey	Coast Guards in Turkey, and municipalities within the boundaries of their provinces using vessels, patrol boards, or helicopters
Ukraine	Black Sea State Environmental Inspection, Azov Sea State Environmental Inspection, Coast Guards by sampling and remote control

The far more complicated issues of controlling illegal discharges in offshore waters but within the borders of exclusive economic zones are not resolved due to:

- The unsolved problem of delimitation of economic zones between Romania and Ukraine, Russian Federation, and Ukraine, Russian Federation and Georgia, Turkey and Ukraine.
- Insufficient funding of most of national authorities.
- Lack of a harmonized regional system on enforcement.
- Lack of regular observation by remote sensing.
- Lack of a system for oil identification of oil spilled on the sea..

Actions required:

- ⇒ **Implementation of the Memorandum of Understanding on Port State Control.**
- ⇒ **Development and implementation of a harmonized enforcement system to control the illegal discharges.**
- ⇒ **Development of a regional system of observation satellites.**
- ⇒ **Development of a system for using commercial aircrafts over the Black Sea for controlling purposes.**
- ⇒ **Implementation the requirements of the OPRC'90 Convention and the Regional Contingency Plan.**
- ⇒ **Control the installation of bilge water separators on board ships en route through the Black Sea.**
- ⇒ **Establishment of an integrated remote observation system for coastal zones pollution and other hazardous events.**
- ⇒ **Creation of an international inspectorate to control illegal discharges into the Black Sea.**
- ⇒ **Preparation of a project proposal for the IFI on the establishment of a regular satellite and system of monitoring illegal oil discharges.**

Article 40.

A harmonized 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 and Safety Aspects of Shipping, adopt such a system by December 1998. 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.

The existing system of fines is well developed and functional on the national level in all Black Sea States. The legislative and regulatory tools including the fine system provides sound opportunities to combat illegal discharges in the territorial waters. The system of fines is based on ecological norms/standards for discharges/emissions of pollutants and procedures/norms of payments for pollution of the marine environment. In all Black Sea countries administrative and criminal liability is foreseen for illegal discharges.

The main problem influencing the effectiveness of enforcement on the national level is insufficient funding for local authorities involved in this activity. The harmonized regional system of enforcement against illegal dischargers was not developed due to lack of any sound international project to support these activities and the inability of the Black Sea coastal states to resolve these issues.

Actions required:

- ⇒ To implement, in close relationship with the Memorandum of Understanding on the Port State Control, a harmonized inspection system and enforcement of existing requirements.
- ⇒ To promote the use of a "no special fee" rule for port reception facilities covering all major Black Sea ports on a regional level.
- ⇒ To agree, amongst all Black Sea coastal states, mandatory discharges in their port facilities, the development of such port facilities system and the exchange of information between the Black Sea ports.
- ⇒ To ensure installation of analytical equipments for rapid identification of oil polluters.
- ⇒ To develop a harmonized system of penalties based on regionally agreed quality objectives or standards.
- ⇒ To implement a feasibility study to identify the scope of illegal discharges and to propose measures for abatement.

Article 41.

Black Sea states will present a joint proposal to the IMO, in 1997, 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.

The invasion of exotic species may have a devastating impact on the indigenous species as in case of the *Mnemiopsis leydyi*, a predatory jellyfish that seriously undermined the stocks of pelagic fish species (first registered in 1982). These exotic species originate from discharged ballast water and from ships' hulls. Regional information on the number of vessels discharging ballast water is not yet compiled. But the reported data for Ukraine between 1996 and 2001 indicate an approximate three fold growth of marine traffic in Ukrainian ports. (IIIA.8).

There are many national studies on the impact of this invasion. The measures to prevent future problems are being reviewed in the framework of the UN GLOBALLAST project that established a demonstration site for the Black Sea region in Odessa, Ukraine. A Regional Scientific Workshop on ballast water management and control was organized by IMO in September 1999 and the first Black Sea Conference on Ballast Water Management and Control was held on 8 - 10 October, 2001 in Odessa.

The following institutions are involved in the UN GLOBALLAST Project:

Bulgaria	Maritime Administration, some invited scientists, focal point of AG ESAS.
Georgia	Transport and Maritime Administrations, Ministry of Environment of Georgia.
Romania	The National Institute for Marine Research and Development Gr. Antipa, Constanta, National Company "Romanian Waters", Environmental Protection Inspectorate, Civil Navigation Inspectorate.
Russian Federation	Azov Research Institute of Fisheries (AZNIRKH).
Turkey	Under Secretariat for Maritime Affairs.
Ukraine	Institute of Southern Seas, Odessa Branch.

A feasibility study for a regional project was proposed for evaluation and later for adoption between the Contracting Parties during Odessa meeting on ballast water in close cooperation with IMO.

Brief conclusions

- ⇒ **To encourage inter-regional cooperation between maritime and environmental authorities and to seek the financial support of the IFIs for implementing measures to prevent invasion of exotic species.**
- ⇒ **In connection with the IMO, propose and introduce preventive measures and establish a monitoring system in order to control invading species as an integral part of the BSIMAP.**
- ⇒ **To promote the idea on the establishment a UN global convention for ballast water management**

f) Pollution from dumping**Article 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.

There is a slightly increasing trend in the amount of the household solid wastes produced in the coastal area in Romania. According to the statistics in Romania: 82% of this waste, including mining and tailing waste is stored in special areas, 14% is sold or recycled, 3% remains where it is produced and 0.3% is incinerated. The total amount of municipal wastes produced in Black Sea counties in 2000 were as follows: (Tab.IIIA.9):

Bulgaria	not reported
Georgia	not reported
Romania	124 thousand T
Russian Federation	2.5 thousands M ³
Turkey	202 thousand T
Ukraine	not reported

A total ban on the disposal of municipal garbage in marine, shoreline and estuarine areas has been imposed in all Black Sea coastal states (IIIa.10). Special procedures, regulations and rules are applied in order to ensure proper management of the municipal solid wastes. Estimates of illegal disposals are not available in the Black Sea States. Existing information gaps do not allow assessment on the regional scope of the problem.

The policy, legislative and regulatory measures for solid waste management (Tab.III.11) although in many cases adequately developed or undergoing development, are not very effective due to: poorly equipped and staffed national authorities; poor economic conditions of the municipalities to whom these tasks are primarily assigned; lack of an effective system for collecting and recycling garbage; and ineffective incinerating facilities.

Solid waste management plans for costal municipalities have been developed on the national level as follow:

Bulgaria	
Georgia	Standard of collection of the wastes, but no a national plan
Romania	National Plan for Waste Management, 2000
Russian Federation	
Turkey	The plans of solid waste management are being developed in order to guide the municipalities responsible for construction and operation of integrated solid waste management facilities. Such a project was implemented for Trabzon and Rize Districts in Black Sea Region.
Ukraine	National Program on the Protection and Rehabilitation of the Azov and Black Seas; local plans for solid waste management are included in local environmental programs on the oblast level.

Regionally, the problem has not been addressed properly.

Actions required:

- ⇒ **To conduct regional feasibility studies on the scope of the municipal solid waste problem which includes the socio-economic implications in the coastal zone.**
- ⇒ **To develop and implement a regional strategy and action plan on solid waste management in the coastal zone.**
- ⇒ **To develop a set of regionally agreed guidelines and manuals for solid waste management in the coastal zone.**
- ⇒ **To promote innovative technologies and know-how on solid waste management in the coastal zone.**

Article 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.

The maritime authorities of the Black Sea, in cooperation with environmental authorities, are responsible for controlling the illegal dumping although no country has reported any cases.

Major means for the control of illegal dumping include: aircraft control (Russian Federation); an increased number of well-trained personnel of inspectorates; a penalties systems; better public and local authorities involvement; and rehabilitation projects (Turkey).

These measures are assessed as effective by all Black Sea states. Romania reports satisfactory decline of garbage pollution within port areas and because of newly attained equipment reports cleaner beaches. (Beach Teach STR 2000- EU specially designed installations). Turkey mentioned a successful experience with the implementation of municipal pilot projects. In the regional context, the problem has not been dealt properly and requires more attention from the Black Sea Commission. The information and know-how exchange was inadequate.

Actions required.

- ⇒ **To incorporate a monitoring system for litter as a component of the BSIMAP and to develop and implement coordinated methodologies and techniques for assessment of litter pollution.**
- ⇒ **To promote know-how and innovative technologies for solid waste management in small municipalities.**

- ⇒ To raise public awareness and educate populace, including the tourists, on issues of recycling and the reusing of solid wastes.
- ⇒ To improve information flow and exchange in order to share the best experiences, innovative technologies and know-how amongst the Black Sea municipalities.
- ⇒ To develop regional guidelines for the monitoring of illegal dumping.
- ⇒ To train and equip inspection's personnel.
- ⇒ To promote pilot projects for small municipalities.

Article 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 February 1998.

Deepening navigation canals in maritime areas is a routine component of port operations and harbor maintenance. The environmental risks from dumping arise from the migration of pollutants from sediments into the water column, and the dispersion of fine silts that could be carried through hundreds of kilometers, covered and settled down on the benthic communities. The extracted sediments or dredged spoils are, as a rule, dumped in sea in sites that are selected according to the following criteria:

- No or minimal effects on the biota.
- Low risk of pollution or dispersing.
- Deep enough.

The 11 dumping sites for dredged spoils are primarily located in the northern and western portion of the Black Sea in Ukraine. Some dumping sites have a long history of operation. The alternative technologies of using the dredged spoils for strengthening the seacoast or for constructions are not well developed in the region. In Romania the dredged spoils were used as material for land reclamation. Turkey does not have dumping sites along the Black Sea coasts (Tab. IIIA.12 and table IIIA.12a).

The dumping operation usually requires a special permit from the environmental authorities. Every new dumping site is subjected to environmental impact assessment.

In the Black Sea states the following trends in the amount of dumped dredged spoils are observed (Annex), namely:

Bulgaria	no requests for dumping operation in five years
Georgia	no dumping operations
Romania	slightly increasing trend in the amount of dumped dredged spoils
Russian Federation	increasing amount of dumped dredged spoils
Turkey	dumping is prohibited by law
Ukraine	no increasing trend

Only Romania performs a regular monitoring of pollution levels at the dumping sites.

The concentration limits for the dumping of dredged spoils are established in Romania, and drafted in Ukraine in the "Classification of bottom sediments from deepening the navigational canals in the Black and Azov Seas (within the boundaries of Ukraine)". This document is not approved officially. The Advisory Group on Pollution Monitoring and Assessment has not agreed on the conceptual approach to establishing limits for dredged spoils. Another approach (the Russian Federation) recommends the development of limits for each individual case as a part of EIA and an elaborate methodology for establishing such limits. The Joint

Meeting of the AG PMA and AG ESAS on the issue of establishing limited concentrations is scheduled in the Black Sea Commission Work Plan for July 2002.

Actions required:

- ⇒ **To harmonize approaches for establishing limit concentrations of dredged spoils and to develop necessary methodologies and guidelines for dredged spoils management based of the state of art in the international community by the year 2005.**
- ⇒ **To establish monitoring indicators for reporting on the environmental impacts of dredged spoils as a component of the BSIMAP by the year 2005**
- ⇒ **To promote know-how and innovative technologies for the management of dredged spoils through a number of pilot projects and with financial assistance from IFIs.**

Article 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.

The amending of the “Protocol on Dumping to the Bucharest Convention” was not on the Agenda of the Black Sea Commission due to the delayed establishment of the Permanent Secretariat. Existence of information gaps shows that the strengthening of the information requirements under the Protocol essentially requires the BSC attention and more intense work on the part of the Activity Center on Environmental Safety Aspects of Shipping. The harmonization of penalties and monitoring systems on the regional level needs further improvement. Progress must be attained on the harmonization of approaches to the establishment of the concentration limits for dredged spoils.

Actions required:

- ⇒ **To promote ratification of the London Convention to the Contracting parties as appropriate.**
- ⇒ **To revise the Protocol on Dumping and to prepare the necessary amendments by the next Ministerial Meeting in 2007.**
- ⇒ **To carry out a feasibility study for strategies and action plans for dredged spoils management.**
- ⇒ **To develop the guidelines, methodologies, and manuals for dredged spoils management.**
- ⇒ **To conduct necessary training and improve professional education.**
- ⇒ **To prepare and submit to IFIs a proposal of a regional project for an integrated remote observation system for coastal zones pollution and other hazardous events.**

g) Waste management

Article 46.

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

The national policies in the Black Sea countries are aimed at waste minimization, reuse, recycling and recovery of landfills. The major legislative and regulatory tools for waste management are adequately developed in the Black Sea countries, and include basic laws, regulations and programs (Tab.IIIA.15). The

accession countries transpose the EU Directive 2000/59/EC (port reception facilities for ship-generated waste and cargo residues). The following measures are being implemented at the national level:

Bulgaria	Reduction of the Harmful Impact of Waste upon the Environment Act, 18 September 1997. Basel Convention for Transboundary Hazardous Waste Management and Control. Port Waste Management Plans (PWMP)
Georgia	in the framework of the world Bank Integrated Management of Coastal Zone Project.
Romania	transposition of EU Directives.
Russian Federation	Federal Program "Wastes" (for 1996-2001) that envisaged implementation of specific measures/actions on waste management. Federal Program "Ecology and Natural Resources" (for the period 2001-2010) that includes the sub-program "Wastes".
Turkey	Not reported.
Ukraine	National Program on Protection and Recovery of the Black and Azov Seas (2001-2011) includes chapters on solid waste management. Regional Program on toxic waste management is being developed.

On the regional level, issues of waste management were not tackled at all in any of the programs or projects. The experience and knowledge on the available technologies, best management practices for household and hazardous wastes, etc. were not disseminated and were not shared among the Contracting Parties.

The development and establishment of a model of waste management facility for small and medium municipalities, including an integrated waste management plan, regional site selection, etc. One example of a successful experience that should be disseminated and promoted is the project for regional waste management in Trabzon and Rize Districts, Turkey.

Regional strategy and feasibility projects in the coastal zone are needed for:

- Preparation of a solid waste inventory (domestic, hazardous and clinical) representing the current situation for Black Sea Region, determination of waste characterization and amount of waste, preparation of a related computer model, and education of the personnel;
- Determination of the appropriate "Solid Waste Disposal Model" in terms of financial and technical characteristics including waste collection, transportation, recovery and disposal and site selection of the disposal facilities;
- Determination and establishment of the appropriate integrated model for the region related with integrated waste management;
- Preparation and construction of rehabilitation projects for the existing open dump sites, and assessment of a necessary system for the purpose of energy recovery from the existing disposal sites by determination of financial and technical properties;
- Determination of the number, types and properties of the equipment required by the proposed model in the framework of the project, investigating the investment cost of the project;
- Preparation and designing of projects for selected facilities, after the feasibility and demonstration projects are completed;
- Education of the personnel concerning the operation of a sanitary landfill before the operation and preparation of operation handbooks.

In cooperation with IMO and other relevant international organizations, the following regional projects would compliment the national efforts in addressing waste management issues if implemented:

- To prepare guidelines/manuals for development of the Port Waste Management Plan in line with the IMO and EU requirements and to promote its implementation in all major Black Sea ports.
- To promote the best environmental practices related to the treatment and disposal of wastes, including ship-generated wastes.
- To implement ecosystem rehabilitation projects.
- To prepare the guidelines or manuals for operation, maintenance and inspection criteria of disposal areas to guide related municipalities in the coastal zone.

Actions required:

- ⇒ **To incorporate waste water management issues in the Black Sea Commission Work Plan.**
- ⇒ **To seek financial support for regional feasibility studies on waste management and its environmental and social-economic implications in order to ensure sustainable development in the coastal zone.**
- ⇒ **To prepare a project proposal and implement a regional project on coastal zone waste management with national Plans included and harmonized.**

h) Transboundary movement of hazardous wastes

Article 47.

Without further delay, 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 movement of hazardous substances may pose the most significant threat to human health and to the ecosystem of the Black Sea. Currently no regional or national statistics or reporting exists on the illegal movement of toxic wastes in the Black Sea.

Finalizing the text of the Protocol to the Bucharest Convention concerning the transboundary movement of hazardous wastes and cooperation in combating illegal traffic thereof was postponed due to a significant delay with the establishment of the Permanent Secretariat.

Taking into account that the Black Sea Countries are Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989), the principles of this convention should be used in the Protocol.

The movement of the hazardous wastes is regulated on the national level by the list indicating the import of permitted hazardous materials including toxic wastes. Hazardous Wastes are those wastes deemed to be within the scope of Annex I and II of the Basel Convention and having one or several of the hazardous characteristics included and/or specified within Annex III of the Convention, (explosive, flammable, oxidizing, poisonous, corrosive, toxic, ecologically toxic, etc.) and materials polluted by these wastes. Therefore the promotion of the implementation of the Basel Convention could be sufficient for the control of transboundary movement of toxic wastes. In this respect the movement of any toxic cargoes shall be considered under this convention or any future Protocol.

Actions required:

- ⇒ **With assistance of IMO and in close cooperation with the Basel Convention, to carry out a feasibility study on the movement of hazardous wastes and the relevance of such Protocol.**

- ⇒ **To establish close links with Basel Convention.**
- ⇒ **To develop and implement a regional strategy and action plan for the control of movement of hazardous wastes.**
- ⇒ **To conduct a hazardous waste inventory representing the current situation in the Black Sea Region, indicating hazardous characteristics and amount of waste, existing disposal methods and the amount of waste subject to transboundary movement.**
- ⇒ **To support the implementation of the Basel Convention and to collect and evaluate the inventory data in order to prepare twinning projects in the Black Sea coastal states.**
- ⇒ **To support the development of a liability and compensation protocol between member countries to prevent illegal traffic.**
- ⇒ **To strengthen the custom offices for the control of illegal waste movement between countries, and to establish specialized custom offices.**
- ⇒ **To promote contingency and emergency response plans.**

Article 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 and 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.

The Activity Center on the Environmental Safety Aspects of Shipping (AG ESAS) with the assistance of IMO drafted the Contingency Plan for Protection of the Black Sea from Pollution by Oil that is currently being negotiated by national authorities of the Black Sea counties. The increasing trend in oil transport provides sufficient reason for drafting a contingency plan to combat oil pollution. However, the other hazardous substances are not covered by this plan. The AG ESAS has agreed that the Black Sea Contingency Plan will form an Annex to the Protocol of Emergency Response in Extraordinary Situations and will consist of two parts: oil (1) and other harmful substances(2).

Actions required:

- ⇒ **To promote the adoption and signing of the Contingency Plan for Protection of the Black Sea in the year 2003.**
- ⇒ **To develop Part 2 of the Contingency Plan to deal with harmful substances by the year 2005.**
- ⇒ **In cooperation with IMO, to organize the necessary training for rescue squads, and for national and local authorities.**
- ⇒ **To seek international assistance to obtain adequate equipment for rescue squads to enable them to operate in international waters.**
- ⇒ **To establish an efficient and reliable communication system.**

Article 49.

National and local contingency plans, covering both vessels and offshore installations, shall be improved and, where appropriate, adopted, by December 1998. 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.

The total amount of oil spilled in the Black Sea varies between 3.5 and 267.7 ton per year with no clear trend that reflects its accidental nature (see table IIIA 13). 170 oil spills with a total amount of 537.7 tons of spilled oil occurred between 1996 and 2001 in the territorial waters. In Bulgaria there were no significant oil spills or accidents registered during that period. Small operational and unidentified spills are observed in harbor areas, channels and territorial waters only. No spills were registered in Turkey (Tab. IIIA.13).

The major sources of the oil spills are due to accidental pollution from vessels and offshore installations. The offshore installations operate in Romania and Ukraine (Tab.IIIA.14); nevertheless, it is estimated that risk of oil spills is very low:

Bulgaria	There are no such installations in Bulgaria. A natural gas field is discovered near to Varna Bay. Exploitation is expected to start in 2002.
Georgia	not responded
Romania	National Company "PETROM"SA through its branch "PETROMAR" Constanta is operating in the Black Sea with 1 Main Offshore Oil Rig (with 4 jackets and 3 drilling rigs) in economic zone waters. The trends for Romanian offshore activities in the Black Sea estimate that they will be operational for the next 20 years.
Russian Federation.	At present there are no offshore installations in the Russian sector of the Black Sea and no activity is expected in the near future.
Turkey	none
Ukraine	6 operational installations at three deposit sites.

Actions required:

- ⇒ **To adopt and implement the Black Sea Contingency Plan in 2003**
- ⇒ **To improve international cooperation and technological transfer**
- ⇒ **To conduct training for personnel involved in the implementation of national and regional contingency plans**
- ⇒ **To disseminate useful information to the media to minimize the impact and effects in case of a natural disaster**
- ⇒ **To establish special means, modern equipment and constructional improvements of ships for the prevention of accidental spills and to minimize damage in case of natural disasters**

Article 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 and Safety Aspect of Shipping, adopt such a plan by December 2000. 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

The draft Regional Contingency Plan to Combat Pollution of the Black Sea by Oil is in agreement with existing or drafted national plans. The national contingency plans are developed or are being developed in all Black Sea states and are aimed, in most cases, at combating oil pollution:

Bulgaria	National Oil Spill Contingency Plan, December 2001
Georgia	Final draft developed in the framework of the World Bank ICZM project, will be approved in 2002
Romania	All local contingency plans to combat oil pollution were developed after 1995; modern equipment according to each local contingency plan was purchased after 1996. The National Contingency Plan was updated each year due to frequent government policies changes; some uncertainties still exist in the subordination of the Civil Protection Command. The coordinator of the national structure in case of major oil spills will be approved in 2002
Russian Federation	Regional Emergency Plan for the Black Sea, under revision, included in Federal Plan, will be approved in 2002
Turkey	National Contingency Plan is submitted to the Parliament, will be approved in 2002
Ukraine	Local plans for handling regional spills are reviewed annually. A plan for handling the oil spills in the open seas is being developed in Ukraine, will be approved in 2002.

For the accession countries, there is a pressing need to develop national contingency plans that cover accidental or deliberate marine pollution with all harmful substances (not only by oil) according to the European Decision No.2850/2000/EC. In Romania's case urgent international support to extend the Romania National Contingency Plan to include all harmful substances is required. The same is valid for the Black Sea states. In this respect, advice and technical assistance from IMO shall be expected.

The development of the regional and national contingency plans depends on the amount of cargoes handled and the level of the risk. It has to be taken into consideration that at present these countries have no capabilities to counteract any other polluter but oil. The port operators and companies involved are obliged to take into consideration the IMO International Maritime Dangerous Goods Code and related MARPOL Annexes.

Actions required:

- ⇒ **To conduct regional feasibility studies for hazardous cargo management.**
- ⇒ **To finalize part 2 to the Black Sea Contingency Plan on Harmful Substances in the year 2005.**

Article 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.

National response systems are fully set up and operational but there are financial difficulties in most of the Black Sea countries (Tab.IIIA.16). Insufficient financing complicates the acquisition of adequate equipment

and staff for the responsible authorities. There is a particular lack of financing for the boats, oil recovery vessels, heavy booms, skimmers and other specialized equipment and facilities needed in Bulgaria, Georgia, Romania and Ukraine. In the Russian Federation, the upgrading of equipment is needed in order to reach international standards. In Turkey the situation differs from county to county.

The national level of preparedness to emergency situations differs from country to country as follows:

Bulgaria	relatively good
Georgia	relatively good at oil terminals
Romania	the national contingency plan has not been implemented, therefore preparedness is estimated as low especially for large scale accidents
Russian Federation	high level of preparedness
Turkey	did not respond
Ukraine	on the local level – ports, shipyards- the preparedness is satisfactory, in open sea-unsatisfactory

National studies and training have been implemented in every Black Sea country, namely:

Bulgaria	There is a need of regular (annual) exercises for combating oil pollution. A special chapter of the National Contingency Plan deals with the exercises. The cost for such a full-scale exercise amounts to about 20,000 USD.
Georgia	Exercises are carried out at Batumi State Maritime Academy and in the port of Supsa
Romania	A study on a decision support system, based on oil spill modeling and a data base study are being implemented. These studies have to be performed by the National Institute for Marine Research and Development –Constanta by 2001 at a value of 15000 EURO.
Russian Federation	not responded
Turkey	not responded
Ukraine	not responded

Actions required:

- ⇒ **To establish a system of on-going training on regional and national levels for contingency plans**
- ⇒ **To finalize development of national contingency plans by the year 2003 and to ensure their regular update**

Article 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 involvement of the shipping, oil and gas sectors is crucial for the implementation of effective contingency plans. Nevertheless, in the Black Sea coastal states, this cooperation is not always adequate and requires significant improvement:

Bulgaria	at present, the big Bulgarian private companies involved in the oil and gas sector are not ready to establish and maintain such collaboration. The companies, including operators of oil terminals, are obliged according to the law, to prepare local/industrial contingency plans as well as to maintain a minimum of approved equipment and staff in case of emergencies. The facilities and manpower available in these companies are included in the next levels of response - port, municipality, district and national.
Georgia	very good co-operation with Chevron, BP, Gioc and ports.
Romania	Cooperation is established in the framework of the National Plan (all the local plans are part of the National Plan). Oil and gas sector covers about 20% of the costs of the contingency plan and emergency response operations.
Russian Federation	There is close cooperation between Russian shipping, oil and gas companies that have necessary equipment and means for oil spill response.
Turkey	There is no cooperation with oil and gas companies
Ukraine	not responded

Only Romania reported on the offshore national exploration program through PETROMAR Offshore Oil Company that is being developed by the National Agency for Mineral Resources.

In order to minimize the risks of accidental pollution of the marine and coastal environment, the following projects were implemented or will be implemented on the national levels:

Bulgaria	Remote sensing of the marine surface for monitoring oil spills in Bulgarian waters. The project proposal is submitted to EU Phare CBC. Contingency planning on different levels in compliance with the IMO requirements.
Georgia	NOSCP, Ballast Management Plan, Port Plan of Integrated System of Management of Coastal Zone
Romania	Bilateral agreements between the institutions involved in oil spill response as between Navy, Frontier Police, National Institute for Marine Research and Development and Civil Navigation Inspectorate. The feasibility study undertaken in the QUALIPOL project, an Ecos –Overture Program in cooperation with France and Spain to establish a Center for the prevention and intervention against oil spills (similar to CEDRE in Brest for France) Update and development of the local intervention plans. By the end of 2001 the local PETROMAR (offshore oil company) intervention Plan will be updated for deliberate accidents and provided with an annex with a local plan in case of natural disasters.
Russian Federation	To promote construction of ships with a double bottom and hull.
Turkey	not responded
Ukraine	not responded

Actions required:

- ⇒ **To promote the signing and endorsement of the Regional Contingency Plan for Combating Pollution of the Black Sea by Oil.**
- ⇒ **Development by 2005 of a regional Black Sea Contingency Plan for hazardous substances with involvement of Civil Protection B4 Directorate from European Community-Brussels in the development of this Plan and IMO support**
- ⇒ **To conduct regular joint exercises with bilateral or multilateral cooperation.**
- ⇒ **To establish a common communication and information system (web site) with a comprehensive database, already under the development, by the US Department of Energy and Oak Ridge National Laboratory USA.**
- ⇒ **To implement an integrated remote observation system for open sea and coastal zones pollution and other hazardous events.**

- ⇒ **To promote implementation of international and European legislation guidelines and methodologies.**
- ⇒ **To improve cooperation with the shipping, oil and gas sectors by involving them in regional or local events on contingency planning.**

i) Assessment and monitoring of pollutants

The quality and reliability of information received from monitoring and assessment activities are crucial for decision and policy making on the national and regional levels. Although a progress in establishing a regional monitoring and assessment program is slow, it shall not hinder the scope of work and efforts undertaken by the Black Sea coastal states on the national level, considering the extremely limited national resources and the absence of any sound international program, handled the monitoring and assessment needs of all Black Sea states .

The basic principles on which the Black Sea Integrated Monitoring and Assessment Program is being developed are as follow:

- Affordability by each country
- Sustainability through time
- Step by step approach to establishing a fully adequate monitoring and assessment system
- Integration of all ecosystem components
- Compatibility with major environmental trends in European and global context.

Article 53.

A "State of Pollution of the Black Sea" report will be prepared and published every five years, beginning in 1996. It will be based on the data collected through the coordinated pollution monitoring and assessment programs.

National reports on the state of the environment of the Black Sea constitute important parts of the annual national reports on the State of the Environment in Bulgaria, Romania, Russian Federation, and Ukraine. Georgia expressed a strong intention to set up a system for marine environmental assessment and reporting in a compliance with provisions of the BS SAP. No reports on the state of the environment of the Black Sea are produced in Turkey.

On the regional level, the Black Sea Pollution Assessment (ed. Laurence D. Mee, Graham Topping, UNDP, New York, Black Sea Environmental Series, Vol.10, 1998) was published and consists of a series of papers. It attempted to examine the available environmental data on the Black Sea by scientists who are actively involved in investigative work in the Black Sea and by experts who worked in the framework of the Black Sea Environmental Program.

Publishing the "State of Pollution of the Black Sea", based on the data collected through the coordinated pollution monitoring and assessment programs remains unresolved due to the absence of a regionally agreed monitoring and assessment program and the inability of the Black Sea coastal states to support its national monitoring efforts to the full extent.

Actions required:

- ⇒ **To finalize the development of the core Black Sea Integrated Monitoring and Assessment Program (BSIMAP) by June 2002. The Black Sea Commission is expected to approve the BSIMAP during its 9th meeting and make necessary arrangements on the national level to ensure national financing for the implementation of the core BSIMAP. Regular reporting in a jointly agreed format shall be piloted by September 1st, 2002 and fully functional in 2003.**

⇒ **Taking into account the scarcity of available resources, to compare national requirements for the reporting and assessment and to provide the Black Sea focal points with jointly agreed guidance for the preparation of the national reports in jointly agreed format in order to include regionally important information in preparation of national reports. In this case lesser burden will be carried by the national focal points and the Activity Center on Monitoring and Assessment, Odessa, Ukraine.**

Article 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 programs, 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 1998.

Assessment of the state of the environment of the Black Sea on the national level is usually coordinated by the environmental authorities and based of data from surveys, research cruises, and data of the national monitoring networks (Bulgaria, Romania, Russia Federation, and Ukraine). In some cases the monitoring and assessment activities are project-based (Turkey).

The national monitoring programs within their territorial waters are conducted by Bulgaria, Romania, Ukraine, and the Russian Federation, although often irregular and with a limited numbers of parameters due to economic reasons. Georgia reported no monitoring activities during past 5 years. Only project based monitoring and assessment was reported for Turkey. The absence of a regionally agreed monitoring and assessment program made national financing of these activities questionable.

The methodologies and techniques used for marine environmental assessments differ in each country. For regional purposes these methodologies and techniques should be agreed upon and consistent with regional needs.

The following parameters are usually included in the monitoring programs: nutrients, BOD, oil, trace metals (Bulgaria, Romania, Ukraine, Russian Federation), organic pollutants (Bulgaria, Romania, Ukraine), and biological parameters (Bulgaria, Romania, Ukraine). In addition to the limited number of parameters, quality of analyses, frequency and spatial coverage of sampling were not adequate. The most regular monitoring data in Romania were limited to the inshore area (depth of 20 m). Except for Ukraine, no monitoring data are known for the offshore area. Most of the parameters included in the Water Framework Directive for coastal waters are not measured and will not be measured by the Black Sea countries in the near future.

The importance of using biological variables in the monitoring programs are well recognized in all Black Sea countries and carried out in those that manage to conduct monitoring activities. Currently, biological parameters are fully integrated in the national monitoring programs of Bulgaria, Romania, and Ukraine. A standard set of plankton and benthos parameters used to be an integral part of the national monitoring program in the Russian Federation but not anymore due to economic reasons. Georgia expressed its intention to include these parameters in its national monitoring program as soon as the monitoring activity became affordable for this state. Turkey will fully integrate this component into the regional monitoring program when approved. Measurements of the biological effects on the level of organisms in the current economic conditions do not seem feasible and will be postponed.

Initiated in the framework of the BSEP and TACIS Projects, and further developed in a framework of the IAEA with assistance of the Monaco Marine Laboratory, the capacity for establishing a quality assurance and quality control system is still weak. Several training sessions in the framework of TACIS Black Sea Funds 1996/1997 were conducted in the Black Sea region. Unfortunately, due to the EU policy of TACIS and PHARE Programs, Turkey was left behind in these regional activities.

The most pressing needs for establishing and agreeing a regional monitoring and assessment program are clearly expressed by all advisory groups. The Advisory Group on Pollution Monitoring and Assessment has drafted the Black Sea Monitoring and Assessment Strategy including a core-monitoring program that would

be affordable for the Contracting Parties. This is expected to be approved by the Black Sea Commission in 2002.

Actions required:

- ⇒ **To prepare a strategy for a regular regional assessment process in which the national components play an important role**
- ⇒ **To establish close cooperation with the European Environmental Agency and its thematic centres for the best technical advice and assistance**
- ⇒ **To further strengthen the Activity Centre on Pollution Monitoring and Assessment upon the completion of the TACIS Black Sea Regional Program 2000/2001 with a system of quality assurance and quality control fully established on the regional level**
- ⇒ **Upon the decision of the Advisory Group on Pollution Monitoring and Assessment, to establish the Black Sea Integrated Monitoring and Assessment Program by the year 2005 including a full set of technical guidelines, methodologies and recommendations**
- ⇒ **To use the best experiences of OSPAR, HELCOM and other regional sea conventions**

Article 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.

The WHO studies, in the framework of the Black Sea Environmental Program, on the status of the bathing water in the Black Sea coastal states produced a Draft Manual for Recreational Waters and Beach Quality Monitoring and Assessment in April 1995. This was the last activity undertaken in a framework of the Black Sea Commission on the quality of the bathing waters. To some extent this draft manual was followed in Romania and Turkey. The rest of the Black Sea countries used their own procedures. Taking into account that the national sanitary and epidemiological inspection units are usually poorly equipped and staffed, limited analyses were performed.

Although on national levels uniform measurement techniques are introduced, the situation is different on the regional level. The responsibility for the monitoring of bathing water quality in the Black Sea coastal states resides with the national authorities on sanitary and hygienic affairs that are usually affiliated with the Ministry of Health Care or a corresponding institution. Poor coordination between the environmental and health authorities in the regional context, and no clear division of responsibilities between AG PMA and AG LBS to which this task was assigned, resulted in no activities on the regional level for the following five years.

Regional activities can benefit from the harmonization of existing national legislations with the EU Directive on Bathing Water Quality and which is in progress in Bulgaria, Romania and Turkey, is being implemented in Georgia in the framework of GICMP (Georgian Integrated Coastal Management Project) and is being pursued by Ukraine and the Russian Federation.

Additional momentum for regional cooperation could be received through close cooperation with the Convention on the Protection and Use of Transboundary Watercourses and International Lakes and its corresponding Protocol on Waterborne Diseases.

Close cooperation with WHO and related European agencies shall be established.

Information for the general public on the state of beaches and bathing waters was inadequate. Only in Turkey was a system of informing the public about the state of beaches and bathing waters introduced in a form of a brochure and a Website on blue flagged beaches. The Blue Flag program requires not only a clean environment but also a fully developed infrastructure for tourists. This is currently unrealistic for countries in economic transition. In order to attract tourists the information on the state of the beaches and bathing waters should be widely available through the whole tourist season.

In the regional context, future work for bathing water monitoring and assessment will focus on:

- Revising and approving the regional guidelines on the monitoring of bathing water quality and techniques for measuring water quality, taking into consideration the EU Directive on Bathing Water Quality and EU Water Framework Directive by the year 2006 and using the WHO Draft Manual for Recreational Waters and Beach Quality Monitoring and Assessment as a basis for this document
- Establishing a functional system of quality assurance and quality control of bathing waters by the year 2006
- Developing and establishing a regional information system on bathing water quality as a part of the integrated information system of the Black Sea Commission by the year 2004 in close cooperation with private tourist sector
- Establishing an effective system of professional training for local and national authorities by the year 2007
- Fully absorb the best available experiences from regional sea conventions, including OSPAR, HELCOM, MEDPOL, Barcelona, experience of the UN organizations, EEA thematic centers, etc.

Establishing a regional monitoring and assessment database and a clear reporting policy and procedure still remains an unresolved issue for the Black Sea Commission. In the absence of the Permanent Secretariat of the Black Sea Commission, the project-based attempt to establish a system lacked the continuity and sustainability in the regional context. Therefore, upon the establishment of its Permanent Secretariat, the Black Sea Commission provisioned the establishment of a Black Sea Information System as a priority in its work that was financially supported by the European Union. Close cooperation with EEA thematic centers and their information centers, databases of the regional seas conventions, including ICES, shall be pursued. The Black Sea Geographic Information System should be revised and further developed to serve the regional needs. Full use should be made of the Black Sea Hydro meteorological Database developed by the NATO sponsored project that has operated in the region since 1998. The Advisory Group on Pollution Monitoring and Assessment should be fully involved in the GOOS activities in order to avoid overlapping and duplication. If this happens, cooperation within the scientific community of the Black Sea coastal states should significantly improve.

The capacity to study the issues that require the additional research programs and activities on the national level is very limited. Therefore, additional international funding shall be sought, in particular in order to conduct the following studies:

- To expand monitoring activities to those parameters that are required by the Water Framework Directive
- To define the scope of problem and impact of persistent of organic pollutants on the Black Sea ecosystem
- To carry on a study of airborne pollution and to include this component in the Black Sea Integrated Monitoring Program
- To carry on studies on the diffuse and riverine pollution and its loads to the Black Sea
- To fully incorporate components of biodiversity and fisheries in the Black Sea Integrated Monitoring and Assessment Program.

Article 56.

Data regarding actual and assessed contaminant discharge measurements for point sources, rivers, and, where possible, diffuse sources, shall be compiled and freely exchanged every five years, beginning in 1996. It is advised that the Advisory Group Control of Pollution from Land Based Sources make these compilations in future.

Although the collection of data on actual discharges is a common practice in the Black Sea countries, a regional reporting system was not established. The coordinating role of the AG LBS should be significantly improved taking into account the past years of inactivity. The Commission, through its Turkish member, shall ensure the necessary support to the Activity Center for which Turkey is responsible.

The regional database for LBS should be developed as an integral part of the Black Sea Information System and embrace the following issues:

- Information about the hydrological condition of in the basin of the Black Sea
- Information about the background pollution of the Black Sea and water bodies in its basin ;
- Information about the industrial activities i.e. what kind of enterprises are available, their specificity, raw materials and technologies used;
- Information about the discharge of sewage into the Black Sea (inventory of point sources) and about the diffuse pollution;
- Information about prospective constructions in this region;
- Water quality standards, established for the Black Sea;
- Information about the developments in the field, best available technologies existing in the field, and about which licensed facility, if speaking about the new construction or reconstruction, it belongs;
- Information about the existing systems of sewage and water treatment facilities for the enterprises of this field;
- Popular information and educational materials for the general public.

Ideally, it would be desirable to develop a database, to hold all pertinent information, which could be shared with and added to by other organizations.

Computer based programs for the calculation of the Maximum Available Discharges (MAD), parameters of treatment plants, waste and storm water volumes and flow for different settlements and existing and new enterprises are needed in the region.

Actions required:

⇒ **Ensure implementation of the core Black Sea Integrated Monitoring Program starting in the year 2003 with the preceding reporting piloted in September 2002 and based on the national monitoring data in the established format.**

- ⇒ **Comprehensively assess the state of the environment of the Black Sea by the year 2005.**
- ⇒ **Publish a “State of the Environment Report” in the year 2006.**
- ⇒ **Improve cooperation with and capacity transfer from EU centres of excellence in marine monitoring to help Black Sea littoral countries.**
- ⇒ **Develop environmental quality objectives and a comprehensive list of environmental indicators for policy and decision-making in the Black Sea coastal states (Environmental Quality Standards Report is a good framework for harmonization, with movement towards EU Directives).**
- ⇒ **Further strengthen the Activity Center on Pollution Monitoring and Assessment, focal points and strengthen their cooperation with national institutions.**
- ⇒ **Cooperate with Danube countries in the Framework of the BSC – ICPDR Memorandum of Understanding.**
- ⇒ **Incorporate data on actual discharges and other issues related to the land-based pollution sources in the Black Sea Regional Information System by the year 2003. In this respect the necessary training and assistance to the national focal points on land-based pollution sources should be delivered in a course from the GEF and TACIS Projects.**

B. Living resources management

a) Commercially exploited resources

Article 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.

The fisheries sector in the Black Sea has experienced the most drastic decline in species number, fish catches since the 60s. In the framework of the BSEP studies of the fisheries sector, three major causes decline were identified:

- Over fishing
- Invasion of exotic species i.e. *Mnemiopsis leydyi*
- Pollution

Expert opinion maintains that the maximum sustainable catches in the Black Sea could reach as much as 2,000,000 tons per year if the principles of responsible fishing were introduced and if necessary protective measures were established (if *Mnemiopsis leydei* would be controlled). In addition a few million tons of mussels could be harvested if the aquaculture sector were developed. Analysis shows that the overall fish catches during last five years remain more or less stable with a slightly increasing trend for the Russian Federation and Ukraine. Total catches in Romania were reduced and in Turkey they were stabilized. (Tab.IIIB.1; Tab.IIIB.2)

The state of pelagic food resources is improving for many fish species mainly due to the introduction of *Beroye ovata*. This is a natural enemy for the *Mnemiopsis leydei*, a predator jellyfish that practically undermined the feeding resources of the pelagic fish in the Black Sea in 80s-90s. Enforcement measures and decreased pollution loads due to the economic crisis in the most of the Black Sea coastal states are also important to revitalization. As a result, in last two to three years, the total stocks of small pelagic fish species shows some attributes of recovery.

The development and enforcement of national legislative and regulatory measures played a significant role in improving the current state of the fish stocks and control over responsible fisheries in the region. The basic legislation concerning fisheries that was adopted before 1996 in the Black Sea coastal states, was further developed, improved and enforced over a period of five years. They directly addressed the conservation issues. Only in Turkey the basic laws of 1971 and 1986 still remain unchanged though currently the Turkish Parliament is considering the new Law on Fisheries. The current fisheries legislation is sufficient to sustain and manage the marine fish and other living resources in all Black Sea states. In the transboundary context, it still requires strengthening and regional harmonization of the regulatory and legal framework especially in regard to the conservation and protection of the fish and other living marine resources. (Tab. IIIB.3).

Accession to EU, pursued by Bulgaria, Romania, and Turkey and stated by Ukraine and Georgia as their national policies, will require a further streamlining and improving of the regulatory base for the conservation of marine habitats and marine living resources. Therefore, a prompt agreement on the Fisheries Convention and the Protocol on Biological and Landscape Diversity Conservation, development and implementation of the Regional Strategy and Action Plans for Management of Fisheries and Other Marine Living Resources, as well as clearly stated quantitative and qualitative objectives and a workable timetable, will provide additional momentum for implementation and enforcement of national legislation.

The Black Sea countries have a history of a well established institutional framework for dealing with the fisheries sector either as a self-standing bodies (State Committee on Fisheries, Russian Federation) or as a part of the institutions dealing with the agricultural sector (Bulgaria, Romania, Turkey, Ukraine) or the environmental sector (Georgia) (Tab.IIIB.4). Well-developed systems of national laws, regulations, rules and instructions including licensing and annual quotas are constituents of the overall management system in fisheries. Inter sector cooperation with environmental protection authorities has a variety of forms, specifically:

- Bulgaria – not indicated
- Georgia - an Inter institutional Scientific Council of Experts for Fisheries Issues
- Romania – a special procedure for cooperation of local authorities in the Danube Delta Biosphere Reserve
- Russian Federation - a special procedure issues the quotas of fish catches and approves rules of fisheries
- Turkey – not indicated
- Ukraine – inter sector working groups

Cooperation between the fisheries and the environmental protection authorities shall be strengthened and institutionalized in order to achieve a sustainable development of the fisheries sector. Regional cross sectoral cooperation is not properly established and requires more actions on the part of the Contracting Parties.

Legislative and regulatory measures in the Black Sea countries are dealing with or are enforcing:

- Seasonal bans on fishing activities during spawning periods
- Fish size (Table IIIB.7)
- National Quotas
- Protection of feeding and spawning grounds
- Protection of wintering grounds
- Fishing Gears restrictions

In common practice, fisheries management introduces the regulations for fisheries on the issues indicated above. These practices are considered effective tools and are enforced in the Black Sea states. Control of catches through the fisheries efforts is already established in some countries and could be promoted in the Black Sea coastal states.

The decline in fish stocks and the resulting growth in fishing efforts implied a worsening of the social and economic conditions of coastal population depending on fisheries. In Romania estimated losses represented 4 million. USD compared to 1985-1986. In Ukraine estimated losses were as much as 75 million USD, and

economic losses for other marine resources were between 6 – 9 million USD a year (Black Sea Environmental Priority Studies, Ukraine, 1998, data available before 1995). In Turkey the losses in fish catches comprised 132,000 tons. While the monetary losses were not so obvious due to a flexible market economy, 50,000 fishermen were suffering unemployment (Black Sea Environmental Priority Studies, Turkey, 1998, latest data available for 1995).

The Black Sea Environmental Priority Studies initiated a program for the economic assessment of losses for fisheries due to Black Sea pollution and the degradation of its ecosystem in a framework of the BSEP. These studies have not been completed and published. Only two national reports (Turkey and Ukraine) have been published. Estimation of annual economic losses would be extremely indicative for management and policy makers. To a great extent, the economic assessments are inadequate due to lack of common methodologies for such assessment. Common methodologies and approaches for estimation of economic losses on the regional scale are necessary and must take into consideration existing national and international laws.

Illegal fishing is one of the most important concerns of the Black Sea littoral states. Extradited fish catches could be as much as 1000 tons a year in Romania. The economic value could reach as much as 2-5 million USD in Bulgaria, 3 million USD per year in Romania, and 1-2 million tons in the Russian Federation. Assuming similar losses for six Black Sea countries, annual losses for the Black Sea region may reach 20 million USD a year. Legislation to combat illegal fishing on the national level is well advanced and enforced to the extent possible by the following institutions:

Bulgaria	-
Georgia	- Ecological Police
Romania	-
Russian Federation	- Fisheries Inspection, coast guards
Turkey	-
Ukraine	- Fisheries Inspection, coast guards

Nevertheless, these agencies are not always sufficiently staffed and equipped for complete control even in the territorial waters of a respective country. More complicated issues of international control become dependent on the development and enforcement of regional and bilateral legally binding documents, namely the Fisheries Convention, Protocol on Biological and Landscape Diversity Conservation to the Convention on the Protection of the Black Sea Against Pollution.

The scientific activities in the fisheries sector are presented in the list of publications. Nevertheless these activities, especially those concerning regional stock assessments of transboundary species, pollution effects on fish, and pollution levels of fish, encounter the severe financial problems. Therefore, international assistance will be sought for projects to improve the fisheries sector of the Black Sea, such as a project:

- - To conduct a regional fish stock assessment
- - To protect the spawning and feeding zones of the anadromous and transboundary species

Actions required:

- ⇒ **To pursue the finalization and adoption of the Fisheries Convention by 2004.**
- ⇒ **To revise, update and give legal status by the year 2005, to the List of Rare and Endangered Species based on Annex II to the Protocol on Biological and Landscape Conservation.**
- ⇒ **To conduct an inventory and assess the conditions of migratory routes, spawning and feeding grounds for important anadromous species of the Black Sea and to prepare a regional project for their rehabilitation and protection in 2002-2004.**
- ⇒ **To prepare and implement a regional strategy on sustainable fisheries in cooperation with the FAO and to promote the FAO Code for a Responsible Fisheries in the Black Sea.**

- ⇒ **To improve fisheries' practices in order to avoid the by-catch of species of aquatic animals other than commercial species.**
- ⇒ **To improve information exchange especially on undertaken measures and pelagic fisheries.**
- ⇒ **To improve cooperation between fisheries and the environmental sectors on the national and regional levels.**

Article 58.

In order to rehabilitate ecosystems which are of particular importance to the Black Sea fisheries as a whole

Phylphora field and other critical nursery areas will receive special protection spawning areas of anadromous species will be restored and coastal lagoons will be rehabilitated. By the year 2000 each Black Sea state will develop at least one pilot project which will contribute to the restoration of areas vital to recovery of the Black Sea fish stocks

The quality and quantity of fish stocks are strongly dependent on the conditions of the ecosystem and habitats for spawning and feeding. The most important ecosystems for fisheries in the Black Sea are presented in Tab. IIIB5. In the Russian Federation, the General Plan for Fish Stock Reproduction was developed and adopted by the Government. All necessary work related to the fish farms are conducted and financed according to the Plan. When necessary, appropriate amendments are made to the Plan by the regional administrations or by the State Committee for Fisheries of the Russian Federation. The conservation and rehabilitation of these ecosystems and areas vital for the restoration of fish stocks and species still remains important in a regional context. The catches of immature and juvenile fish impose a negative effect on fish stocks to which a special attention should be paid and control measures applied.

The endangered fish species of the Black Sea are included in the Provisional List on Rare and Endangered Species to the Protocol on Biological Diversity and Landscape Conservation that was signed in June 14, 2002 in Varna, Bulgaria. Most of these species are also included in the national Red Data Books on Endangered or Rare Species. However, the conditions of the most of the Black Sea commercial fish species continue to be the concerns of fishermen and fisheries management institutions. Their improvement requires further enforcement of regulatory measures to sustain fish population on the necessary level for being a resource for the Black Sea coastal states.

The spawning grounds of the anadromous fish species are of particular importance because they imply the reproduction of such commercially valuable species as sturgeons, pike perch, roach, etc. Conservation of these spawning grounds means the preservation of the undisturbed conditions of river mouths. In spite of an evident need for protection and restoration of spawning grounds, crucial for rehabilitation of the anadromous fish stocks, and with national efforts to protect and restore these spawning grounds, the regional capacity to tackle the problem was used inadequately. Moreover, particular attention should be paid to the creating, expanding and sustaining of reproduction facilities for those species that may be threatened or which show the attributes of disturbed populations, especially of sturgeons and turbot.

The success in preserving spawning grounds of anadromous fish species will depend on relevant national actions and close cooperation with river Commissions, such as the International Commission on the Protection of the Danube River, the future Dnipro Commission, and the bilateral cooperation of the Russian and Ukraine in the Sea of Azov.

Coastal lagoons, important habitats and spawning grounds for many marine fish species, play an important role for the Black Sea fisheries sector, in particular for aquaculture and fish breeding farms. The Russian Federation reported on a mullet rearing farm set up in 1949 in the Kyzyltas system of limans/lagoons; on zander and roach breeding farms in the Yeisk, Beisug, Akhtarsk limans and in the Sea of Azov. In Ukraine the bed channels were rehabilitated which connected the lagoons to the sea (Molochnyi lagoon in the Azov sea and Tiligulskyi liman). This type of activity was not reported for other countries mainly because coastal lagoons are predominantly situated in the northwestern part of the Black Sea shelf.

International donor organizations displayed little interest for sustaining and supporting the national and regional efforts in the fisheries sector of the Black Sea. And national support to the Activity Center in Constanta, Romania, was not sufficient to fulfill the regional coordinating role in such activities as regional fish stock assessment. Except for the Russian Federation, the national arrangements to achieve sustainability in the fisheries sector were not adequate. FAO and other international organizations were inadequately involved.

For the period 2002 – 2006, the intended goals for conservation and protection of spawning and feeding grounds are (Table III B.6):

Bulgaria	–	none
Georgia	-	Poti – Ochamchiri
Romania	–	Danube Delta Biosphere Reserve and Marine Reserve 2 Mai - Vama Veche
Russian Federation	–	will be defined after adopting a new Bill on Sturgeon Conservation
Turkey	-	during the spawning period fisheries activities on the spawning grounds are not allowed
Ukraine	-	during the spawning period fishery activities on spawning grounds are not allowed

As expected, national efforts should be adequately supported by international organizations.

Actions required:

- ⇒ **To take more actions in establishing close cooperation with FAO and other international organizations, promoting responsible fisheries practices in the Black Sea, and in cooperating with existing projects like the GEF project “Conservation of biodiversity in ecological corridors along the Azov-Black Sea coastline”.**
- ⇒ **To seek international assistance in order to conduct a regional feasibility study for the rehabilitation of the Black Sea lagoons/limans and their use for fish breeding and aquaculture and to support and strengthen national efforts in this direction.**
- ⇒ **To identify the coastal areas able to be introduced into the regional protected areas network; to develop the criteria applicable for the Black Sea.**
- ⇒ **To promote awareness through educational campaigns for the general public on responsible fisheries.**

Article 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 authorizations 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.

National assessments of fish stocks are common practice in the fisheries sector in the Black Sea countries and constitute the basis for issuing national quotas for use of living marine resources and other needs (Tab.IIIB.10).

The problems facing the Black Sea countries are the following:

- Insufficient funding and insufficient capacity of the research fleets.
- Lack of interregional coordination for the assessment of commercial stocks.

The restoration of fish stocks and the capacity to fish on a level compared with 60-80's is on the list of most urgent measures required in the fisheries sector. National efforts, such as the annual projects on exploitation of fishing resources, impact studies and environmental balances in Romania; an intergovernmental agreement between Ukraine and the Russian Federation in the Azov and Black Seas; and the Fish Culture Development Project for flatfish and a Project for the improvement of Turbot Stocks in Turkey, are not sufficient to fulfill these objectives. Therefore a proposal on the restoration of fish stocks and a regional strategy for such restoration should be prepared and international assistance sought for these purposes

The regional and national studies conducted by the Black Sea countries were the integral parts of the BSEP before 1996. These studies produced the recommendations which contributed to the development of the Black Sea Strategic Action Plan (1996). However, since 1996, necessary financial resources to properly address the regional aspects of fisheries and fish species conservation in the transboundary context were scarce. The regional and national reports on the Black Sea fisheries were not published by BSEP although the national reports on fisheries and fish stocks were submitted to the PCU in Istanbul. A similar situation was observed for the Draft Report "Analysis of Fleet Structure and Performance in the Black Sea Fisheries". The Advisory Group on Fisheries and Other Marine Living Resources met for the first time as a subsidiary body to the Convention in July 2001. National support for the activity center Constanta in Romania was not sufficient to fulfill its regional coordinating role.

To the extent possible, national efforts to explore regional aspects of the environmental impacts of fisheries and the impact of the environment on fish stocks and diversity were realized in the Russian Federation through annual national conferences and biannual international scientific conferences.

It is advisable to study the following issues during the next three years possibly in the framework of the GEF project:

- To finalize and publish the regional and national reports on the Black Sea fisheries and the fisheries effects on the environment of the Black Sea;
- To establish a regional data base on the environmental impact of fisheries. The reports shall be submitted to and approved by the Black Sea Commission;
- To take the necessary steps for disseminating this information on the Black Sea fisheries within the region and among interested stakeholders and international organizations;
- To utilize the available national experience and expertise to its full extent, e. g. Russian experience in breeding sturgeons, Turkish experience with breeding the turbot, etc.

The scientific community and experts of the Black Sea region continue their work on fisheries issues and inter relations between environmental factors and the conditions and health of fish stocks. The output of their work is presented in the Annex III "Major Publications of Scientists in the Black Sea Coastal States, 1996-2000". It is advisable to make the fisheries issues a compulsory component of the biannual forum of scientists of the Black Sea coastal states as well as to publish regularly their scientific findings selected on the basis of scientific merits for sustainable development of fisheries in the Black Sea. The Bibliography of Black Sea data should be created and placed on the web page of the Black Sea Commission.

In summary the major gaps in knowledge on the state of fish stocks and populations are:

- Lack of scientifically validated fish stock assessment;
- Lack of scientifically validated maximum sustainable yield;
- Lack of knowledge on the current status and evolution of the benthic and anadromous fish species;
- Lack of knowledge on the hazard of pollution and hot spots effects on fish reproduction;
- Lack of knowledge on fish rearing;
- lack of information on methodologies and techniques for fish stocks assessment.

In addition the insufficiently developed institutional structures on the regional levels resulted in the following gaps in information flow between the Contracting parties:

- Quality assurance and quality control for sampling, processing, analyzing, and interpreting data.
- Lack of regional databases and the lack of a comprehensive overview of trends and processes relevant for fisheries sector.
- Pollution level of major fish stocks.

It is advisable to approach the relevant international organization to explore the possibility of scientific studies on the above issues/gaps. The importance of resolving these issues will increase after establishing the scientifically based regional quotas.

The main problems in fisheries management arise from:

- Insufficiently developed of legal aspects of fisheries management in the regional context
- Lack of coordinated regional stock assessment
- Lack of regionally agreed regulations on fishing, licensing, quotas, conditions of fishing gears, etc.
- Lack of mechanisms to combat illegal fishing
- Inadequate staffing and equipment of fisheries inspectorates
- Lack of regional databases on fisheries
- Insufficiently developed bilateral and multilateral cooperation

Most of measures proposed in the Black Sea Strategic Action Plan still remain valid. The revision of the timeframe to implement those incomplete measures shall be considered by the Commission, including:

- Regional fish stock assessment no later than in the year 2003
- Publication of a regional report on fisheries and the establishment a regional data base on fisheries issues within 2 years
- Development of common methodologies for the assessment of the environmental impact of fisheries on the Black Sea ecosystem, including biodiversity, not later than 2004

The activities provisioned in the BSSAP still are the high priority for the Black Sea States and should be implemented gradually by the states within a newly established time frame and with the financial assistance of GEF, TACIS and IFIs in support of the national efforts to solve these problems.

The priority projects to be prepared and submitted to IFIs should focus on:

- Regional fish stock assessment (Georgia).
- Harmonization of the criteria, measures and regulations for transboundary fish species (25,000 USD/1 year), (Romania).
- Development of recommendations concerning the harmonization in the methods for marine fish stock assessment (30,000 USD/1 year) (Romania).
- Development of sustainable management of the fisheries in the Black Sea: financial support for the Activity Center for Fishing, Constanta - Romania (250,000 USD/2 years) (Romania).
- Periodical organization (once every 3 years) of the common cruises for assessment of the transboundary fish stocks (80,000 USD) (Romania).

International assistance will also be sought for priority projects on the conservation and reproduction of anadromous fish species (sturgeon in particular), development of aquaculture projects, ecosystems conservation and the restoration of lagoon/ limans.

The following are recommended feasibility studies:

- Rehabilitation of small trawlers fleets.
- Promotion of deep freeze processing of raw fish products.
- Pollution prevention projects.
- Artificial breeding of living marine resources.
- Awareness of investment opportunities “in best available” technologies.

Difficulties exist in assessing possible investments in the fisheries sector and the actual investment flow. Romania indicates the minimum investment needed for 10 small tonnage trawlers and one inspection vessel at 3,400,000 USD. The estimates for the rest Black Sea countries have not been calculated.

The investments’ programs of the European Union and the Strategic Partnership of the UNDP and of the World Bank should be approached in order to conduct a feasibility study for the recovery of the fisheries sector, promotion of the responsible fisheries in the region and required investment portfolio. In this sector, public–private partnerships seem to be the most promising option for strengthening regional cooperation (Black Sea development bank, BSEC, bilateral investment projects, etc.).

The development of small and medium size fishing and aquaculture companies could be successful if access to loans/ credits/ grants was available/ affordable (Russian and Turkish experience). The investments/loans programs for companies of this type should be made available in the region. For this purpose the Commission should pursue the creation of revolving funds for small and medium size enterprises via IFIs, including EBRD, Black Sea Development Bank, World Bank, and other relevant financial institutions. The relevant feasibility studies should be carried out and pilot projects in each of Black Sea states should be implemented within a five-year period.

The involvement of the general public in the sustainable development of fisheries is narrowed to NGOs’ campaigns, participation in local projects, etc.

The Advisory Group for Fishing and Living Resources shall focus its activity on the environmental impacts resulting from the fishing activities.

Actions required:

- ⇒ **To adopt and promptly ratify the Fisheries Convention in order to improve the legal basis for improvement of regional cooperation;**
- ⇒ **To coordinate and implement a regional assessment of fish stocks within the next three years;**

- ⇒ **To develop and agree upon the assessment methodologies for fisheries impacts on the environment and the effects of environmental conditions on the biodiversity, stocks, and health of fish populations and other marine living resources in the Black Sea within 4 years;**
- ⇒ **To establish a regional procedure for identification of endangered fish species and to establish a unified criteria for the assessment of endangered fish stocks;**
- ⇒ **To conduct a feasibility study on the economic options of the development of the fisheries sector;**
- ⇒ **To disseminate information on the principles of sustainable fisheries to educational institutions and to the wide communities of fishermen by means of Black Sea Commission Web site and other communication means.**

IV. Biological Diversity Protection

The fragile Black Sea ecosystem, heavily disturbed from the 70-90s, now shows the first signs of recovery. This refers to the populations of the small pelagic fish species, occurrence of some endemic species of flora and fauna, lesser alga blooms, etc. Nevertheless, in the northwestern part of the Black Sea, the concentrations of nutrients are still high and under favorable hydrometeorological conditions could trigger algal blooms and the related undesirable ecological and economical negative effects. There exist a few factors favorable for the rehabilitation of the Black Sea ecosystem and its biodiversity:

- Reduced pollution loads in coastal states that face drastic economic problems and the effectiveness of the EU directives in the basin of the Danube river;
- Concerted environmental policies, strategies and actions in the Black Sea coastal states undertaken in the framework of the Convention on the Protection of the Black Sea Against Pollution. The environmental protection of the Black Sea is included in the priority list of measures in national environmental policies (Tab.IIIB.11; Tab.IIIB.12);
- International cooperation in the framework of the other conventions and international, multilateral and bilateral agreements

Article 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 2000, 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.

The Advisory Group on the Conservation of Biological Diversity (AG CBD), in cooperation with other Advisory Groups, and in the framework of the TACIS Black Sea Funds 1996/1997, prepared the final draft of the Black Sea Biodiversity and Landscape Conservation Protocol and initiated national consultations in order to sign the Protocol during the Ministerial Meeting on June 14, 2002.

Actions required:

- ⇒ **To finalize the Strategy and Action Plan for the Conservation of Biological Diversity in the year 2003**
- ⇒ **To finalize the Strategy and Action Plan for the Conservation of Landscape Diversity that was drafted in the framework of the BSEP in 1995 and to prepare for national consultations in 2004 by the Advisory Group on Integrated Coastal Zone Management and by the Advisory Group on Conservation of Biodiversity**
- ⇒ **To promote implementation of the Strategic Action Plan on Biodiversity conservation**

Article 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.

The Red Data Book on Endangered and Rare species of the Black Sea was published in 1998 in a limited quantity and was not made available to most entities involved in the issues of the protection and conservation of biological diversity and landscapes in the Black Sea. Moreover, this publication presented the experts' opinion while the legal status of the species included in this book was not defined. This book was not

sufficiently discussed and agreed regionally. According to the opinion of members of the Advisory Group on the Conservation of Biological diversity, this book contains some inaccurate information and should be revised and discussed regionally.

The Red Data Book was not translated into or published in any local language of the Contracting Parties. For this reason it is available only to a limited number of scientists and researchers and not to the wider community and general public, although there is an estimated high demand for this book in the Black Sea coastal states.

In order to define the legal status of species that will be included in the Red Data Book, the list of rare and endangered species will be elaborated in a framework of the Protocol on Biodiversity and Landscape Conservation and will form an Annex II to this Protocol. This will serve as a basis for the revised Red Data Book on Rare and Endangered Species in the Black Sea.

Necessary arrangements should be made by the Black Sea Commission and the Permanent Secretariat in order to deliver the Red Data Book to other countries, to create an electronic version of this book and make it available on Internet. The creation and publication of the popular version of the Red Data Book of the Black Sea Species will be crucial for promoting public involvement in the conservation of biodiversity and in the education of school and university students. The expressed need for a popular version of the Black Sea Red Data book will require a simultaneous development of the both versions.

Actions required:

- ⇒ **To revise the Black Sea Red Data Book on Rare and Endangered Species based on the list of rare and endangered species that will form Annex II to the Protocol on the Biological and Landscape Conservation to the Convention on the Protection of the Black Sea Against Pollution, approved by the Black Sea Commission, and to translate this document into national languages in the year 2004.**
- ⇒ **To prepare, publish, translate and disseminate the popular version of the Red Data Book in the Black Sea countries by the year 2005.**

Article 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.

The Black Sea countries imposed a moratorium on the hunting of cetaceans since 1966 (Bulgaria, Georgia, Romania, Russian Federation and Ukraine). These countries reconfirmed the moratorium after the collapse of the Soviet Union. Turkey introduced this moratorium in 1983. Further commitment to the protection of marine mammals was explicitly expressed in the Convention on the Protection of the Black Sea Against Pollution, the Odessa Ministerial Declaration and the Black Sea Strategic Action Plan. However, up to the year 2000, the Russian Federation and Ukraine periodically executed the capture of live bottlenose dolphins that are used for commercial and scientific needs in dolphinarium (Tab. IIIB.13; Tab.IIIB13a)

The UN initiative under the Bonn Convention, by establishing the multilateral Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) was supported and signed/ratified by three Black Sea countries (Bulgaria, Georgia and Romania). The creation of an ACCOBAMS Co-ordination Unit for the Black Sea is foreseen in the frame of the Black Sea Commission (Resolution 1.5 of the ACCOBAMS MOP1, Monaco, 28 February – 2 March 2002). The memorandum of understanding between the Black Sea Commission and ACCOBAMS Secretariat has been signed.

The existing regional legal and regulatory framework seems to be sufficient for the conservation and protection of Black Sea marine mammals (except the monk seal being on the verge of extinction). Its enforcement was assessed as rather successful by the Black Sea coastal states. The existing controlling institutions should monitor the compliance with existing national norms that are yet in need of revision,

improvement and standardization in accordance with appropriate international acts. Nevertheless, due to understaffing, lack of adequate training, and lack of finances for regular monitoring of the conditions of marine mammal populations, and for research and regional assessments, the information on the state of the populations of marine mammals is incomplete and requires a regionally coordinated effort for better management as well as for education of personnel and the general public.

Actions required:

- ⇒ **Establish an Advisory Group on Management of Marine Mammals and convey functions of the ACCOBAMS Black Sea Co-ordination Unit to this Group.**
- ⇒ **Establish a system of ongoing professional training for local authorities.**
- ⇒ **Promote accession to the ACCOBAMS of those Black Sea states that are not already members. .**

Article 62

...

b) Regular population assessments of marine mammals shall be conducted and the first assessment will be completed in 1998. It is advised that these assessments be coordinated by the Istanbul Commission, through its Advisory Group on the Conservation of Biological Diversity.

A regional assessment of the abundance of marine mammals in the Black Sea was not conducted since 1987. From the 1930s-1950s, the population of three cetacean species was estimated at 500,000 or even two million units. The following values for the middle eighties varied between 454,440 (extrapolation of Turkish data) to 55,000-120,000 animals (by assessments of Russian and Ukrainian scientists), however all reported estimates were based on severely biased survey methods and, therefore, were flatly rejected by the Scientific Committee of the International Whaling Commission (1992). Thus, to date, there is no assessment that would estimate, with any degree of accuracy, the number of the cetacean populations on regional level.

Due to the scanty resources of the research institutions involved national studies were limited. A series of boat surveys were conducted from 1995-1998 in the Ukrainian waters off the Crimean Peninsula and in Bulgaria. In 1997 a former nongovernmental research institution carried out monthly observations of cetaceans in the Kerch Strait from a local ferry line. In 1996 the cetacean sightings were recorded in the Marmara Sea, the Bosphorus and the Dardanelles. The joint study of cetaceans distribution and abundance in the Sea of Azov and the Kerch Strait was undertaken in July 2001 by means of aerial line transect surveys conducted by Ukraine and Russian Federation.

Dolphins and porpoises that have washed ashore have been monitored by national cetacean stranding networks organized in Ukraine (1989-1999), Bulgaria (1997-1999), Georgia (1997-1999) and Romania (since 2001). Some efforts in this direction were also undertaken along the Caucasian coast of Russian Federation (1996-1999) and around the Sea of Marmara (1993-1998). Anthropogenic threats and cetacean pathology were studied in the frames of EC/INCO-COPERNICUS project "Estimation of human impact on small cetaceans of the Black Sea and the elaboration of appropriate conservation measures" (BLASDOL, 1997-1999). Bulgarian, Georgian and Ukrainian institutions, in close co-operation with their partners in Germany and Belgium, executed that project simultaneously. According to BLASDOL data and proceeding publications, the lung parasitism complicated by bacterial super infection and outbreaks of morbillivirus disease could be considerable factors of natural mortality in Black Sea cetacean populations. The epidemiology of those pathologies is not clear, and it is unknown entirely how to control the epizootics.

The impact of the pollution on population of marine mammals was not studied enough in the Black Sea, although some papers on POPs and mercury contamination of harbour porpoises were published in the respected scientific journals. A series of analytical reports on cetacean pathobiology was prepared in accordance with the Program for Research, Conservation and Restoration of Marine Mammals in the Black and Azov Seas in August 1999 in Ukraine. In addition, two basic documents were published in Ukraine and were adopted by the national meeting of specialists on cetaceans (Kyiv, 31 March 2001). These were:(a) the

national report “Contemporary state of marine mammal populations in the Black and Azov Seas” and (b) the National action plan for the conservation of Black/Azov Sea cetaceans.

In 2001, a project prepared by NIMRD Constanta, entitled “Conservation of the dolphins from the Romanian Black Sea waters”, was selected for financial support from the European Community, through its instrument LIFE-Nature. One of its objectives is to assess the distribution and abundance of the three species of cetaceans in the Romanian waters. The project will last 3 years and cost about 400,000 Euros.

A project proposal on the monitoring, conservation and management of Black Sea cetacean populations, prepared for all six Black Sea coastal states, has been recently presented at the ACCOBAMS MOP1 and shall be submitted to the GEF Council jointly by the ACCOBAMS Secretariat and the Black Sea Commission. The draft title of this document is: “Black Sea biodiversity restoration and sustainable use of biological resources through regional-based conservation and management of cetacean populations”. This is a 4 year project with an estimated budget of approximately USD 2,000,000 which includes one million from GEF.

An international training course on cetacean monitoring in the Black Sea, managed by ACCOBAMS Interim Secretariat, was carried out in Constanța (Romania) in December 2001.

Actions required:

- ⇒ **To complete the regional assessments of marine mammals in cooperation with ACCOBAMS by 2003-2004.**
- ⇒ **To invite ACCOBAMS to organize training sessions for the experts of the Black Sea coastal states prior to the regional assessment in order to apply unified methodologies and techniques.**
- ⇒ **To conduct a systematic study of the life cycles of cetacean parasites and of the features of morbillivirus infection in order to predict and control mass mortality events.**

Article 62

...

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

The Activity Center on Conservation of Biological Diversity was established in 1996 in Batumi, Georgia. With the aid of TACIS Black Sea Funds 1995/1996 and 1996/1997, the Activity Center drafted the Protocol on Biological and Landscape Diversity, Strategy and Action Plan for Conservation of the Black Sea Biological Diversity. Unfortunately, the necessary leadership and coordination role for regional activities in the above issues was not forthcoming.

The Activity Center did not establish a rehabilitation center for cetaceans in Batumi, Georgia. The necessary investments to organize such a center were estimated at 1.5 Euro. Although this center could be organized in Batumi, a feasibility study is needed to identify the number, size and the most appropriate sites for rehabilitation centers in the Black Sea in cooperation with ACCOBAMS.

National efforts to establish sanctuaries for sick or injured animals of the marine mammals varied from country to country. There are no special protected areas (marine reserves or sanctuaries) for marine mammal conservation in Ukraine or in other Black Sea countries. However, the Ukrainian biosphere and nature reserves, located at the seaside in Dunaiski Plavni, Chornomorsky, Karadagsky, etc., declare protection of cetaceans among other marine species inhabiting coastal waters within the boundaries of the reserves. Still, the total area of these formally protected waters is too small for effective conservation of cetaceans, and the staff of these reserves is in obvious need of specific training on research and rescue techniques of dolphins and porpoises. . The Ukrainian Ministry of Environment had approved a five-year Program for the elaboration of a system for the rescue, rehabilitation and return of sick and traumatized Black Sea cetaceans to their natural environment, and for the creation of a marine mammal rehabilitation center (1993-1997). Valuable scientific and practical experience was accumulated during the five year existence of the Laspi

Marine Mammal Rehabilitation Center. But, this operation was terminated in the early 1999 for lack of funding.

Currently, a total of 12 dolphinariums are functioning along the Black Sea coast. Up to 100-120 bottlenose dolphins and exotic pinnipeds are being kept in those facilities. Since these are really entertainment and research organizations, the dolphinariums do not play an important role as health-improving centers for injured and sick marine mammals. Judging from the dolphinarium on the Bolshoi Utrish Cape (Russian Federation), the project estimated cost several dozen thousand dollars or more, depending on the complexity of the project (prices, duration of reconstruction, number of animals, and so on). However, participants of the Ukrainian-Russian Workshop, "Role of dolphinariums in the conservation of Black Sea cetacean populations" (Laspi, 18-19 October 2001), unanimously underlined the necessity of a gradual transformation of the existing facilities into marine mammal rescue and rehabilitation centers based mainly on the self-financing principle.

Actions Required:

- ⇒ **To integrate the information and to establish an information exchange mechanism on the cetaceans in the framework of the Black Sea Information System.**
- ⇒ **To draft a project proposal for a feasibility study on the needs and placement of the sanctuaries and rehabilitation centers for injured and sick animals and its implementation (by the ACCOBAMS Black Sea Co-ordination Unit and Advisory Group on Conservation of Biodiversity in 2003).**
- ⇒ **To draft the rules and norms of maintenance of the marine mammals in dolphinariums including a system for compliance control in 2004.**
- ⇒ **To strengthen the coordinating role of the Activity Center on Conservation of Biological Diversity allowing the Activity Center to initiate and coordinate implementation of regional projects on the conservation of the Black Sea cetaceans with the assistance of GEF, TACIS and other IFIs.**

Article 62

...

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 Fisheries and other Marine Living Resources, develop a strategy for the reduction of by-catches of marine mammals.

In spite of opinions expressing that during normal fishing operations mammals were rarely seen near the fishing gears, cases of animal deaths do occur - although statistics on the number of dead animals do not exist in the region. As a result, the scope of problem can hardly be evaluated. According to results of a BLASDOL project, bottom-set gill net fishing of turbot in May and June could be defined as the principal human activity exerting a negative impact on the Black Sea population on the harbor porpoise. Based on previous by-catch data (1968-1993) collected mainly in the former Soviet Union, the "net danger index" values have been calculated for turbot and dogfish fishery. They averaged, respectively, 9 and 12 by-caught cetacean animals per 100 km of nets per year.

Generally, dolphins were by caught in fixed nets, sometimes in bottom and pelagic trawls. Precautionary measures could be developed for fishing practices by using different fishing tools in the Black Sea. Acceptable fishing practices applied in the Black Sea countries to avoid the by-catches of mammals imply the use of suitable fishing gears: midwater trawls, small-meshed bottom nets, and purse nets. No acoustic deterrent and harassment devices used in Black Sea countries for the minimization of negative cetacean-fisheries interactions.

Strategies to avoid by-catches of marine mammals include: providing information at the local level, better control of fishing gears, education of fishermen, and capacity development of local controlling bodies.

In cooperation with the ACCOBAMS Black Sea Co-ordination Unit, the Advisory Group on the Conservation of Biological Diversity and Advisory Group on Fisheries and other Marine Living Resources should:

- Prepare recommendations for the ban of bottom-set gill net fishing during May-June in coastal waters inhabited by harbor porpoises. This measure would have a positive effect on turbot stock spawning within the same period. Thus, the protection of cetaceans will lead to conservation of a valuable fish species.
- Elaborate new turbot fishing regimes and recommend fishing gear less dangerous for small cetaceans than the currently used bottom-set gill nets.
- Promote the development of turbot mariculture as an alternative solution of the problem.
- Monitor numbers of stranded and by-caught harbor porpoises and dolphins. This will provide surveillance over Black Sea cetacean mortality and a new source of scientific information on cetacean ecology, biology and pathology. The entire Black Sea coast could share the common methodology and experience obtained in the BLASDOL project.
- It seems necessary to extend regular collecting of stranding/by-catch data to the Sea of Azov (Russia and Ukraine). This Sea is known as the most important breeding, calving and feeding area of Black Sea harbor porpoises and as the sea with intensive fishery and pollution.
- Develop national cetacean stranding/by-catch networks in close co-operation with governmental bodies (including ministries of environment and fish protection services of Black Sea countries), research institutions and non-governmental organizations interested in conservation of marine biodiversity. The role of NGOs and the mass media could be very important due to their influence on public awareness and on environmental education.
- Organize training workshops on cetacean research and conservation to disseminate scientific knowledge, methodology and the BLASDOL experience among specialists and voluntary members of national stranding/by-catch networks. The creation of a Pan-Black-Sea cetacean network using common methodologies and database should be the goal of these meetings. The Black Sea Commission (Istanbul) should coordinate this process through the ACCOBAMS Co-ordination Unit.

Actions required:

- ⇒ **To direct regional efforts to establish common methodologies to avoid by-catches, etc.**
- ⇒ **To conduct a regional assessment of the state, trends and health of the population of the Black Sea mammals within the three years period.**
- ⇒ **To jointly draft a proposal for a feasibility study on regional rehabilitation centers for cetaceans by the AG CBD, AG FOMLR and ACCOBAMS in order to secure international funding to implement the above task.**
- ⇒ **To approach ACCOBAMS to deliver the necessary training to the institutions and management involved in the conservation and protection of marine mammals. Popular educational material should be developed, translated into local languages and disseminated among the communities of the Black Sea fishermen and the general public.**
- ⇒ **To strengthen co-operation with ACCOBAMS through mutual harmonization of the ACCOBAMS activities with measures undertaken by the Black Sea Commission. Existing research teams in six riparian countries, in co-operation with NGOs and experienced western partners, can solve most problems concerning the conservation and management of Black Sea cetaceans by means of a GEF medium-sized project (4 years; about 2 million dollars).**

- ⇒ **To prohibit the use of bottom-set gill nets for turbot during May-June in coastal waters inhabited by harbour porpoises. This measure has a positive effect on turbot spawning in May and June. Thus, the protection of cetaceans will lead to the conservation of valuable fish species.**
- ⇒ **To develop new turbot fishing regimes and new stipulate fishing gear less dangerous to small cetaceans.**
- ⇒ **To promote the development of turbot mariculture as an alternative solution of the problem.**
- ⇒ **To study parasite life cycles and the features of morbillivirus infection in order to predict or prevent epioozotia of cetaceans.**
- ⇒ **To monitor the number of stranded and by-caught harbor porpoises and dolphins. This measure of permanent surveillance over Black Sea cetacean mortality would serve as a source of new scientific information on cetacean ecology, biology and pathology. Common methodology and experience obtained in BLASDOL project should be spread to the entire Black Sea coast.**
- ⇒ **To initiate the regular collection of stranding/by-catch data to the Sea of Azov (Russia and Ukraine) because this Sea is known as the most important breeding, calving and feeding area of Black Sea harbour porpoises and as a sea with intensive fishery and pollution.**
- ⇒ **To develop national cetacean stranding/by-catch networks based on the close co-operation with governmental bodies (including ministries of environment and fish protection services of Black Sea countries), research institutions and non-governmental organizations interested in conservation of marine biodiversity. The role of NGOs and the mass media could be very important due to their influence on public awareness and environmental education.**
- ⇒ **To promote accession to the Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) to those Black Sea States not currently participating in this agreement.**

V. Protection of Habitats and Landscapes

Article 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.

The measures of biodiversity conservation, habitat and landscape protection are ranked high on the list of the priority measures for national action plans and on the Commission work plan. These actions are strongly supported by the global, European and regional conventions, e.g. Ramsar Convention, Convention on Biodiversity, European Convention on Landscape Diversity, and bilateral and multilateral agreements that played an important role in promoting the establishment of many Black Sea protected areas and habitats. The coordination of these activities under the various conventions and agreements was in many cases inadequate.

Actions required:

- ⇒ **To establish close cooperation with and between participants and goals of the international agreements and conventions to which the Black Sea States are the Contracting Parties.**
- ⇒ **To study the possibility of implementing twinning projects with other conventions of relevance.**

Article 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.

The IUCN and RAMSAR criteria are regionally recognized and applied for establishing national and transboundary protected areas that include:

- Special habitats for the Black Sea species.
- Nursery and breeding places (wintering).
- Uniqueness of habitats/landscapes.
- Transboundary migrations routes.

The general trend toward the protection of biodiversity, valuable nature landscapes, and habitats is shown by the significant expansion of protected territories, both marine and terrestrial. However, of the 14 regionally important protected areas proposed in the framework of BSEP biodiversity study, none were established between the years 1996 – 2000 (Tab. IIIB.14).

Actions required:

- ⇒ **To revisit and update the list of protected areas of regional importance in the Black Sea coastal states.**
- ⇒ **To seek international assistance to establish new protected areas, in particular marine protected areas, of regional and transboundary importance.**

Article 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:

As tools for conservation, protection and management of the habitats and landscapes, the following policy measures are widely applied in the Black Sea coastal states (see Tab. IIIB.14; Tab. IIIB.15):

- Including biodiversity conservation in the list of priority environmental policy measures (all Black Sea coastal states).
- Improving the existing framework legislation on the conservation and protection of the biodiversity and habitats.
- Developing and implementing national programs and actions plans to address the biological and landscape diversity conservation issues.
- Promoting compliance with EU directives for the accession countries.

For the conservation and protection of landscapes and habitats the following management measures are applied in the Black Sea coastal states:

- Improvement of national regulations and rules in harmony with international conventions, policies and criteria, and EU directives.
- Creation of land reclamation plans for prospective conservation purposes.
- Improvement of management of protected territories and species.
- Identification and establishment of the marine/ terrestrial transboundary ecological corridors.

The main approach is the preparation and implementation of management plans for each protected area in accordance with its particular features and pressures. Taking into consideration the economic transition period in all Black Sea states, an opportunity exists to significantly expand protected areas if the IFIs and other donors render sufficient assistance.

The economic tools that address conservation issues are usually fiscal and include fines, payments for damage, etc. Motivational tools are not well-recognized practices. The economic incentives applied in some Black Sea coastal states, such as tax exemption (Russian Federation), and direct support to the mountainous villages and payments for low rate of fertilizer application (Turkey), are not widely implemented in the region. Involvement of the private sector in conservation and protection of the biodiversity and landscapes is promoted in Turkey. Some cooperation, mostly on the local level is known for the Russian Federation. In Georgia, Romania, and Ukraine, public-private partnership is not developed to the necessary level.

Actions required:

- ⇒ **To develop criteria and guidelines for establishing protected marine areas taking into consideration the specific features of the Black Sea ecosystem**
- ⇒ **To develop and implement economic incentives in the conservation and the protection of the biodiversity and landscapes and to demonstrate their benefits in a number of pilot projects in the Black Sea coastal states**
- ⇒ **To pursue the involvement of the private sector via public-private partnerships in biological and landscape conservation and protection**

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 mid-1998, 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

The conservation of biological and landscape diversity is an integral part of the national environmental priorities in each of the Black Sea countries. The projects and measures for these purposes are included in both national and international projects. On the national level, significant efforts are allocated in order to ensure the necessary protection of the landscapes and habitats. (Annex III).

The Draft Protocol for Biological and Landscape Diversity Conservation was elaborated by the Activity Center and electronically discussed by the Advisory Group. Final consultations in the Black Sea countries were carried on with the target of signing the document on June 14, 2002 –the date of the Meeting of the Ministers of Environment of the Black Sea States.

The first draft of the Black Strategy for Landscape Conservation was prepared in the framework of BSEP in 1996 and the AG CBD has drafted the Black Sea Biodiversity Conservation Strategy and Action Plan in 2000.

Actions required:

- ⇒ **To finalize and adopt the regional strategy and corresponding action plan for landscape conservation based on the draft “Strategy on Landscape Conservation, 1995”. AG CBD and AG ICZM should jointly complete the activity by the year 2005.**
- ⇒ **To finalize and adopt the Regional Strategy and Action for Biodiversity Conservation by the year 2005 in compliance with the relevant Protocol in 2004.**
- ⇒ **Promptly ratify and implement the Protocol for the Biological and Landscape Diversity Conservation.**

b) Each Black Sea state, by 2000, shall endeavor 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.

Legal and regulatory instruments as well as institutional arrangements for the conservation and protection of biological and landscape diversity are adequately developed in the Black Sea countries. Environmental authorities play a coordinating role in cross sectoral programs for environmental protection because they usually have specialized departments or directorates for management of specially protected areas which correspond with local authorities, and which maintain close links with forestry, fisheries, and other authorities that are involved in the management of the living resources. The most common tools for management of specialized protected areas are management plans developed for each special protected area in accordance to international procedures (Turkey) or with national procedures (Bulgaria, Georgia, Romania, Russian Federation, Ukraine). A few management plans were developed in the framework of GEF pilot projects (Russian Federation). The assistance of GEF was acknowledged by the Black Sea states.

Nevertheless the criteria and procedures for establishing marine protected areas are not adequately developed.

Actions required:

- ⇒ **The Black Sea Guidelines on management plans regulating the protection, conservation, development, control, financing, education, public awareness etc., shall be prepared by the Advisory Group on Conservation of Biological Diversity.**
- ⇒ **Harmonized procedures for establishing marine protected areas.**
- ⇒ **A feasibility study for marine protected areas**

The public is strongly supportive of the conservation of the biological and landscape diversity and is actively participating in the decision making process. Bulgaria, Georgia, Romania, and Ukraine are contracting parties to the Aarhus Convention and through this instrument interact with general public, NGOs, and concerned individuals. Many of these groups are well organized.

There are many campaigns dedicated to biodiversity conservation, including Black Sea Day, started in 1996. In Romania, at the inter-district competition “Me and the Environment”, 16 projects on measures for establishing a reserve were presented. These included the impressive winner “To be or not to be a Reserve-the area 2 May- Vama Veche” proposed by the NGO “Mare Nostrum”. (The procedure for declaring this marine area as reserve is ongoing in the frame of WEPM and NIMRD).

In the Black Sea states, the most common procedures for public involvement in conservation issues include the following:

- Dissemination of ecological information (through booklets, leaflets, posters, etc.).
- Organization of awareness campaigns on occasions such as, Black Sea Action Day, Wetland Day, Earth Day, Environmental Day, Waters Day celebration, or special events for presentations of rare and endangered species from the Black Sea.
- Launching of competitions for small projects dealing with the protection of marine biodiversity against the effects of population, eutrophication, fishing and tourism, as well as the identification of some solutions for the elimination of ecological risks; participants are scholars and students. Planning of the protected territories is often carried out in public hearings. .

Another practice is implemented in Georgia. Socio-economic consequences are considered in the framework of a feasibility study, though this has not yet been done for the Borjomi-Kharagauli and Kolkheta National Parks .

Although no partnership protocols have been signed between governmental agencies and NGOs in Romania, the local and central authorities for the environment participated in many NGOs actions. This indicates the development of such partnerships in future.

Only in Ukraine there is the NGO Board closely affiliated with the Ministry of Environment.

In the Russian Federation, regional and local levels of the public are involved in discussions and public hearings on conservation projects.

Article 65

Each Black Sea state, where appropriate with the support of bilateral or multilateral agencies, shall ensure that the authorities which manage conservation areas are adequately staffed and that the necessary resources are available to them

With the exception of the Danube Biosphere Reserve in Romania, national authorities that manage the conservation areas are understaffed and poorly equipped. The main constraints are due to insufficient financial resources for these purposes.

As the result, full enforcement of the environmental conservation legislation and regulatory tools is problematic. The lack of funds also effect professional training, in particular, the development of management plans for protected territories, payments for use of natural resources, ecological norms and permits, etc.

Actions required:

- ⇒ **To establish a system for ongoing professional education and training.**
- ⇒ **To seek international assistance for strengthening local authorities in the conservation area and to promote the establishment of transboundary protected areas.**

Article 66

Public awareness campaigns, including programs for schools, local communities, and natural resource users in the conservation areas shall be developed. Such campaigns, where appropriate, will be coordinated at the regional level

An important component of conservation strategy is environmental education. At the same time a shortage of public outreach and educational materials on conservation and protection of biological diversity and landscapes in national languages exists. There is a compelling need for the development and delivery of effective biodiversity education and awareness programs by:

- Evaluating and monitoring the level of public understanding and knowledge regarding biodiversity conservation and the sustainable use of biological resources in order to design and target effective education and awareness programs.
- Integrating themes and messages about biodiversity conservation and the sustainable use of biological resources into the formal educational curriculum.
- Raising awareness towards biodiversity conservation and sustainable use of biological resources by building on existing interpretive programs in national parks and other protected areas, and by raising awareness at libraries, museums, zoos, aquariums and botanical gardens.
- Strengthening coordination among educational institutions, government departments, museums, zoos, aquariums, botanical gardens, the private sector and other organizations.
- Providing opportunities for professional development for those involved in teaching environmental education.
- Creating educational materials that emphasize measures that can be taken to prevent or reduce impacts on ecosystems and biological resources.
- Promoting public awareness of biodiversity issues, conservation and sustainable use requirements; by indicating changes in the state of biodiversity and by relaying improvements in natural resource management practices through periodic reports, fact sheets, electronic information systems and other communication material and methods.

Actions required:

- ⇒ **To implement and present national and regional campaigns for the protection of endangered species.**
- ⇒ **To develop overall educational programs with integrated themes and messages about biodiversity conservation and the sustainable use of biological resources that can be adopted into the formal educational curriculum; building on existing interpretive programs in national parks and other protected areas, at libraries, museums, zoos, aquariums and botanical gardens; strengthening coordination among educational institutions, government departments, museums, zoos, aquariums, botanical gardens, private sector and other organizations.**

As immediate actions, the following projects could be supported or initiated by GEF:

- i. Preparation, publication and dissemination of the popular version of the Red Data Book.**
- ii. Initiate the “Year of Biological Diversity in the Black Sea”.**
- iii. Establish summer schools on Biodiversity for university and high school students.**

- ⇒ **To better coordinate regional and national environmental projects pertaining to the recovery of the Black Sea ecosystem in order that the concerted actions make a difference in the Black Sea environment. Only in this way can the BSSAP become an effective document on conservation and rehabilitation of the Black Sea ecosystem.**
- ⇒ **To incorporate constant biodiversity monitoring in the BSIMAP on testing areas according to unified methodological basis.**
- ⇒ **To develop a proposal for a feasibility study on the establishment of the rehabilitation centers for the conservation of the marine mammals and for the study of their population.**

A. Sustainable Human Development

a) Environmental Impact Assessment

Article 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.

Although the importance of the issues covered by the EIA Convention is unquestionable, the Convention on the Environmental Impact Assessment was ratified only by Ukraine in 1999. No regional activities were undertaken in the framework of the Black Sea Commission between 1996 and 2001.

Criteria for environmental impact assessments and environmental audits compulsory for all private and public enterprises were not regionally agreed upon. On the national level in Turkey, all power plants with a capacity over 0.150 MW and water storage facilities above 100 000 000 m³ or with a reservoir area above 15 km², are subjected to the Environmental Impact Assessments in the project phase.

Environmental impact assessment is fully integrated in the national legislation and is mandatory for new projects. The environmental audit that did not receive the same level of development is not compulsory in the Russian Federation and Ukraine.

The environmental audit shall be promoted in the Black Sea coastal states.

The strategic environmental assessment is a part of national policies in all Black Sea states except for that of Turkey.

As one of the most important activities, the environmental impact assessments were or will be conducted in the energy sector (For the most important energy projects subjected to environmental impact assessment *see Table IIIC*).

On the regional level these activities were overlooked and did not receive due attention and sufficient support from the Contracting Parties or from the international donors.

In most cases the major responsibility for environmental impact assessment rests with environmental authorities (Georgia, Russian Federation, Turkey, and Ukraine. In Romania, these responsibilities are delegated to the National Institute for Research and Development for Environmental Protection (ICIM Bucurestin.) In Turkey, the Ministry of the Environment established the Investigation and Assessment Commission that has members from related public organizations, universities, chambers and NGO'S. The

financing of EIA depends upon its purpose and is usually accomplished with enterprise or company money. An independent impact assessment could be carried with the financial resources of the environmental authorities or other sources if the EIA is called for by the public or by the government. Typical fund distributions are presented for Turkey. (Tab. IIIC. 4 and Tab.IIIC.5)

The practice of public hearings, local and nation wide discussions and other ways of informing the local population and the general public about new projects is common for all Black Sea coastal states.

Actions required:

- ⇒ **To pursue close cooperation with the EIA Convention in order to bring the best experience to the Black Sea region.**
- ⇒ **To promote the establishment of harmonized environmental criteria and objectives in order to facilitate the implementation of EIA for large transboundary projects, such as transboundary energy projects, oil terminals, etc.**
- ⇒ **To organize an ad hoc technical group on EIA and to conduct a series of regional consultations, workshops, seminars, etc, on the strategy and plans for implementing EIA in the transboundary context.**

b) Integrated coastal zone management

Article 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.

ICZM is a governmental process and consists of the legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental (including social) goals and are made with the participation of those affected (Noordwijk Guidelines, 1993).

The value of coastal recreational resources and the vulnerability of the fragile coastal ecosystems need special attention from the environmental standpoint as well as from legal provisions in order to successfully protect and sustainably manage them. Currently, the coastal zone is legally defined in Bulgaria, the Russian Federation and Turkey. In Georgia, Romania and Ukraine the definition of the coastal zone is under development.

Adequately developed legislation and a clearly defined institutional structure for integrated coastal zone management is lacking both on the national and regional levels. Integrated Coastal Zone Management cannot therefore be successfully implemented in the region although some ICZM components are widely used or are being piloted in Black Sea countries, e.g. in the Russian Federation as part of its administrative system. The implemented pilot projects on ICZM in Krasnodar Province, the Russian Federation, and in the Donetsk oblast of Ukraine, were supported by Black Sea TACIS Funds 1995/1996 and 1996/1997. In addition, the "Environmental Code of Conduct in the Coastal Zone" was drafted with support of this project and in cooperation with the Activity Center on Development of Common Methodologies for Integrated Coastal Zone Management, Krasnodar, Russian Federation. In Ukraine the development of the Law on Coastal Zone Management is included in the National Program on the Protection and Rehabilitation of the Black and Azov Seas.

Actions required:

- ⇒ **Promote the development of national legal and institutional frameworks for implementing the ICZM principles in all Black Sea coastal states.**

⇒ **Develop a set of practical recommendations for local authorities on the principles and methodologies of ICZM and make them available, in local languages, to the communities and stakeholders of the process.**

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 December 1998, 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.

The Draft Regional Strategy for Integrated Coastal Zone Management was elaborated in the framework of the Black Sea Environmental Program. This Draft was discussed in Romania and Ukraine. Unfortunately it has not been translated into local languages and has not been adopted by the Commission on the Protection of the Black Sea Against Pollution. It therefore needs further development and improvement. In the Russian Federation the national strategy for integrated coastal zone management has been elaborated. The methodology was tested as a pilot project in the Russian Federation (Krasnodar Kray) and Ukraine (Donetsk oblast) in the framework of the TACIS Black Sea Funds 1996/1997 Project. Except in Turkey, where the ICZM is wholly implemented and included as a special chapter in the Black Sea National Action Plan and in the Draft Local Agenda 21, the integrated management of the coastal zone did not receive adequate attention. It is still high on the agenda in the Black Sea coastal states due to the rapid development in the privatization process and to socio-economic changes in countries with transitional economies. Institutionally, integrated coastal zone management is not developed in the Black Sea states, except in the Russian Federation where the Inter sectoral Commission on Productive Forces was established. It also was institutionalized in a pilot project on the local level in the Donetsk oblast, Ukraine.

Information on the results of the pilot projects, the Turkish experience and other activities were not disseminated regionally, and experiences were poorly shared among the Black Sea states.

Actions required:

- ⇒ **Revise, upgrade and approve the Regional Strategy for Integrated Coastal Zone Management by 2004.**
- ⇒ **Organize a seminar on the results of implementation of pilot projects for the Black Sea countries in 2003.**
- ⇒ **Make available, for regional purposes, the best results of the TACIS Black SEA Funds projects in 2003.**

b) Each Black Sea coastal state shall endeavor 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.

The legal tools to implement integrated coastal zone management are scattered through different laws and sectoral regulations (Romania), embedded in presidential decrees and governmental directives (the Russian Federation), or fully developed (Turkey). The provisions for the implementation of integrated coastal zone management and for the development of the necessary legal tools for its implementation are provisioned in the National Program on Protection and Rehabilitation of the Black and Azov Seas in Ukraine.

The complexity of the issues requires the time necessary for the development of legislative acts, nationwide discussion and approval of the laws by the Parliaments; therefore the incorporation of the approaches of the

integrated coastal zone management into the practical work of the existing institutional structures could be beneficial for the Black Sea region at this stage.

Actions required:

⇒ **Promote the development of national legislation for implementing integrated coastal zone management in the Black Sea Coastal States.**

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.

Due to the absence of the necessary legal tools and fully developed institutional structures, existing inter sectoral committees, to the some extent, play the role of the inter-sectoral committee on integrated coastal zone management, namely:

Bulgaria	-
Georgia	-
Romania	- The inter-ministerial commission named "LITORAL" was established by governmental decision no 108/1999. This commission undertakes the role of the ICZM network and has specific competencies regarding the sustainable use and protection of coastal resources and regarding the improvement of ecological balance in coastal areas.
Russian Federation	- Inter Sectoral Commission on Productive Forces, established in 19???
Ukraine	- Inter Sectoral Commission on the Implementation of the National Program on the Protection and Rehabilitation of the Azov and Black Seas; on the local level in Donetsk through the TACIS pilot project.

Article 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 1998. 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.

Costal erosion, including coastal abrasions, landslides, etc. that could cause significant economic losses is more relevant for the west and north coasts of the Black Sea. In the south (Turkey), the driving force of coastal erosion is surface runoff from the steep mountainous terrains that causes land slides.

As a possible cause of land erosion, deforestation does not play a significant role in the Black Sea region (Tab. IIIC.6). There are no indications of a trend to deforest the coastal regions of the Black Sea. In most cases, quantitative data concerning forest areas in the Black Sea costal zone, for the period 1996 – 2001, were not reported. Turkey has the Black Sea Region's richest area in forests (forests cover 1.842.395 hectares, this is 26.15% of total area of Turkey, 46.7% of the region, in the year 1997). Since there is only minor clear cutting for agricultural purposes, deforestation does not cause a problem for the Black Sea region in Turkey.

The information available in the Black Sea Commission on erosion issues is scarce and still needs a special study. Influenced by hydraulic conditions, climate changes and other factors, the economic and social losses could be significant. The development of common methodologies for regional surveys on costal erosion and

land degradation is still pending and must be addressed with a proposal prepared by the Activity Center on the Development of Common Methodologies for Integrated Coastal Zone Management.

In the last 30 years, coastal erosion increased, mainly due to economic and industrial development in the Danube hydrographic basin and in the coastal zone. Also, harbors developments, such as the Sulina jetties, the Midia harbor extension dikes, and the Constanta harbor, act as barriers to the long shore currents running from north to south and changes the local hydraulic conditions. Today, erosion occurs along 60-80% of the Romanian coast. This new coastal configuration, combined with a lessening of sediment loads, contributed to the disturbance of the near shore sedimentary processes and has resulted in increased erosion of the coast as abrasion became stronger. Hydraulic conditions lead to an excess of net freshwater inflow, resulting in land slides, sedimentation of wetlands, an increase in the salinity of soil and an acceleration of coastal erosion.

Actions required:

- ⇒ **Organize regional training sessions on the use of the Geographic Information System that can significantly contribute to better use of data to ensure proper data input and the elimination of overlapping information flow.**
- ⇒ **Develop and submit a project proposal to the IFIs for comprehensive studies on regional coastal erosion and land degradation and on innovative measures for coastal protection.**
- ⇒ **Organize a series of workshops on coastal protection measures for the Black Sea coastal states.**
- ⇒ **Explore key coastal issues at local and regional levels and identify potential solutions through cooperative coastline management approaches.**
- ⇒ **Prepare, approve and implement a Regional Beach Management Plan in order to promote beach preservation and sustainable development of the coastal zone.**
- ⇒ **Seek ways and means to overcome financial constraints in combating coastal erosion in the Black Sea coastal states.**
- ⇒ **Promote the acquisition of a Coast Base Project – The Black Sea Virtual Coastal and Marine Warehouse, a system for integrated coastal and marine information search and access.**
- ⇒ **Promote COAST 3D morphodynamic field experiments, including coastal erosion, regular monitoring and targeted counter measures.**
- ⇒ **Implement a series of demonstration projects for wetland protection in the framework of the GEF Black Sea Ecosystem Recovery Project.**
- ⇒ **Promote public education and awareness on the causes and effects of coastal erosion.**

c) Development of sustainable aquaculture and tourism

Article 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 1999. It is advised that 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

The state of the aquaculture sector in the Black Sea and proposals for its future development were presented in the report “Marine Aquaculture in the Black Sea Region, 1995 (Current Status and Development

Options)”. This study, undertaken in the framework of the Black Sea Environmental Program, also included needs assessment for investments. Additional support was given through PHARE/TACIS Funds in 1995/1996 to the Activity Center, Romania, and to the Ukrainian Research Institute on Fisheries and Oceanography in Kerch, Crimea. Commercial lines for the production of mussels and oysters were installed in Constanta, (Romania), Kerch (Ukraine) and Taganrog (Russian Federation) as pilot projects with TACIS/PHARE Black Sea Funds 1995/1996. Although initiated, the activities were not finalized; the experience was not successful in spite of the need for such projects. Poor dissemination of experiences gained resulted in the loss of feedback and affected sustainability of the regional activities. Feasibility studies on the national level were not carried out. As a matter of fact, the current status of aquaculture is difficult to assess in the regional context. In spite of the assistance rendered, no visible trend in the number of aquaculture enterprises was reported for the Black Sea coastal states except in Turkey where their numbers increased to 148 compared to 1996 figures. The follow up of recommended actions was inadequate (Table IIIC.1, Tab. IIIC.2; Tab.IIIB.9).

The marine hatchery in Trabzon (Central Fisheries Research Institute) is the latest and most developed project. It was founded under the project-type technical cooperation between the Ministry of Agriculture and Rural Affairs and JICA (Japan International Cooperation Agency) to develop hatchery technology for turbot larvae production. The project, started in April 1997, will continue for five years..

During the first four years of the project,, vehicles, machinery and equipment, costing about 1.8 million USD have been donated to the Institute by JICA,. At the same time, the Ministry of Agriculture and Rural Affairs has spent 937 000 USD for that project.

From 1996 to 2000 the following studies were conducted in the field of aquaculture: upgrading of biotechniques in the breeding and propagation of aquaculture objects; the formation of remount-brood stocks; the prevention and treatment of diseases; the effect of anthropogenic factors (including pollution) on aquaculture objects; genetic studies; and the effect of aquaculture on the environment.

Certainly research should continue on the genetics and selection of aquaculture objects, new technical equipment, management and marketing, and on food and feeding, prevention and treatment of diseases, and the effect of aquaculture in the environment.

Although the other countries did not respond, no international projects for aquaculture development are known to be implemented in the Black Sea.

The economic incentives, such as tax exemptions for ecologically clean technologies, are sometimes included in the legislation of the Black Sea countries. These economic tools are not used in the fisheries sector. Economic incentives to promote aquaculture development have not been applied in, nor do the Black Sea countries report them. However, the merits of economic incentives can be demonstrated by a number of pilot projects supported by IFIs.

At least four projects were initiated in Russia: “Industrial Aquaculture” and “Mariculture of Kuban” are financed from the State Budget; the projects “The Black Sea Mollusks” and “Flounders” were launched but stopped due to lack of appropriate legal and judicial basis.

The development of adequate legislation and regulatory bases for aquaculture development remains one of the pressing issues in the Black Sea countries. The economic potential of aquaculture is not realized to its full extent.

The 50% growth in the total production by aquaculture enterprises in Turkey is the opposite of the decline of outputs of the Russian aquaculture enterprises started since 1998 for some external reasons. No meaningful production of the aquaculture sector was reported by other Black Sea states. Taking into account the inadequate development of legal and regulatory tools for aquaculture in the Black Sea states, the development of the Aquaculture Industry Code of Practice or an alternative code has not been initiated in the Black Sea countries. None of these countries and nor any projects or programs has been dealt with the issue. As an exception, the FAO Code of Conduct for Responsible Fisheries (Article 9 – aquaculture development) is being implemented in Romania. The preparation of similar regional recommendations is necessary.

Commonly accepted technologies are used including: the” long-line” system for mussel cultivation (Romania and Ukraine) and the fish reproducing plants, ponds, cages (the Russian Federation and Turkey). The environmental impact assessment for aquaculture projects is compulsory in all Black Sea States.

With the exception of Turkey, environmental norms for aquaculture development are still under development in most of the Black Sea countries (Tab. IIIC.8).

Accession to the European Union implies implementation the EU Directive on Shellfish by Bulgaria, Romania and Turkey. Taking into account the harmonization between EU and non-EU countries, the development of regional environmental criteria for aquaculture is becoming one of the important issues for the Black Sea countries.

Potentially, aqua culture enterprises may present threats to the indigenous species which imply: biodiversity disturbance, pollution with pesticides, antibiotics, and other chemicals used in aquaculture technologies. Keeping in mind the possible environmental risk of aquaculture enterprises, they shall be subjected to environmental impact assessment according to the enforced environmental legislation. One aquaculture farm was subjected to EIA in Romania. To maintain an environmentally sound aquaculture development an EIA (Environmental Impact Assessment) should be carried out on sites where fish farmers applied for licenses in Turkey. Similar requirements exist in the rest of the Black Sea states.

Actions required:

- ⇒ **To conduct regional feasibility studies on aquaculture development and potential risk from aquaculture on indigenous biota of the Black Sea.**
- ⇒ **To develop aquaculture specific environmental quality criteria.**
- ⇒ **To improve the investment climate, to attract low-interest bank credits, tax exemptions, and to implement other economic incentives, for specified terms depending on the aquaculture species, the technology used, power consumption etc., in order to promote the development of aquaculture.**
- ⇒ **Bearing in mind the importance of aquaculture for sustainable development of the Black Sea coastal areas, as well as the opportunities to use aquaculture species for the improvement of the quality of the coastal conditions due to new technology of using mussels cultivated in polluted zones for medical purposes, a regional feasibility study should be conducted with assistance of FAO and WHO organizations.**

Article 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 is given careful consideration.

Although considered environmentally sound, aquaculture technologies could cause disturbance of indigenous species, be a source of fish diseases and a genetic hazard. Therefore, an adequate set of regulatory norms should be developed and, control and monitoring systems should be set up. Such systems do not exist. The following shows what if any guidelines are used:

Bulgaria	not responded
Georgia	not responded
Romania	substances that could cause the environmental impact are not used in the aquaculture sector, the EU Directive on shellfish
Russia Federation	quality standards adopted for the marine environment are applied
Turkey	Name and concentration of compounds which are applied to control disease in the aquaculture sector are presented Annex II
Ukraine	not responded

The aquaculture legislative and regulatory framework did not receive proper attention on the national or regional levels. The Black Sea countries reported no bilateral or multilateral cooperation in the aquaculture sector, although this could be a potentially important tool for accelerating development of aquaculture.

No exotic species are cultivated in the Black Sea other than gray mullet. Successful introduction of gray mullet and its increasing importance as a fish resource could be given as a positive role of aquaculture. At the same time the long-term impact on the ecosystem of the Black Sea can not be predicted at this stage. However, the unintentional introduction of *Mnemiopsis leidye* (in 1989) with ballast waters demonstrated the devastating effects of biological pollution. Development of genetically modified organisms could impose an additional threat to the Black Sea ecosystem and undermine its resources.

Fish species, particularly sturgeon, rainbow trout and turbot are main species intended for commercial culture. Although wide spread commercialization of the turbot culture needs some time, the studies on mariculture of the former species should be encouraged. The major problems that should be addressed are:

- High summer temperature
- Skipping the experimental and pilot scale studies before starting commercial investments
- Lack of sheltered sites and suitable technology for the region and alternative culture strategies
- The main factor constraining the rainbow trout mariculture is the high summer temperatures. It is possible to partly overcome this problem by developing alternative production strategies.

An assessment of needs for regional training events in the Black Sea is rather high. The following subjects should be addressed with FAO assistance in initiating and conducting these regional trainings:

- Fish seed production for marine species
- Mariculture technologies
- Hygiene and sanitation
- Fish food resources

Cooperation with the private sector, in particular for the development of local and international fish markets and fish processing, shall be pursued.

The involvement of the public and its awareness on the merits of aquaculture is low in the region. The commission should undertake the necessary steps in order to inform the general public on the merits of aquaculture development and raise public awareness concerning the associated risks.

Actions required:

- ⇒ **Agree upon and introduce common methodologies for EIA and regionally agreed environmental criteria in the aquaculture sector by the year 2005.**
- ⇒ **Promote the preparation of national aquaculture actions plans.**
- ⇒ **Establish Black Sea environmental objectives taking into account EU standards.**
- ⇒ **Facilitate information transfer from government and academic institutions to producers**

- ⇒ Assist the Black Sea coastal states in conducting feasibility studies for the aquaculture sector to attract the necessary investments, in particular for small and medium size enterprises.
- ⇒ Seek financial assistance for setting up a regional reproduction and release centre for the autochthonous species – 5 years - 2 million USD
- ⇒ Improve national legal and regulatory framework
- ⇒ Promote regional, bilateral and multilateral cooperation in the aquaculture sector
- ⇒ Promote development of industries to produce necessary equipment for the aquaculture sector and to promote the best available technologies
- ⇒ Agree on common environmental standards and objectives for the aquaculture sector
- ⇒ Strengthen public-private partnership and seek the support of the IFI for small and medium size enterprises
- ⇒ Develop an Aquaculture Industry Code of Practice and harmonize its basic principles with EU legislation

Article 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 1999. It is advised that 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

The intensive and extensive technologies for reproduction and aquaculture products in open and closed systems are applied in the Black Sea coastal states. The environmental norms available on the national level in most of the Black Sea coastal states have not been discussed and agreed upon on the regional level.

As with any new project or activity, the environmental impact assessment is a common procedure for starting new aquaculture farms in the Black Sea region. Some international assistance was delivered for the development of the aquaculture sector in Romania (\$ 2,500), and in the Russian Federation (\$80,000). Economic incentives are rarely applied in order to promote development of aquaculture, though the Russian Federation provides tax privileges.

Medium and small size investments or grants are needed to speed up the process. The size of investments needed vary from 15,000 USD (Romania) to 720,000 USD (Russian Federation).

An Aquaculture Code of Practice has not been developed nor have any other international documents been implemented in the region.

Actions required:

- ⇒ Invite international organizations dealing with aquaculture development to the Black Sea region.
- ⇒ Develop common environmental norms in order to avoid environmental damage resulting from aquaculture activities, in particular those with transboundary implications.
- ⇒ Pursue the establishment of revolving funds for small and medium size aquaculture farms and businesses.

- ⇒ **Establish a regional body or expert group under the umbrella of the Bucharest Convention for the promotion of aquaculture development.**
- ⇒ **Organize regional conferences on the issues of aquaculture development with the involvement of scientific communities, businesses, international donors, and the private sector.**
- ⇒ **Develop an Aquaculture Code of Practice by the year 2005 using international experiences.**
- ⇒ **Develop a list of aquaculture species that are not expected to harm the indigenous flora and fauna of the Black Sea.**

Article 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 co-operation 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.

Environmental impact assessments are required for tourist facilities on the same legal basis as for any other economic activity. It is compulsory for all new projects, although criteria were not fully defined. EIA have been compulsory in Turkey since 1993 for certain tourism investment projects, such as, the construction of hotels with over 200 rooms. EIA's are required and are the responsibility of the Ministry of Environment. For new projects of hotels with 50 to 199 rooms, EIA procedures are carried out under the responsibility of the provincial governors. EIA's are not required for the hotels with fewer than 50 rooms.

Tourist facilities are encouraged to undertake the ecological audits as these will improve their image and attract more clients.

“Green tourism” is given more attention and is rather well developed in the relatively undisturbed areas as 2 Mai, Vama Veche (Romania), the Danube delta and the Black Sea Biosphere Reserves, Ukraine.

Environmental protection is now one of the key principles of the Turkish tourism policy and is currently based on the three objectives:

- Development of an efficient and competitive structure in the tourism sector;
- Provision of the best possible social environment for foreign tourists and for the local population, in accordance with internationally accepted standards; and
- Preservation and improvement of the country's natural resources and cultural heritage. Turkey will continue to implement projects to preserve the environment and its cultural identity.

Promotion of these objectives on the regional level will be beneficial for the marine environment and for the well-being and health of the coastal population (Tab. IIIC.3 and Tab. III.7).

Actions required:

- ⇒ **Develop a “Guide for Best Management Practice” for all Black Sea Coastal Tourism.**
- ⇒ **Support a series of studies to determine the level of coastal degradation.**

- ⇒ **Disseminate the best approaches and practices available to affect public awareness and provide training activities.**

- ⇒ **Promote corrective actions on land-based sources of pollution caused by the tourism industry which negatively impact coastal and marine resources.**
- ⇒ **Promote the “Blue Flag” Program for Black Sea beaches to the extent that is allowed by the economic conditions in the Black Sea states.**
- ⇒ **Involve the general public in environmental decision making in the tourism sector.**

d) Involving the public in environmental decision making

Article 73. Participation of all sectors of society is an essential requirement for the development of sustainable policies in the region. It requires the development of education projects, transparent and participatory decision making procedures and open rules on access to administrative and judicial procedures.

On-going environmental education for all sectors of society is an essential prerequisite of sustainable development in the Black Sea region. There are a vast number of small educational projects, campaigns, and actions that have been conducted from 1996-2001. Establishment of October 31 as Black Sea Day united the efforts of many concerned NGOs and communities on the national level. International assistance was delivered to the NGOs in the framework of the TACIS Black Sea Funds projects. Additional support was received by NGOs for educational purposes from such international organizations as EUCC, Wetlands International, WWF, etc.

Public involvement in the decision making process foresees the holding of public hearings according to the legislation of the individual countries. Four Black Sea coastal states ratified the Aarhus Convention.

Actions required:

- ⇒ **From 2002-2007, to develop and deliver the special training programs and workshops in the sphere of eco-education for the representatives of the local authorities, resource users, NGOs, the business sector, teachers and mass media representatives through the creation of local working groups LA21, which could be coordinated by the regional group “The Black Sea Local Agenda 21”. (See Table III C 5)**
- ⇒ **To ensure transparent procedures during decision-making concerning the Black sea environment.**

Article 74.

Municipalities will be closely involved in the implementation of this Strategic Action Plan. Both existing mechanisms, as the International Black Sea Club of Cities, as well as new mechanisms will be used for this purpose. Black Sea municipalities will also be stimulated to co-operate at the national level and with municipalities in other countries and regions. The Union of Governors of the BSEC will also be requested to co-operate towards the implementation of this Strategic Action Plan.

In general, the municipalities are insufficiently informed and are not involved in the implementation of BSSAP. Regional cooperation between municipalities is very weak and in most cases does not have environmental implications. Links to the Union of Governors of the Black Sea Economic Cooperation on the BSC level are not established.

Actions required:

- ⇒ **Establish close links with Union of Governors of the BSEC.**
- ⇒ **Promote bilateral and multilateral dialog and cooperation between the municipalities of the Black Sea coastal states.**
- ⇒ **Develop a mechanism for delivering information on the BSSAP and related measures for the rehabilitation and protection of the Black Sea to the municipality level in the Black Sea coastal states.**

Article 75.

NGOs will continue to be closely involved in the development and implementation of both national and regional policies aimed at rehabilitating and protecting the Black Sea ecosystem and the sustainable use of its natural resources

The Black Sea NGO Directory (GEF BSEP, 1999) contains information on over 90 NGOs involved in the activities for protection of the Black Sea. A number of projects, campaigns and actions were undertaken by the NGO community, including celebration of the Black Sea Day. The Black Sea NGO Network (1998) evolved from the NGO Forum (1996). Their work was primarily supported by international funding and to great extent lacked self-sustainability. Professional associations, such as the farmers and fisheries associations, etc. were not sufficiently involved.

Actions required:

- ⇒ **Expand BSC public outreach to all layers of society in the Black Sea coastal states in order to involve the farmers' and fishers' association, scientific groups and educators in the development and implementation of national and regional policies aimed at rehabilitating and protecting the Black Sea ecosystem and the sustaining of its natural resources.**
- ⇒ **Important international events, such as, "Black Sea Day", "Day of Environment", "International Day of Water" etc. should be coordinated and supported by the Black Sea Commission and international donors.**

Article 76.

The Black Sea NGO Forum is encouraged to continue giving its support to the actions taken to rehabilitate and protect the Black Sea and, in particular, to support the implementation of this Strategic Action Plan. It is recommended that the Istanbul Commission adopt procedures which facilitate the participation of the NGO Forum, as an observer, in its meetings.

The Black Sea NGO community shares the environmental concerns of and fully supports the Black Sea Commission in its work. Initiated and aimed at strengthening regional cooperation of the public in the framework of the Black Sea Environmental Program, the NGO Forum has been supplemented by the Black Sea NGO Network that seems to be stronger institutionally and more self-sustaining than the NGO Forum. The Black Sea Commission granted observer status to the BS NGO Network under which Black Sea NGOs involved in this network can voice their opinions and express their concerns.

Actions required:

- ⇒ **Provide a clear and transparent criteria and selection procedure for NGOs applying to BSC for observer status.**

- ⇒ **Ensure adequate information flow on the NGOs activities in the Black Sea Convention area.**
- ⇒ **Ensure, to the extent possible, the availability of funds for small grants for the NGO community in the framework of assistance rendered to the Black Sea Commission by various donor organizations.**

Article 77.

Stakeholders will have to be clearly identified for each of the policy areas included in this Strategic Action Plan. Their involvement in the decision making process will be secured and their responsibilities in implementing this Strategic Action Plan defined, through mechanisms such as those provided by new Regional Environmental Centers.

The network of the Regional Environmental Center (REC), functional in Hungary, embraces the NGOs in Bulgaria and Romania. Georgia is included in the REC of the Caucasus Region. RECs are established in the Russian Federation and in Ukraine. Negotiations were held to establish a Regional Environmental Center in Turkey. Nevertheless the involvement of the regional environmental centers in the implementation of the BS SAP was minor. The project or activities supported by these entities were not adequately highlighted on the regional level.

Cooperation between the regional environmental centers and the Black Sea Commission shall be strengthened and better coordinated in the following aspects:

- capacity building;
- training;
- public awareness; and
- information exchange.

The Black Sea NGOs' activities should be coordinated in a better manner and a number of projects could be supported under this cooperation including:

- The International Black Sea Day
- Coast Watch
- Educational Projects
- Conference of the Young Scientists of the Black Sea

Actions required:

- ⇒ **Improve coordination between Regional Environmental Centers in the Black Sea coastal states.**

Article 78.

Each Black Sea state, in accordance with its own national legal system, will endeavor to adopt and implement, by 2000, rules which guarantee the right of access to environmental information, which provide for the right of the public and NGOs to participate in decision making, and which provide for the right of individuals and groups to appeal to administrative and judicial organs. It is recommended that the Istanbul Commission prepare a draft position paper on this topic.

The Black Sea Commission and the Contracting Parties to the Convention on the Protection of the Black Sea Against Pollution welcome the involvement of the general public in the implementation of the Black Sea SAP. Public involvement and transparency of decision making is further promoted in the region through the Aarhus Convention to which Bulgaria, Georgia, Romania, and Ukraine are the Contracting Parties. Public awareness on the Black Sea environmental problems is rather high and many NGOs are very active on the

local and national levels. Observer status may be granted to any NGO or their associations that have proven their dedication to implementing the BSSAP and have shown visible results on the regional or national level. This status gives the NGO community an additional tool to influence decision making.

In the Black Sea coastal states, public access to environmental information and its involvement in the decision making process are incorporated in the appropriate laws. The right to appeal to administrative and judicial organs is guaranteed by constitutions.

A Black Sea position paper on public involvement has not been delivered. This paper/document is still needed to establish a link between governmental transparency and environmental protection efficiency. It should be distributed to the NGO's and decision makers from the 6 riparian countries.

Public participation in the implementation of the BS SAP will receive new momentum and support in the framework of the Black Sea Ecosystem Recovery Project and other regional projects.

Actions required:

- ⇒ **Prepare a position paper on public involvement in the Black Sea environmental decision-making process in 2002.**
- ⇒ **Organize regional meetings /conferences of NGO communities on the issues pertaining to the implementation of the BSSAP.**
- ⇒ **Organize an Internet based NGO discussion forum under the umbrella of the BSC**
- ⇒ **Ensure the incorporation of public awareness and educational components in the regional projects/programs, supported by GEF, TACIS, EU and other donors.**

Article 79.

Information about the actions taken to rehabilitate and protect the Black Sea ecosystem and achieve the sustainable use of its resources will be widely disseminated. Each Black Sea state will publish a popularized version of this Strategic Action Plan, in its own language. In addition, the following actions will be taken through the BSEP, in close co-operation with the NGO Forum:

A project-based operational information system evidently lacked continuity and sustainability, therefore the wider Black Sea community was deprived of up-to-date information on progress in the implementation of the Black Sea Strategic Action Plan on the national and regional levels. A popular version of the Black Sea SAP in English was published in 1998, while the Russian and the Ukrainian versions were published in 2001. The versions in the Bulgarian, Georgian, Romanian and Turkish languages are under preparation. This is a very useful publication but should be oriented more towards national policy, and it should have been produced earlier, not after five years of its adoption. The national action plans and their popular versions will also need attention and have to be closely related to the BS SAP. The system of dissemination of this publication was not efficient and, in many cases, the popular version was disseminated on different events and definitely did not reach the destination points on the local levels.

Actions required:

- ⇒ **Establish a Black Sea Information System (BSIS) in order to disseminate information on the activities under the umbrella of the Black Sea Commission; the concerted efforts of the stakeholders; as well as national progress in the BS SAP implementation.**
- ⇒ **Ensure publication of information on the important BSSAP related activities in a timely, transparent and popular manner and develop a mechanism for its proper dissemination.**

a) An educational information package for use in schools will be developed and each Black Sea state will translate it into its own language

Valuable experiences and materials in environmental education in relation to the Black Sea have been accumulated in the Black Sea states. These vast experiences and constructive materials however were not fully utilized.

Actions required:

- ⇒ **Compile, evaluate and publish the best educational materials developed in the Black Sea coastal states through open competition and make it available to the wide community of the environmental educators in the Black Sea.**
- ⇒ **Assist religious communities in developing educational materials for their use in close cooperation with clergy and scientists of the Black Sea and coordinate the work of the UN/WCC Black Sea educational project.**

b) A mobile exhibition will be prepared and translated into the languages of the Black Sea states for display at public functions and educational establishments;

Educational activities were promoted under the public participation component in the framework of Black Sea PHARE and TACIS Fund 1995/1996 via the mobile exhibition "ECOPOINT 97/98. It stopped in the main cities along the Black Sea coast. As a follow up, in all Black Sea states, activities on related topics were organized (Tab. IIC.9).

Actions required:

- ⇒ **Assist the general public and NGOs in receiving up-to-date information on the state of the environment of the Black Sea and the activities of the Black Sea Commission**

c) A user-friendly Black Sea CD ROM multimedia information package, based upon the existing GIS system, will be developed.

An attempt to create a user-friendly Black Sea CD ROM multimedia package, based on the existing GIS system, was initiated in the framework of the Black Sea Environmental Program but lacked continuity. None of the Black Sea coastal states used this CD ROM in 1996-2001 for support of their decision making in the environmental protection of the Black Sea.

The development and establishment of the Black Sea Information System (BSIS) was initiated in 2001 in the framework of EU assistance rendered to the BSC Permanent Secretariat.

Actions required:

- ⇒ **Finalize the BSIS in a course of the GEF Black Sea Ecosystem Recovery Project.**
- ⇒ **Design, establish and maintain a Web page of the Black Sea Commission at the Permanent Secretariat of the BSC.**

⇒ **Use the GIS technology for the appropriate components of BSIS, e.g. for monitoring data, with the purpose of creating a comprehensive decision support system equally useful for regional and national decision makers.**

Article 80.

Based on harmonized criteria, information on the state of bathing water suitable for advising the public on the potential risks to their health shall be made widely available to the public during the active tourist season, starting in 1998. Frequency of sampling and analytical methodology should be sufficient to inform bathers of conditions which may pose health risks. Additionally, a color coding system for bathing water quality maps shall be developed and such maps shall be published annually starting January in 1999.

Along with other factors, the poor quality of bathing waters affects the tourist industry and population incomes in the BS coastal states. The national quality criteria for bathing waters are established in all Black Sea coastal states. In addition, the accession to the European Union require from Bulgaria, Romania and Turkey transposition of the EU Bathing Water Directive. One of the approaches to improve bathing water quality that was initiated in number of countries, e.g. Turkey, is the UN Blue Flag Beaches Program. Among other requirements, this program imposes the following criteria for bathing water quality:

- Coliforms: max.500/100ml
- Faecal coliforms: max.100/100ml
- Faecal Streptococci: max.100/100ml.
- PH: 6-9

Although a national system of monitoring of beaches is activated in all Black Sea counties during tourist seasons, the information on the conditions of the beaches are not widely available for tourists. If some of beaches are closed, this is mostly due to been bacteriological pollution. None of beaches of the Black Sea coast were closed in the period from 1996-2001 for the reasons of the chemical pollution.

With the exception of Turkey, none of the Black Sea coastal states uses color-coded maps or publishes information on the conditions of beaches. This lack is disadvantageous to the region and obviously results in economic losses in the tourist sector.

Actions required:

- ⇒ **Introduce a unified method for the assessment of the quality of bathing waters, including the colour coding system and publish it starting in the year 2003.**
- ⇒ **Establish a monitoring system for bathing water quality that implies frequencies and parameters sufficient to inform bathers of any conditions which may pose health risks.**
- ⇒ **Promote and adapt the quality standards of the EU Bathing Water Directive for beaches in all Black Sea countries.**
- ⇒ **Support studies related to the assessment of risks of pollution of bathing waters for human health.**
- ⇒ **Incorporate information on the quality of the bathing waters on the Black Sea Information System.**

VI. National Black Sea Strategic Action Plans

Article 81.

Each Black Sea coastal state shall prepare by October 1999, a National Black Sea Strategic Action Plan or other corresponding document which shall present detailed plans for national implementation of this strategic Action Plan. These shall include details of specific projects where possible.

The Strategic Action Plan for the Rehabilitation and Protection of the Black Sea, signed by the environmental ministers of the Black Sea coastal states, served as the basis for drafting the National Black Sea Strategic Action Plans (NBSSAP).

The current status of the National Black Sea Strategic Action Plans shall be analyzed by the BSC. The following information is currently available:

Bulgaria	– started to draft NBSAP in 1997 but not finalized
Georgia	– not responded
Romania	– NBSSAP drafted
Russian Federation	– measures pertaining to the implementation of NBSSAP are incorporated in the Federal Programs of the Russian Federation
Turkey	– NBSSAP drafted; has not been approved; serves a guiding document
Ukraine	– the National Program for Protection and Rehabilitation of the Azov and Black Seas (2001-2011) was enacted in March 2001 as a national law of Ukraine. The BSSAP served as a basis for the development of the NBSSAP in Ukraine and incorporated all principles, approaches and measures foreseen in BSSAP.

VII. Financing the Strategic Action Plan

A. Funding for the actions agreed upon in this Strategic Action Plan

Article 82

Funding for the actions agreed upon in this Strategic Action Plan may be secured from domestic, regional or international sources, through general public funding or through the application of specific economic instruments, as well as through grants and loans. Specific projects for international funding should be prepared for bilateral or multilateral funding. Donor Conferences, for assisting in this process, shall be held on a five yearly basis, starting in 1997.

Article 83

Specific funding arrangements for the national policies and measures agreed on in this Strategic Action Plan shall be presented in the National Black Sea Strategic Action Plans to be adopted by each of the Black Sea State.

The GEF Black Sea Ecosystem Recovery Project was launched in 2002 with a total funding of 4,000,000 USD for nutrient reduction and control of other hazardous substances and for the promotion of sectoral reform for nutrient reduction. The 70,000,000 USD portfolio for UNDP investment projects in the Black Sea basins and the over 230,000,000USD in loans from the World Bank are activated in the Black Sea region.

EU assistance to the Black Sea region in support of the Black Sea Commission and the BSSAP implementation will be rendered through a TACIS project of 3,500,000 Euros.

Assistance to environmental investment projects in the Black Sea basin will be further promoted through the Danube-Black Sea Task Force (DABLAS).

B. Specific funding arrangements

a) The Feasibility study of the Black Sea Environmental Fund

Article 84

The feasibility of a Black Sea Environmental Fund shall be fully evaluated with a view to its establishment by the year 2000. The main source of finance for the Fund shall be a set of economic instruments adopted at the national level. Additional funding could be sought from the international community, including multilateral and bilateral donor organisations, international financial institutions and private sector sources. The Fund may be used to finance the work of the Istanbul Commission; the development of project proposals for submission to potential funding sources; and specific projects which support the priorities set in this Strategic Action Plan or as decided on by the Istanbul Commission.

A feasibility study of the Black Sea Environmental Fund was carried out in the framework of the TACIS Black Sea Funds 1996/1995 by an independent consultant. As expected, the main sources of finance for the Fund will be paid out of economic instruments developed at the national level. Due to inadequately developed economic instruments on the national levels, transitional economies and socio-economic problems encountered in most of the Black Sea coastal states, paying out the funds in this way does not seem feasible.

VIII. Arrangements for future cooperation

Article 85

Given the assessment of implementation of the Odesa Declaration, which recommends that Ministerial meetings be held every five, instead of every three years, the following arrangements have been agreed.

Following the recommendations of the BSSAP, a Ministerial Meeting on the Implementation of the Black Sea SAP was held on June 14, 2002, In Varna, Bulgaria.

The annual reporting procedure, formats, indicators and reporting requirements are being developed and implemented by the Permanent Secretariat. In order to receive and present national information in a compatible manner, the Black Sea Information System, with flexible mechanisms for its evolution, is being developed and will be finalized in 2003. Close cooperation with EEA on streamlining the reporting requirements is being pursued in order to see and compare the Black Sea to other regional seas and to incorporate the BSC in the European environmental process. The first step included the contribution to the Kiev Ministerial Meeting "Environment for Europe", 2003.

Annual reporting to the BSC on the progress in implementation of the BSSAP will start in 2003.

The present Report on the implementation of the Black Sea Strategic Action Plan, covering the period 1996-2001, was compiled based on the national responses to the Questionnaires prepared by the Permanent Secretariat, discussed and adopted by the Advisory Groups, and approved by the Commission. It is accompanied by the State of the Environment of the Black Sea Report for the decision makers.

Ministers responsible for the rehabilitation and protection of the Black Sea of the Black Sea states will meet every five years with the objectives of evaluating the progress made in implementing this Strategic Action Plan and adopting any additional actions that may be required to attain its overall aims.

Policy measures of the Odessa Ministerial Declaration were translated into the principles, approaches and measures of Strategic Action Plan for Rehabilitation and Protection of the Black Sea and were effective tools for strengthening regional cooperation and for the enhancement of the national environment policies in the Black Sea. The process of attaining the ambitious goals set in the BSSAP was initiated although it appears that the timeframe was not realistic. Many actions, including, the development of the National BSSAPs, were more time consuming than expected.

The Ministers of the Environment of the Black Sea coastal states have decided to amend the timeframe of the BSSAP and request from the Black Sea Commission better coordination of the implementation of the BSSAP on the regional level.

IX. Resolution of the Meeting of the Ministers Responsible for the Environment Protection of the Contracting Parties to the Convention on the Protection of the Black Sea Against Pollution on the Amendment of the Strategic Action Plan on the Rehabilitation and Protection of the Black Sea

The Ministers responsible for the Environment Protection of the Contracting Parties to the Convention on the Protection of the Black Sea Against Pollution at their meeting held in Sofia, Bulgaria, on June 14, 2002 approved the following changes in the Strategic Action Plan on the Rehabilitation and Protection of the Black Sea:

1. In Article II, Item 19 to replace the time limit "1997" with "2003"
2. In Article II, Item 25 to replace the text "starting June'98" with "starting 2004"
3. In Article III, Item 31 to replace the time limit "1999" with "2005"
4. In Article III, Item 33 to replace the time limits "2000" and "2005" with "2002" and "2007" respectively
5. In Article III, Item 33 to replace the time limits "2001" and "2006" with "2002" and "2007" respectively
6. In Article III, Item 34 to replace the text "January 2000" with the text "June 2002"
7. In Article III, Item 35 (a) to replace the text "Mid-1998" with the text "2005"
8. In Article III, Item 35 (b) to replace the text "Mid-1998" with the text "2004"
9. In Article III, Item 36 to replace time limit "2002" with "2007"
10. In Article III, Item 37 to replace time limits "1999", "2000", "2002" with "2007"
11. In Article III, Item 40 to replace time limit "1998" with "2007"
12. In Article III, Item 41 to replace time limit "1997" with "2004"
13. In Article III, Item 44 to replace the text "February'98" with "2005"
14. In Article III, Item 47 to replace the text "Without further delay" with "By 2006"
15. In Article III, Item 48 to replace the text "Without further delay" with "By 2007"
16. In Article III, Item 49 to replace the text "December 1998" with "By 2008"
17. In Article III, Item 50 to replace the text "December 2000" with "2009"
18. In Article III, Item 53 to replace the text "beginning 1996" with "beginning 2006"
19. In Article III, Item 54 to replace the text "1998" with "2005"
20. In Article III, Item 56 to replace the text "every five years, beginning 1996" with "beginning 2002 on annual basis"
21. In Article III, Item 58 to replace the time limit "2000" with "2003"
22. In Article III, Item 60 to replace the time limit "2000" with "2002"
23. In Article III, Item 62 (b) to replace to add the text "by 2005"
24. In Article III, Item 65 to replace the text "by mid 1998" with "by 2004"
25. In Article III, Item 68 to replace the text "December 1998" with "2005"
26. In Article III, Item 69 to replace the time limit "1998" with "2005"
27. In Article III, Item 70 to replace the time limit "1999" with "2006"
28. In Article III, Item 80 to replace the time limits "1998", "1999" with "2004"
29. To replace everywhere in the text of the Plan the text "Environment and Safety Aspects of Shipping" with "Environmental Safety of Shipping"

30. To replace everywhere in the text of the Plan the text “Advisory Group on Fisheries and other Marine Living Resources” with “Advisory Group on the Environmental Aspects of Management of Fisheries and Other Marine Living Resources”
31. To add the text “...(5) the coordination, in close cooperation with WHO of programmes to monitor the quality of bathing waters and beaches and to assess the human health implications of the information gathered ”in the end of the second sentence of Item 2 of the Annex I
32. To delete the text “...(5) the coordination, in close cooperation with WHO of programmes to monitor the quality of bathing waters and beaches and to assess the human health implications of the information gathered ” in the Item 3 of the Annex I

Done in English, on the fourteenth day of the month of June of two thousand and two, in Sofia

33. For the Republic of Bulgaria
34. For the Republic of Georgia
35. For Romania
36. For the Russian Federation
37. For the Republic of Turkey
38. For Ukraine

X. Annexes.