Intergovernmental Oceanographic Commission
Reports of Governing and Major Subsidiary Bodies

Original

Intergovernmental Meeting on the IOC Black Sea Regional Programme in Marine Sciences and Services

Paris, France
7-9 June 1995

UNESCO

In this Series

Reports of Governing and Major Subsidiary Bodies, which was initiated at the beginning of 1984, the reports of the following meetings have already been issued:

		Languages
1.	Eleventh Session of the Working Committee on international Oceanographic Data Exchange	E, F, S, R
2.	Seventeenth Session of the Executive Council	E, F, S, R, Ar
3.	Fourth Session of the Working Committee for Training, Education and Mutual Assistance	E, F, S, R
4.	Fifth Session of the Working Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
5.	First Session of the IOC SubCommission for the Caribbean and Adjacent Regions	E, F, S
6.	Third Session of the ad hoc Task team to Study the Implications, for the Commission, of the UN Convention on the Law of the Sea and the New Ocean Regime	E, F, S, R
7.	First Session of the Programme Group on Ocean Processes and Climate	E, F, S, R
8.	Eighteenth Session of the Executive Council	E, F, S, R, Ar
9.	Thirteenth Session of the Assembly	E, F, S, R, Ar
10.	Tenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	
11.	Nineteenth Session of the Executive Council	E, F, S, R, Ar
12.	Sixth Session of the IOC Scientific Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S
13.	Twelfth Session of the IOC Working Committee on International Oceanographic Data Exchange	E, F, S, R
14.	Second Session of the IOC SubCommission for the Caribbean and Adjacent Regions	E, F, S
15.	First Session of the IOC Regional Committee for the Central Eastern Atlantic	E, F, S
16.	Second Session of the IOC Programme Group on Ocean Processes and Climate	E. F. S
17.	Twentieth Session of the Executive Council	E; F; S, R, Ar
18.	Fourteenth Session of the Assembly	E, F, S, R, Ar
19.	Fifth Session of the IOC Regional Committee for the Southern Ocean	E, F, S, R
20.	Eleventh Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
21.	Second Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean	E, F
22.	Fourth Session of the IOC Regional Committee for the Western Pacific	English only
23.	Twenty-first Session of the Executive Council	E, F, S, R
24.	Twenty-second Session of the Executive Council	E, F, S, R
25.	Fifteenth Session of the Assembly	E, F, S, R
26.	Third Session of the IOC Committee on Ocean processes and Climate	E. F. S. R
27.	Twelfth Session of the International Co-ordination Group for the Tsunami Warning System in the	E; F; S; R
28.	Third Session of the Sub-Commission for the Caribbean and Adjacent Regions	E, S
29.	First Session of the IOC Sub-Commission for the Western pacific	English only
30.	Fifth Session of the IOC Regional Committee for the Western Pacific	English only
31.	Twenty-third Session of the Executive Council	E, F, S, R
32.	Thirteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange	English only
33.	Seventh Session of the IOC Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
34.	Fifth Session of the IOC Committee for Training, Education and Mutual Assistance in Marine Sciences	E, F, S, R
35.	Fourth Session of the IOC Committee on Ocean Processes and Climate	E, F, S, R
36.	Twenty-fourth Session of the Executive Council	E, F, S, R
37.	Sixteenth Session of the Assembly	E, F, S, R, Ar
38.	Thirteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
39.	Second Session of the IOC-WMO Intergovernmental WOCE Panel	English only
40.	Twenty-fifth Session of the Executive Council	E, F, S, R
41.	Fifth Session of the IOC Committee on Ocean Processes and Climate	E, F, S, R
42.	Second Session of the IOC Regional Committee for the Central Eastern Atlantic	E, F
43.	First Session of the Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
44.	First Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms	E, F, S
45.	Fourteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange	E, F, S, R
46.	Third Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean	E, F
47.	Second Session of the IOC Sub-Commission for the Western Pacific	English only
48.	Fourth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions	E, S
49.	Third Session of the IOC Regional Committee for the Central Eastern Atlantic	E, F
50.	First Session of the IOC Committee for the Global Ocean Observing System	E, F, S, R
51.	Twenty-sixth Session of the Executive Council	E, F, S, R
52.	Seventeenth Session of the Assembly	E, F, S, R
53.	Fourteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
54.	Second Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms	E, F, S
55.	Twenty-seventh Session of the Executive Council	E, F, S, R
56.	First Planning Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System	E, F, S, R
57.	Eighth Session of the IOC-UNEP-IMO Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S
58.	Twenty-eighth Session of the Executive Council	E, F, S, R
59.	Eighteenth Session of the Assembly	E, F, S, R
60.	Second Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System	E, F, S, R
61.	Third Session of the IOC-WMO Intergovernmental WOCE Panel	E only
62.	Fifteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
63.	Third Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms	E, F, S
64.	Fifteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange	E, F, S, R
85.	Second Planning Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System	English only
68.	Third Session of the IOC Sub-Commission for the Western pacific	English only
67.	Fifth Session of the IOC Sub-Commmsion for the Caribbean and Adjacent Regions	E, S
68.	Intergovernmental Meeting on the IOC Black Sea Regional Programme in Marine Sciences and Services	E, R

Intergovernmental Oceanographic Commission
Reports of Governing and Major Subsidiary Bodies

Intergovernmental Meeting on the IOC Black Sea Regional Programme in Marine Sciences and Services

Paris, France
7-9 June 1995

UNESCO

IOC/IGM-BS/3
Paris, 15 July 1996
English and Russian*

*** For reasons of budgetaty constraints, Annexes IV to Vll have to remain untranslated and appear in English in the Russian text of the Report.**

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The meeting was held at UNESCO Headquarters, 7-9 June 1995. All Black Sea coastal states were represented, and the GEF Black Sea Environmental Programme as well.

The meeting was convened following Resolution XVII-15 and the related workshop on regional Black Sea co-operation in marine research and systematic observation held in Varna, Bulgaria, 14-16 September 1994, with the support of IOC.

The meeting reviewed the draft proposal elaborated at the workshop in Varna, taking into account comments received from all Black Sea coastal states, as well as national statements made at the meeting.

The proposal for an IOC Black Sea Regional Programme in Marine Sciences and Services is based upon:

(i) The Resolution of the 27th General Conference of UNESCO (Doc.27 C/5 1.21 and DR.190 of 1993), which advises ***"l'adoption d'un Projet régional de recherches integrées et de surveillance continue relatif à la Mer Noire".***

(ii) The Resolution XVII-15 of the IOC Assembly which ***"instructs the IOC Secretary to explore ways of assistance in addition to available UNESCO Regular Programme funds, in particular through international and regional funding agencies, to support development of a work plan by a Regional Association for the Black Sea, with a view to establish a Regional Committee for the Black Sea as an IOC regional subsidiary body for co-operation in this region; requests the IOC Executive Council, at its Twenty-seventh session, to consider the further implementation of this resolution in the light of possible co-operation with other international and regional bodies".***

The overall objective of the programme is to provide scientific support for sustainable development of the Black Sea region and for environmentally sound utilization of its natural resources.

There exist several instruments concerning the Black Sea, which will have to be taken into account. These include the Convention on the Protection of the Black Sea against Pollution, the Odessa Ministerial Declarations (Bucharest Convention) and the GEF Black Sea Environmental Programme.

The proposed regional co-operation may benefit from the experiences in other regions within the IOC regional subsidiary bodies. The basic approach is that the co-operation is built on national institutions and the priority interests of these institutions to respond to national needs and problems. The regional co-operative programme needs to be driven from inside the region, address priority interests of the region and build on and include national programmes and resources. The support for the implementation of the programme can be national, international, from IOC and other similar bodies and from national or international donors.

The structure and functions of the IOC regional subsidiary bodies are constituted and defined in the IOC Manual, Part 1.

National statements presented at the meeting were all in favor of establishing such a co-operative regional programme focusing on science and services under UNESCO-IOC auspices, together with a related regional co-ordination mechanism. The meeting stressed the need for close liaison and co-ordination with other on-going programmes of regional nature dealing with questions related to the marine environment and management of the Black Sea.

The meeting emphasized the need for commitment from the Black Sea states to the programme and proper institutional representation on the proposed IOC Regional Committee. It stressed the need for proper national counterparts in the form of a national co-ordination mechanism.

It also noted the requirements for co-operation with countries beyond the Black Sea coastal states, and the need to seek additional financial support from donors.

The meeting emphasized that the economical beneficial products and rationale of the regional co-operation should be identified and specified.

The meeting agreed that initially the regional committee should be served by the IOC Secretariat from Paris. The structure and functions of the Committee should follow the IOC Manual. Various programme implementation activities and functions should be distributed in a balanced way among the participating Black Sea states and institutions.

The meeting endorsed the pragmatic approach to initiate regional programmes in a step-wise manner, starting with the two pilot projects proposed at the workshop in Varna (September 1994), and as subsequently further elaborated and specified.

The meeting identified several potential initial tasks of the regional programme and committee. It emphasized that the current momentum must be maintained and that the first activities, in particular, meetings of experts and the First Meeting of the Committee, should be initiated in 1995, with a phased initial implementation of pilot projects in 1996-97, The meeting estimated related financial requirements from the IOC.

The meeting accordingly adopted a Draft Resolution for the Assembly and proposed Terms of Reference for the Regional Committee and provided a list of possible initial tasks. This was later adopted slightly amended by the IOC Assembly as its Resolution XVIII-17.

SUMMARY REPORT

1. OPENING AND DESIGNATION OF CHAIRPERSON

The Executive Secretary IOC opened the meeting welcoming all the participants and expressing his appreciation of the fact that all the Black Sea States had confirmed their participation. He also welcomed the Coordinator of the GEF Black Sea Environmental Programme, expressing the wish to see a strong cooperation and coordination with this Programme and the action under consideration at this meeting.

He recalled the background to the meeting, including the relevant decisions of the 27th General Conference of UNESCO and of the IOC Assembly and Executive Council, and the Workshop in Varna, Bulgaria, 14-16 September 1994.

The Workshop had agreed that an experts meeting should be convened to review the proposed draft programme resulting from the Workshop, and subsequently before the IOC Assembly a meeting of governmental nominated experts, to complete the recommendation to the IOC Assembly.

However, the comments received on the Varna Workshop draft proposal suggested that the second expert review meeting was not necessary. The comments did not call for any revision of the proposals, but rather elaborated on the pilot projects.

Secretary IOC had therefore decided in March 1995, in the name of efficiency and in view of the very limited financial resources available to the IOC, to call only an intergovernmental meeting. As a consequence, some further resources had also been reallocated to support COMSBLACK.

Considering the limited number of participants, the meeting agreed that the Executive Secretary IOC could serve as chairman.

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA

The meeting adopted the Agenda as presented in Annex I.

2.2 DESIGNATION OF RAPPORTEUR

The Executive Secretary IOC recalled the role of the Rapporteur to review the draft summary report prepared by the Secretariat to ensure that it adequately summarized the deliberations of the meeting. In view of the limited number of participants, he suggested that the meeting itself should perform this task. The list of participants is given in Annex VII.

2.3 CONDUCT OF THE MEETING, TIMETABLE AND DOCUMENTATION

The Executive Secretary IOC proposed a timetable schedule aiming at completing the meeting by noon on 9 June. He urged that the discussions should be very concrete. The meeting was not called to review and prepare scientific project proposals, but to arrive at a proposal on a mechanism for regional cooperation in marine sciences and services and a related framework programme with initial pilot projects.

He presented the documentation for the meeting. The basic working documents are the draft proposal from the Varna Workshop and the generic terms of reference for a regional subsidiary body of the IOC. These had been circulated to participants before the meeting.

The Annotations to the Agenda presented succinctly the tasks and references for each agenda item.

Annex II provides the draft resolution of the meeting for possible adoption by the IOC Assembly.

3. PRESENTATION OF THE DRAFT PROPOSAL AND RELATED REGIONAL COOPERATIVE MECHANISM

The Executive Secretary made a brief presentation of the draft proposal resulting from the Varna Workshop. This is attached to this report as Annex Ill.

He also pointed out that comments on the draft had been received from all Black Sea States. He briefly summarized these comments. Some of them were actually rather detailed proposals for the pilot projects 1 and 2, as presented in the Varna Workshop report. He suggested that these should be provided to the next regional expert meeting for initiating the implementation of the pilot projects. The themes of the pilot projects are:

(i) The Black Sea Observation and Prediction Research Project: the initiation of a regional Black Sea GOOS (pilot project 1);

(ii) Dispersion of sedimentary material in the Black Sea and its evolution in the recent geological history of the basin (pilot project 2).

The Executive Secretary also recalled the cooperation mechanism indicated in the report of the Varna Workshop, in the form of an IOC Regional subsidiary body. He presented the generic terms of reference for such a body and suggested some additions specific to the Black Sea regional body.

Finally, the Executive Secretary recalled the necessity of, and interest in, cooperation and, in particular, coordination with the other on-going projects and especially the GEF Black Sea Environmental programme. He drew attention to a summary table of on-going activities in the Black Sea drawn up through information from the GEF Project Office. He invited the meeting to review and perhaps complete this overview table (it is attached as Annex IV).

In the ensuing discussion, several basic points were made:

(i) all the participating countries agreed with the initiative; a draft text for elements of a recommendation was presented by Bulgaria;

(ii) a substantial proposal for a phased development of the regional Black Sea GOOS was presented, including considerations of cost-benefit and economical returns, data management, definition of what constitutes a regional GOOS, indication of users and benefiting sectors, consideration of local, regional and global levels, suggestion that the Black Sea could well serve as a regional pilot project for GOOS development, suggestions of potential pilot activities; suggestions were made for the terms of reference for a Black Sea regional GOOS (see Annex V - Turkey);

(iii) some basic questions as to the location of a secretariat service for the IOC regional subsidiary body; how the project implementation would be done in practice; how the international and national funding could be generated;

(iv) the first concern is that of coordination, harmonization and pooling of resources. Scientific coordination should aim at rationalizing the present situation so that the existing research capacity in the Black Sea countries can be put to use in a coordinated and sustainable way. There needs to be a strong link between research and management;

(v) the creation of common information and databases requires some fundamental principles as to quality insurance;

(vi) a pilot experiment of GOOS in the health of the ocean module could be very pertinent for the Black Sea;

(vii) the service of the regional body is separated from the rationale of its establishment. It was proposed that the technical and supporting servicing of an IOC regional body could be done, in due course, through the well established GEF-PCU.

4. NATIONAL STATEMENTS

All participants presented their national statements (attached in Annex V). They are all in favor of the proposed programme and the establishment of an IOC regional committee for the Black Sea.

Particular points to be noted include:

(i) the regional mechanism and programme should aim at the maximum utilization of the existing considerable national research capacities, including coordination;

(ii) data and information exchange are important tasks;

(iii) cooperation should be sought with other organizations, in particular WMO and GEF Black Sea Environmental Programme and the relevant global IOC programmes, for instance IODE (including GODAR), GIPME, OSNLR should be utilized, as well as other scientific programmes, e.g. JGOFS of IGBP.

(iv) facilitation of international contacts and a coordinated cooperation are essential elements of the work;

(v) the two proposed pilot projects should be pursued and their products should be defined;

(vi) an alternative title of the proposed programme could be: “Regional Cooperation Project for Integrated Research and Monitoring of the Black Sea”;

(vii) the special features of the Black Sea should be considered in the establishment of the programme, and include socio-economic aspects;

(viii) cooperation could also be sought with other European States influencing ecological, social and economic conditions in the Black Sea through land-use activities;

(ix) duplication of efforts should be avoided and close dialogue and coordination with other regional activities should be ensured;

(x) various tasks and functions of the programme can be decentralized in a balanced way to the participating states and institutions;

(xi) practical aspects, expected products and user requirements should be considered in the programme development and project specifications, including such issues as ICZM;

(xii) harmonization of national legal instruments is an important task, but if may fail outside of our mandate;

(xiii) the scientific coordination should aim at utilizing existing resources and rationalize their use for scientific and systematic observation purposes;

(xiv) there is a need to strengthen the linkage between research and management, so as to ensure use of research results;

(xv) through cooperation between the IOC regional mechanism and other regional programmes, e.g. the GEF Black Sea Environmental programme, the related supplementary networks will interact so as to make best use of limited resources.

In conclusion, on the basis of the positive statements, the participants agreed that the proposal of the Varna Workshop should be presented to the IOC Assembly, for possible adoption.

5. AMENDMENTS AND REVISIONS OF THE DRAFT PROPOSAL

The meeting reviewed the draft proposal on the basis of the previous discussions, national statements and comments received by correspondence. It was noted that the pilot experiments, in particular, had been considerably elaborated through correspondence. The meeting agreed that a primary task of the regional Committee, if established, would be to finalize the pilot project formulations. This should include specifications of the expected products.

It was emphasized that the regional Committee should follow the IOC procedures, including rotating chairmanship, that it should be based on institutional participation (institutions to be selected by the relevant government authorities), and be responsible for the management of cooperative programmes. In the first stage, it should be served by the IOC Secretariat from Paris. Different actions and functions in respect of the programme implementation should be distributed among the participating countries (institutions) according to the lead-country principle successfully used in the Baltic Sea cooperation.

National coordination and harmonization will have to be a necessary part of the whole. In accordance with IOC procedures, the relevant national coordination mechanisms should be established, or strengthened, and the focal points should be identified.

The economical perspectives and funding mechanisms were considered. The regional committee must ensure that IOC seed-money provided for partial funding of the programme is most appropriately utilized. In this context, the advantage of cooperation with the GEF programme was brought out. This can, in due course, include the co-location of the secretariat service for the IOC regional committee with the GEF-PCU in Istanbul.

It was emphasized that scientific actions are the primary concerns and this is why this regional programme is part of UNESCO-IOC. The networking of scientific institutions is one basic aim. This can help ensure a data exchange and harmonization of data quality controls.

A related communication network should also be established gradually, with realistic aims, and should respond to defined needs.

The economic benefits of regional cooperation should be identified as a matter of priority. The applications of oceanographic data should be illustrated and presented in tabular form (a preliminary attempt developed by the meeting is presented in Annex VI).

The very important problem of coastal erosion was highlighted. A solid, reliable regional database can help address this problem. Coastal zone management in general requires a data and information base.

National and bilateral programmes should be used to every possible extent and an inventory should be established through the Committee.

In conclusion, the meeting stressed that the matters raised should be taken into account by the regional committee in its work.

The meeting recommended that the Assembly endorse the establishment of such a regional IOC mechanism and that it should be put in place as soon as possible.

6. CONSIDERATION OF GENERIC TERMS OF REFERENCE FOR THE REGIONAL COOPERATION MECHANISM

The meeting agreed that the Terms of Reference should be simple and relatively generic, but indicating objectives, functions of the programme, implementation and funding mechanisms. It should also be emphasized that it is an intergovernmental mechanism of participating institutions designated by the relevant governmental authority. It should also refer to the need for a national counterpart, which, in accordance with IOC customary approach, could be a national oceanographic committee.

The special features of the Black Sea should be referred to, the need for integration and interdisciplinarity should be born out, and the need to draw on national programmes. A reference should be made to products and serving the user requirements or needs of users. Several such were mentioned, including coastal protection, fisheries, stock assessment, pollution control, coastal erosion, harbors and shipping

forecasting, emergency help, mapping satellite uses, heat capacity and climate influence of the Black Sea on coastal states. Results of a different nature are expected in the short- and long-term. Short-term results may include databases, exchange of information and data, joint cruises. Medium- and long-term results may include models, forecasting, management options. Examples of products are given in Annex VI.

Two kinds of activities are foreseen: operational and basic research, with a phased and step-wise development. It was emphasized that the ambition level should be realistic, taking into account the institutional capacities. The financial requirements should be indicated, and, if possible, the cost-benefit also. The participating institutions and states should be willing to make the required long-term commitment for participation.

The Black Sea coastal states should commit themselves to ensure that the future Black Sea basin-wide operational oceanography is conducted to the maximum benefit for the region. Several specific requirements to achieve this goal were indicated, e.g. capacity to use satellite remote sensing data/ annual research cruises in accordance with an agreed plan; a network of marine research institutions; numerical modelling at various scales; dialogue with customers and user sectors; specification of products and deliverables. The structure of the regional GOOS was also discussed in a preliminary way, including the linkage to I-GOOS, J-GOOS; main sources of funding; long-term agreements and commitments.

Financing mechanisms were considered in addition to the seed funding which maybe provided by IOC. Short-term financing of projects and programmes in the Black Sea region will require external support from donor Governments and organizations in order to supplement the limited funding available from existing national sources.

In order to face the challenges imposed by regional Black Sea programmes contributing to the improved management of the environment, an integral framework for regional funding is currently being devised by the GEF Black Sea Environmental Programme, in close cooperation with the six governments. It is hoped to establish a sustainable “Black Sea Environmental Fund” (BSEF) based upon a suite of economic instruments. This fund, under joint management of the six Black Sea governments, should offer better perspectives for implementing existing and future regional conventions and policy declarations. The services and products to be offered by the new IOC Regional Committee should contribute to the long-term implementation of these Conventions. The Committee could therefore be a candidate for grant funding from BSEF once it has become established.

It is important to note that almost all international programmes are now functioning on a “cost-sharing” basis in which an in-kind or cash commitment by each Government is a pre-requisite for external support.

On the basis of this wide-ranging discussion, the meeting agreed to prepare:

(i) a draft resolution, which includes inter alia the arguments for the programmes, values, economical aspects, national counterparts, commitments;

(ii) terms of reference, which are generic but include reference to national institutions and counterparts;

(iii) an Annex to the terms of reference specifying same specific initial tasks for the regional Committee, with an indication of financial requirements.

These elements are all given in Annex II of this report.

7. FORMULATION OF RECOMMENDATIONS AND DRAFT RESOLUTION FOR THE IOC ASSEMBLY

The meeting reviewed the proposed draft resolution presented by Bulgaria, concurred with it, and amended it.

The meeting also considered a tentative timetable for further development. It was recommended that the momentum should be kept and that the first meeting of the regional Committee, if established, should not be later than by early 1996. Several countries expressed their willingness to host this meeting (Bulgaria, Turkey, Ukraine) and also the GEF-PCU. It was pointed out that the GEF Programme Steering Committee will meet in December 1995, and that a donor meeting is scheduled for October 1995.

It is strongly recommended that the participating countries identify their national institutions to participate in the regional Committee and the proposed projects as soon as possible, and inform the IOC Secretariat.

The meeting reviewed an overview table of on-going activities in the Black Sea region, and completed it. It is provided in Annex IV. In this context, reference was made to the on-going Black Sea economic cooperation (BSEC). It was agreed that regional cooperation in marine research and observations was also to be seen as contributing to such regional economic cooperation, and that the proposed programme should be brought to the attention of that economic cooperation mechanism.

Reference was made to the 28th UNESCO General Conference and the possibility of bringing the proposed programme action to its attention through a suitable Draft Resolution from one or more UNESCO National Commissions of the Black Sea region. This would be suitable, since the 27th General Conference considered Draft Resolution 190 and Doc. 27 C/5 1.21. Hence, the meeting would encourage the Member States to consider such a follow-up. The UNESCO Participation Programme was also mentioned as a potential source of support for national efforts contributing to the regional cooperation.

8. ADOPTION OF THE REPORT

The meeting adopted the resolution, the report and the executive summary to be transmitted with the resolution to the Eighteenth Session of the IOC Assembly.

9. CLOSURE

The Chairman closed the meeting at 16:00 on 9 June 1995.

ANNEX I

AGENDA

1. Opening and designation of the Chairperson

2. Administrative arrangements

   2.1 Adoption of the Agenda
   2.2 Designation of the Rapporteur
   2.3 Conduct of the meeting, timetable and documentation

3. Presentation of the draft proposal and the related regional cooperative mechanism

4. National statements

5. Amendments and revisions of the draft proposal

6. Consideration of generic terms of reference for the regional cooperation mechanism

7. Formulation of recommendations and possible draft resolution for the IOC Assembly

8. Adoption of report

9. Closure

ANNEX II

RESOLUTION

IOC BLACK SEA REGIONAL PROGRAMME IN MARINE SCIENCES AND SERVICES

The Intergovernmental Oceanographic Commission,

Recalling Resolution of the 27th General Conference of UNESCO (Dot 27 C/5 1.211 and DR 190),

Recalling Resolution XVI-7 “Black Sea Project”,

Recalling also Resolution XVII- 15 “Regional Black Sea Co-operation Programme”,

Recalling further the implementation of decision of the IOC Executive Council (document IOC/EC-XXV/3 paras 84 and 85) to take action towards sponsorship of the “Co-operative Marine Science Programme for the Black Sea (COMSBLACK)” (document IOC/INF-924) and the support provided by IOC,

Recognizing the urgency of an international effort aimed at the establishment of a scientific basis in support of the effective integrated management of the Black Sea,

Recognizing also that special attention had already been given to specific regional requirements of the Black Sea region, e.g., within the International Oceanographic Data and Information Exchange (IODE) and the Global Investigation of Pollution in the Marine Environment (GIPME) programmes, and especially through the GEF Black Sea Environmental Programme,

Noting the UNESCO support to various intersectorial co-operative initiatives within the Black Sea region, in particular the “UNESCO-Chernobyl” and the “Blue Danube” projects,

Noting also the significance of the Convention for the Protection of the Black Sea against Pollution (Bucharest, Romania, 22 April 1992), and the Ministerial Declaration on the Protection of the Black Sea (Odessa, 7 April 1 993),

Expresses its appreciation to the countries from the region and several countries and donors from outside the region for the support provided to the COMSBLACK initiative;

Reaffirms the decision by EC-XXV to continue actions for IOC to support and sponsor COMSBLACK within the context of GIPME;

Noting the result of the Regional Black Sea Workshop, Varna, September 1994, in the form of a proposal for a regional marine sciences and services programme with initiation through two pilot projects,

Endorses the initiation of the IOC Black Sea Programme in Marine Sciences and Services for an initial period of four years;

Establishes an IOC Regional Black Sea Committee as the management body for the IOC Black Sea Regional Programme, with the Terms of Reference given in the Annex to this Resolution, together with the initial work plan;

Taking note of the proposals and recommendations of the Black Sea Intergovernmental Meeting, UNESCO Headquarters, 7-9 June 1995, in which all Black Sea states participated,

Requests the Secretary to make available the initial support required to facilitate the initial activities of the Regional Committee and to seek additional funding and technical support from governments and donors in order to undertake pilot projects already agreed upon and further elaborated; possible initial activities and related financial implications are given in Annex II to this Resolution;

Further requests the Secretary, in consultation with the appropriate authorities, to elaborate a Memorandum of Understanding regarding scientific co-operation and inputs to the Black Sea Environmental Programme, currently sponsored by the GEF and other donors, in order to promote a coherent region-wide approach to environmental management in the spirit of UNCED Agenda 21;

Requests further the Regional Committee to report on progress of the implementation of the programme at the next session of the Assembly.

Financial implications:

It is estimated that to facilitate expert meetings, exchange and participation of experts in scientific activities, gradual establishment of a communications network and data bases, and annual support from IOC of a minimum of US$ 50,000 will be required, to be supplemented by other UNESCO funding resources, as well as national in-kind and other resources.

Annex 1 to Resolution

Terms of Reference for the IOC Regional black Sea Committee

In accordance with the IOC Manual, Section 5: Guidelines for the Structure and Responsibilities of the Subsidiary Bodies of the Commission (Dot IOC/INF-785, 1989, page 37, in English version):

(i) The IOC Regional Committee should *infer alia* promote, develop and co-ordinate the regional joint marine sciences and services programmes, Identify the requirements for resources, prepare the overview budgets and report to the Governments and the IOC Assembly; in its work it should draw as appropriate upon IOC programmes.

(ii) The IOC Regional Committee for the Black Sea should plan and co-ordinate the marine sciences and services activities of the IOC Regional Programme for the Black Sea, taking into account the relevant provisions of the Convention for Protection of the Black Sea against Pollution, the Black Sea Fisheries Convention, and international programmes carried out by international institutions and organizations (UNESCO, UNPE, WMO, WHO, IMO, IAEA, FAO, UNDP, the World Bank, PHARE, the European Union, etc.), so as to avoid overlaps and duplication of efforts and ensure co-ordination with other relevant activities.

(iii) The IOC Regional Committee should establish close connection with all existing relevant regional programmes, so as to avoid duplications and also help link science and management aspects

(iv) The IOC Regional Committee should be constituted of national institutions identified and committed by the relevant governmental authorities.

(v) The IOC Regional Committee should report on programme implementation, proposals and budget requirements to the IOC Assembly.

Annex 2 to Resolution

Initial tasks for the period 1996-1997

(i) Elaborate and start phased implementation of the two proposed pilot projects, and possibly others, using proposals and specifications already provided by Black Sea states; and adjust implementation in accordance with available resources.

(ii) Identify products and possible economical benefits expected to result from the pilot projects and the programme as a whole.

(iii) Establish in a phased manner a regional communication network adequate for and adjusted to the data exchange needs.

(iv) Prepare project proposals for donor applications, using the identified experts products and their relationship to or input to the management of the Black Sea marine environment.

(v) Establish dialogue and co-operation as required with other IOC programmes and on-going relevant regional programmes and projects.

(vi) Gradually establish verified scientific data bases for applications, e.g., in relation to emergencies, coastal zone pollution, disturbances, erosion and other management-related problems.

(vii) Gradually establish a combined modelling and observation capacity which can be used in forecasting environmental conditions in the Black Sea.

ANNEX III

DRAFT PROPOSAL FOR AN IOC BLACK SEA REGIONAL PROGRAMME IN MARINE SCIENCES AND SERVICES

1. INTRODUCTION

The basis of this initiative is the discussions at the IOC Assembly and the General Conference of UNESCO (see section 2). The purpose is to relate to other on-going activities in a coordinated fashion, supplement these activities and to gradually establish a functioning intergovernmental mechanism for scientific cooperation. A draft proposal for a regional cooperative programme in marine research and systematic observations was circulated to the Black Sea States and provided to the IOC-EC in June 1994. It was reviewed by the Workshop in Varna, Bulgaria, 14-16 September 1994. This draft represents the result of the review. The first draft was prepared by an IOC consultant in cooperation with the Bulgarian Academy of Sciences.

The proposed IOC Black Sea Regional programme takes into account the special natural features of the Black Sea, such as:

(i) The ratio of the water catchment area to the surface are of the Black Sea is 5 to 1, i.e. an order of magnitude higher than the ration for the global ocean.

(ii) The high river discharge and semi-enclosed nature of the Black Sea, which limits strongly the water exchange with the world ocean and causes and exceptionally strong water stratification.

(iii) As a result of poor ventilation 90% of the water masses in the Black Sea are anoxic, thus constituting the largest body of anoxic water masses in the world.

(iv) The humid climate of the Black Sea watershed and the high river discharge result in a high level of terrigeneous sedimentation in the Black Sea;

(v) The specific geological structure and the recent history of the Black Sea is marked by features of a micro-ocean passing through stages of lacustrine and marine phases of development, and representing a contemporary model of ancient metallogenic and oil and gas generating basins.

(vi) The Black Sea comprises a wide spectrum of living and non-living resources (including hydrocarbons), as well as resources for recreational activities, which, considering the urban development and economic structure of the coastal area, sets the stage for a major social and economic development for the coastal states of the Black Sea.

(vii) A generally new situation in international relations, resulting from the coming into force of the Convention for Protection of the Black Sea against Pollution and the start of the Black Sea economic collaboration.

(viii) The great interest in studies of Black Sea problems, not only in the Black Sea coastal states but also in international organizations and among scientists from countries outside the region. A number of programmes and projects are carried out in the Black Sea at the present time, and coordination and cooperation are required, as well as pooling of resources.

In summary, the complexity of the processes, the unique phenomena and the development in the region call for the establishment of a regional mechanism of the Black Sea coastal states, which can help ensure coordination and cooperation in scientific studies, strengthening of systematic observations of the Black Sea and the related data exchange, as well as the use of limited resources in an optimal way. Such an intergovernmental mechanism can also help sustain the relevant parts of the on-going activities and help maintain the long-term joint scientific studies, systematic observations and monitoring of the Black Sea. Through such a mechanism scientific information and its interpretation may be provided to Governments and forecasting tools established and used for supporting management and sustainable development.

Resolution IOC-XVII-15, which constitutes one base for this initiative, emphasizes the need for assistance to support the development of a workplan by a Regional Association for the Black Sea, with a view

to establishing a Regional Committee for the Black Sea as an IOC regional subsidiary body for cooperation in this region. The proposal is that such a Regional Committee for the Black Sea should constitute the required intergovernmental mechanism identified above. In this way, an orderly communication between the Governments on marine scientific cooperation and systematic observations can be achieved, at the regional and global levels, through IOC.

Clearly, this initiative must take into account the on-going activities and avoid overlaps and duplications. For this coordination is required. The important on-going activities include: the GEF-supported Black Sea Environmental Programme; the NATO-TU programme (modelling, waves and others); the EROS 2000 extension to the Black Sea; the Convention for Protection of the Black Sea against Pollution; the UNEP Regional Seas initiative; the joint scientific programme COMSBLACK, also supported by IOC.

The present proposal addresses the scientific elements only, and the need to help ensure that scientific findings and the related forecasting tools are brought to the attention of Governments for use in making the development and management decisions. The initiation of this proposal will also lead to the enhancement of participation and benefits of the Black Sea states from the activities and programmes of the IOC at large. In light of the follow-up to UNCED and the coming into force of UNCLOS, this is highly desirable, together with the resulting strengthening of the regional components of the IOC global programmes. In this context, the proposal, of course, builds on the experiences of the IOC over about 20-30 year in other regions.

2. DECISIONS AS BACKGROUND FOR THE DRAFT PROPOSAL

The draft proposal for an IOC Black Sea Regional Programme in Marine Sciences and Services is based upon:

(i) The Resolution of the 27th General Conference of UNESCO (Dec. 27 C/5 1.21 and DR 190 of 1993), which advises "I ***'adoption d'un Projet régional de recherches integrées et de surveillance continue relatif à la mer Noire".***

(ii) The Resolution XVII-15 of the IOC Assembly, which

> ***"instructs the IOC secretary to explore ways of assistance in addition to available UNESCO Regular Programme funds, in particular through international and regional funding agencies, to support development of a work plan by a Regional Association for the Black Sea, with a view to establish a Regional Committee for the Black Sea as an IOC regional subsidiary body for cooperation in this region;***
>
> ***Requests the IOC Executive Council, at its Twenty-seventh session, to consider the further implementation of this resolution in the light of possible cooperation with other international and regional bodies".***

There exist several instruments concerning the Black Sea, which will have to be taken into account. These include the Convention on the Protection of the Black Sea against Pollution, and the related Ministerial Declarations.

The proposed regional cooperation may benefit from the experiences in other regions within the IOC regional subsidiary bodies. The basic approach is that the cooperation is built on national institutions and the priority interests of these institutions to respond to national needs and problems. The regional cooperative programme needs to be driven from inside the region, address priority interests of the region and build on and include national programmes and resources. The support for the implementation of the programme can be national, international, from IOC and other similar bodies, and from national or international donors, The structure and functions of the IOC regional subsidiary bodies are constituted and defined in the IOC Manual, Part 1.

3. OBJECTIVES OF THE PROGRAMME

The general goal of the programme is to provide scientific support for sustainable development of the Black Sea region and for environmentally sound utilization of its natural resources. The derived major objectives of the programme are:

(i) To encompass important scientific issues not fully covered by other Black Sea regional programmes, thus enhancing the scope of the Black Sea oceanography on a long-term basis.

(ii) To interact with the activities of other on-going Black Sea programmes and projects.

(iii) To promote the implementation of the IOC-IODE programme at the regional level, including the strengthening or establishment of National Oceanographic Data Centres, with regional exchange of data and information, in coordination with the related on-going activities.

(iv) To promote coordination (including financial) among states in the region and interested international organizations in scientific studies of priority problems of the Black Sea.

(v) To assist, through a scientific input and provision of forecasting tools, the governments of the Black Sea states and relevant national and international institutions in their decision making, formulation of control measures and other activities, arising from the Convention for Protection of the Black Sea against Pollution, the Convention on Fishing in the Black Sea, the Declaration on Black Sea Economic Collaboration and other documents with national and international status.

(vi) Promotion of capacity building and training of experts, and cooperation in marine science educational and training programmes in the region.

(vii) To encourage the development of hudro-acoustical and other systems for underwater observations, including at the bottom.

(viii) Promotion of elaboration and harmonization of regulations and legislation, pertaining to marine scientific research and systematic ocean observation; (e.g. in relation to UNCLOS), of the Black Sea states in respect of sustainable development and protection of the environment in the Black Sea, and harmonization of standards and methodology in marine scientific research, systematic observations and related training.

The financial and other resources for the implementation of a regional cooperative programme of this intergovernmental nature are obtained normally from three sources:

(i) national contributions in the form of national institutions committed to participate with their staff and equipment;

(ii) international contributions from the IOC, and possibly from other co-sponsoring bodies, which are mostly for seed money and secretariat support for the organization of meetings, travel of experts, publications, etc;

(iii) international (bi- or multilateral) contributions from donors, which may be obtained through a consolidated approach to donors.

4. STRUCTURE AND SCOPE OF THE PROPOSED PROGRAMME AND RELATED ACTIVITIES

The structure and the scope of the proposed Programme has been designed to avoid, as far as possible, overlapping with and duplication of on-going activities.

This document constitutes a draft working document for an intergovernmental meeting of the Black Sea Coastal States and for the consideration by the relevant governmental institutions before such a meeting. The intergovernmental meeting should aim at agreeing on a programme or a pilot-phase thereof, This action of preparing the working document through the deliberations of the Workshop in Varna, Bulgaria (1 4-17 September 1994), on the basis of a preliminary draft prepared by an IOC consultant in cooperation with the Bulgarian Academy of Sciences, has been taken in response to the Resolution of the 27th General Conference of UNESCO (Dec. 27 C/5 1.21) and its DR.190.

4.1 STATUS OF THE REGIONAL PROGRAMME

The programme should be established as an IOC Black Sea regional programme in marine sciences, services and related training, carried out in cooperation among the coastal states of the Black Sea and other

interested states and institutions. It is primarily focused on long-term activities, without ruling out important short-term issues.

The programme is open not only to scientists from all coastal countries of the Black Sea region, but also to other interested IOC Member States and organizations, as well as scientific institutions from outside the region.

4.2 POTENTIAL PROJECTS WITHIN THE FRAMEWORK OF THE REGIONAL PROGRAMME

Projects within the IOC Black Sea Regional Programme should be of a scientific character focused on problems not sufficiently covered by other programmes and projects.

Potential projects to be considered by the interested parties, without any order of priority:

A l . Environmental control of the dynamics of living resources in the Black Sea.

A.2. Scientific aspects of sustainable development and management of the coastal zone.

A.3. Human health consequences of environmental degradation of the Black Sea environment

A.4. Harmful plankton blooms and harmful plankton in the Black Sea ecosystem.

A.5. Dispersion of sedimentary material in the Black Sea and its evolution in the recent geological history of the basin (pilot project II).

A.6. The Black Sea Observation and Prediction Research Project: the initiation of a regional Black Sea GOOS (pilot project l).

A.7. Promotion of elaboration and harmonization of national legislation regulating marine scientific research and related protection of the marine environment of the Black Sea, and harmonization of standards and methodologies in marine scientific research.

These items are to be seen as indicative only. They only include the **scientific** components of the issue. The further planning must ensure avoidance of duplication with on-going activities.

4.3 DATA MANAGEMENT AND INFORMATION EXCHANGE

The atmospheric and oceanographic processes of the Black Sea region affect all the countries of the region. Joint cooperative investigations of these processes and joint acquisition, accumulation, processing and dissemination of both meteorological and oceanographic data would therefore benefit all the coastal states. In cases of forecasting emergency situations, the possibilities of receiving and disseminating meteorological and oceanographic data through the Global Telecommunication System (GTS) of WMO acquire special significance.

The make full advantage of the information on the Black Sea, development of an adequate structure for acquisition, quality control in common standard, storage and dissemination of the data from all international research programmes of the region is required. It is essential to adapt the general concept, scope and strategy of the programme to the requirements of donors and users and in accordance with the principles of IODE.

The major activities may include:

(i) accumulation and dissemination of data, using the capacity of the telecommunication network and of the existing regional centres of GTS in the Black Sea region;

(ii) quick and easy contact with the operational terms forecasting extreme situations and events caused by natural and anthropogenic factors, including dissemination of emergency information;

(iii) usage of Geographic Information System (G IS) for specific applications;

(iv) operating major international databases for marine scientific and technical information and scientific references and publications.

In order to initiate the work in an orderly and step-wise manner it is suggested that consideration be given to one or two pilot projects. The outlines of these projects are presented in Annex 2. The initial ideas of further specifications of the proposed potential project areas, defined above in section 4.2, are presented in Annex 1. These are, of course, only indicative and not at all binding.

The selection of projects or activities in the IOC regional bodies is usually based on the interests of the regions and the national priorities. The regional projects draw on the global IOC programmes, and can be components of those. However, they are not mere images of those.

They are adjusted to the regional needs, national potentials and programme actions. The regional programme is driven from within the region.

5. ORGANIZATION, MANAGEMENT AND COOPERATION

(i) It is proposed that the draft programme for joint marine research of the Black Sea be established as an IOC Black Sea Regional Programme. It is furthermore proposed that this draft programme be reviewed, adjusted as required and adopted by an intergovernmental meeting of the Black Sea Coastal States. This intergovernmental meeting could also address the possible establishment of an IOC Regional Committee for the Black Sea. The IOC Governing Bodies have adopted several Resolutions relevant ot these proposals, including: Resolution XVII-15 (March 1993) - Regional Black Sea Cooperation Programme; Resolution XVI-7 (March 1991) - Black Sea Project; Resolution EC-XXIII-4 (March 1990) - Black Sea project.

(ii) A Regional Committee for the Black Sea as an IOC regional subsidiary body should be established, modelled upon the IOC practice. Terms of reference for the proposed IOC Regional Committee for the Black Sea should be elaborated, on the basis of the statutory terms of reference of such bodies within the IOC (IOC Manual, Part I).

(iii) The IOC Regional Committee should *inter alia* promote,develop and coordinate the regional joint marine sciences and services programmes, identify the requirements for resources, prepare the overview budgets and report to the Governments and the IOC Assembly.

(iv) The IOC Regional Committee for the Black Sea should coordinate the marine sciences and services activities of the IOC Regional Programme for the Black Sea, taking into account the relevant provisions of the Convention for Protection of the Black Sea against Pollution, the Convention on Fishing in the Black Sea and international programmes carried out by international institutions and organizations (UNESCO, UNEP, IAEA, FAO, UNDP, the World Bank, PHARE, the European Union, etc.), so as to avoid overlaps and duplication of efforts and ensure coordination with other relevant activities.

(v) Possible areas of regional cooperation:

Adoption and application of new methods and inter-calibration of scientific methods and equipment;
Joint research activities;
Joint cruises with research vessels in the Black Sea and regular exchange of information on the use of research vessels;
Exchange of oceanographic data and information;
Networks of scientific institutions in the region;
Joint publications;
Education and training of specialists;
Organization of conferences, workshops and seminars on topics of the programme;
Exchange of scientists.
Help identify the adequate financial resources for carrying out the Regional Programme.

These items, or areas should be seen only as indicative. A stepwise procedure of starting the cooperation will have to be used. It may be most appropriate to start with one or two pilot projects, which could be initiated on the basis of existing resources. This would constitute the initiation phase.

BASIC ELEMENTS OF TERMS OF REFERENCE OF PRIMARY SUBSIDIARY BODIES

Function / Type of Primary Subsidiary Body	Programme of Work & financial requirements	Overall Policy Recommendation	Technical Policy Making	Reporting to Parent Body	Programme Development: Planning	Promotion	Co-ordination	Scientific advice and guidance	Standard setting and instrumentation	Co-operation	Evaluation	Creation of Subs. Bodies: TT (1)	GE (1)
Scientific and/or Technical Committee	x	x	x	x	x	x	x	x	x	x	x	x	x
Sub-Commission	x	x	x	x	x	x	x	x	-	x	x	x	x
Regional Committee	x	x	x	x	x	x	x	x	-	x	x	x	x
Task Team	-	x	-	x	x	x	x	x	x	-	-	-	-
Group of Experts	-	x	-	x	x	x	x	x	x	-	x	-	-

Programme Development

Planning

"Prepare a detailed plan of action for implementation of the accepted programmes, projects or activities."

Promotion

"Within its field of responsibility, promote the accepted programmes, projects or activities among the interested Member States and/or in the marine scientific community, as necessary, and make, if appropriate, recommendations to the (name of the parent body in brief) to this effect."

Co-ordination

"Identify the Member States' institutions, the collaborating organizations, or individuals, as the case may be, participating in the implementation of the adopted programmes, projects or activities and ensure that each such entity is made fully aware of the work it is expected to undertake and how it relates to the work of the other participating entities."

Scientific and technical advice and guidance

"(a) Provide advice to the participating entities, as defined above, on appropriate methods, procedures and operations for the optimum implementation of the agreed programmes, projects or activities;

(b) undertake specific tasks (e.g., prepare scientific and technical reports, reviews, guidelines), if appropriate, to help ensure optimum implementation of the agreed programmes, projects or activities."

(1) Provided no costs fall on the Commission or the necessary costs have been allocated by a Governing Body.

Standard setting and nomenclature

"Recommend and co-ordinate the development (with other international organizations) of standards, reference materials and nomenclature for use in marine science and related ocean services."

Co-operation

"Co-operate, as appropriate, with other bodies, such as subsidiary bodies of the Commission or of other international organizations, whether governmental or non-governmental, global or regional, at an equivalent (or approximately equivalent) hierarchical level, as decided by (the name of the parent body in brief)."

Evaluation

"(a) Examine the results of the adopted programme, projects or activities at regular intervals determined by their nature;

(b) make recommendations to (the name of the parent body in brief) on the application of these results; and

(c) provide advice to (the name of the parent body in brief) on desirable improvements in programme conception or execution."

Other Functions

Programme of work and financial requirements

"Prepare, within its field of responsibility, and with the assistance of the Secretary, proposals for a two-year programme of work and financial requirements, including an indication of priorities, for submission to the Secretary, for his use in the preparation of the Programme and Budget of the Commission."

Overall policy recommendations

"Make recommendations to (name of parent body in full) on the Commission's overall policy relevant to the (name of subsidiary body, in brief)'s field of activity."

Technical policy-making

"Within its Terms of Reference, determine such technical policy as may be required to effect or enhance the implementation of adopted programmes or projects."

Reporting

"Report to (name of parent body in full) at intervals to be decided by the (name of parent body in brief)."

Creation of Secondary Subsidiary Bodies

The right to create a Secondary Subsidiary Body is indicated in the Table above. All Secondary Subsidiary Bodies shall be established initially for one intersessional period only (see section on Frequency of Meetings, below). Further extension shall be by specific decision at each session of their respective parent bodies.

In general, the Guidelines given above apply also to Secondary Subsidiary Bodies. It is clear, however, that Secondary Subsidiary Bodies have no authority to create tertiary subsidiary bodies. Nevertheless, informal sub-groups (e.g., Sub-groups of Experts) may be formed to deal with specific aspects of the work of a subsidiary body but shall have no formal status and their activities shall be the responsibility of the subsidiary body alone.

ANNEX IV

COOPERATIVE programmes RELATED TO THE BLACK SEA

Black Sea Environmental Program	NATO-TU Black Sea	EROS-2000 Black Sea	CoMSBlack
1) Emergency Response* 2) Routine Pollution** Monitoring 3) Special Pollution*** Monitoring 4) Protection of biodiversity 5) Integrated Coastal Zone Management 6) Fisheries**** 7) Data management and GIS 8) Information System for the Black Sea 9) Environmental Economics 10) Harmonization of Environmental Quality Criteria, Standards, Legislation and Enforcement	1) Ecosystem modelling of the Black Sea 2) Common database management system for environmental and oceanographic data 3) Training, laboratory visits, seminars, workshops 4) Use of satellite images, extensive in-situ observations	1) Integrated approach to problems of eutrophication, contaminants, particle transfer, sedimentation and biogas production of the NW Black Sea 2) Establishment of fine resolution coupled hydrodynamical biogeochemical models of the river and marine systems	1) Oceanographic processes 2) Anthropogenic inputs & long-term climatic variability 3) Development of realistic ecological models 4) Establishing long-term database of fluxes of water and biogeochemically active materials
	NATO-TU SEA WAVES 1) Enhancement of a regional network for wave measurement and modelling	IAEA-CRP 1) Assessment of the inventory of radionuclides in the Black Sea 2) Evaluation of future trends of radioactive pollution 3) Application of tracer methods in the studies of physical circulation and eutrophication processes in the Black Sea	WMO 1) regional study of transboundary air pollution (in conjunction with ECE)

Nate: This table is based on the information kindly given by the Global Environment Facility Black Sea Environmental programme. We do not ensure that it is all-encompassing. However, it is a good guide.

* with technical inputs from IMO
** with technical inputs from GEMSI (of GIPME) and WHO
*** with technical inputs from GEEP (of GIPME) and IAEA
**** with technical inputs from FAO

ANNEX V

NATIONAL STATEMENTS PRESENTED AT THE MEETING"

A. BULGARIA

Национален Институт по Метерология и Хидрология
Българска Академия на Науките
National Institute of Meteorology and Hydrology
Bulgarian Academy of Sciences
Цариградско шосе 66 Tsarigradsko chaussee 66
1784 София, България 1784 Sofia, Bulgaria
tel: (+3592) 722272, 880380, fax: (+3592) 884494

Dear Ladies and Gentlemen,

I would like to make a brief presentation of the national statement concerning the "Draft proposal for an IOC Black Sea regional programme in marine sciences and services", the related activities and the resources supporting them.

We consider that the basic principles might be the following:
- Maximum utilisation of the national potential of the participating countries including extensive participation of ail institutions, organisations, etc., involved in similar activities,
- Wide exchange of data and other products. Each participating site must have equal access to all products, services, reports, data, etc., developed under the project. Each Site participating into the project must also support its implementation.

These principles are in unison with the basic principles of IOC, WMO and IODE.

We consider as very important the IOC proposal to establish a "Regional Committee" for co-ordination of the Programme and implementation of the projects. The main advantage of this idea is that the "Regional Committee" will support and facilitate international contacts and it will strengthen the national efforts. In other words the "Regional Committee" will contribute to the better co-ordination both on international and on national level-

We consider that the scientific potential of the institutions in the region is very high and with better co-operation and co-ordination we expect significantly more important results to be achieved in the study of the Black Sea "and in the development of specialised services as the activities of the region require.

During the last years the countries surrounding the Black Sea constantly play increasing attention to its problems. In this regard we consider that the counties bordering the sea do not use in maximum degree the available potential of the WMO GTS and especially

• Note: These are reproduced here as given

its possibilities for operational data exchange and data access. During the last decade the GTS became efficient transfer medium not only for meteorological but for many other kinds of environmental data - oceanographic, hydrological, seismic, warnings of LAEA, etc. The oceanographic data in the GTS are transmitted under several Programmes of WMO and IOC.

We consider that the potential that GTS could provide to all different researches of the Black Sea are not effectively used. Many users in the region are not involved properly, Our proposal is based on the fact that the expanding of GTS data exchange may be achieved with minimum financial support using the available telecommunication resources in the region. GTS and existing RTH Sofia of WMO may be the key element in the implementation of the regional GOOS project. The activities under the Pilot Project I are of primary importance for the JEF Emergency Response Activity Centre in Varna. For the time being we have received ondy the MHI proposal that we support. We consider that the problems of the free data exchange would have more extensive presentation.

We would support the extended contacts between the institutes in the region as a fundamental principle of the proposed project for the regional GOOS. Having in mind some practical considerations we propose that in this project two different kinds of mutually connected activities have to be presented:
- Operational activities.
- Scientific activities with very close relationship with the operational ones.

We continue supporting the Pilot Project II considering it as a beginning of a complex regional programme. The main goals of this project were defined during the Varna-94 meeting. The developing of the second project can begin with unifying the methods of investigation, fully using at the same time the existing laboratory facilities of the Black Sea countries. Our proposal was further developed in the Bulgarian proposal sent to the secretary of IOC. The co-ordination of the project might be assigned to 10 - Moscow which is the centre having highly experienced scientists and traditions in this field.

Following the “Draft proposal . ..” the main direction of our activities is to use the existing national resources in order to extend marine scientific research and services to support the exchange of information, forecasts, data and other specialised activities. We consider useful the step-by-step implementation of the Programme and of the two Pilot projects too. In this sense the proposed “Regional Committee” will play important role in the planning, co-ordination and potential co-operation with other existing programmes, structures, for example JEF, LAFA CRP on Black Sea, EROS, COMSBLACK, the NATO programmes, etc.

Existing national potential for implementation of the project and for supporting GOOS activities

Data availability and collection:

- Coastal network - we are ready to include step-by-step additional data in the GTS from other stations if the other participants accept to do the same. These additional data will be distributed to all active participants and the data contributors only.
- Ships of opportunity - the existing ship messages could be exchanged too.
- Research vessels - only under certain agreement between the participants and provided partial financial support.
- System of buoy stations in experimental mode. Some blocks of this system require further development.

Products and services:

- summaries from the coastal stations for the *T, S* and the sea level;
- daily diagnostic fields and forecasts up to 3 days for the surface winds, waves and storm surge sea level oscillations;
- diagnostic current fields in coastal areas and the global Black Sea circulation and *T, S* fields;
- ecological numerical model of the Black Sea;
- data exchange;
- developed structure for oceanographic data base which can be expanded including different kinds of knowledge.

The activities in this field may be extended and expanded in the hydrophysics. under co-operation with the Black Sea counties.

Products and services under development or to be soon implemented:

- METEOSAT ground station (the finances are provided);
- numerical model for the oil drift (in preparation);

Supporting structures:

- Telecommunication centre RTHSF - Regional Telecommunication Hub of Sofia. Based on bilateral agreements direct channels with all countries of the region are established (Sofia-Bucharest, Sofia-Ankara) or yin be established in very near future (Sofia-Kiev, Sofia-Tbilisi). National hydrometeorological operational data base on ORACLE is under development.
- NODC (it requires strengthening).

- JEF emergency response activity centre in Varna.

Background of the proposed actions:

- the existing facilities of the RTH Sofia;
- the fictions that RTHSF as regional WMO GTS Hub will be charged to take for operational data exchange between the Black Sea counties;
- developed coastal based synoptic stations of each country;
- the proposed WMO project for establishing of one for each Black Sea state automated meteorological station along its shore;
- the existing Internet in the countries.

RESOLUTION

(Proposed by Bulgaria)

1. The Assembly approves the “IOC Black Sea regional programme in marine sciences and services”, proposed at the Varna’94 meeting, consisting of two pilot projects:

2. The Assembly agrees with the Secretary proposal to establish Regional Committee for the “IOC Black Sea regional programme in marine sciences and services” to coordinate the cooperation of Black Sea and’ other interested countries and international organizations for the implementation of the agreed Programme. The regional Committee should establish very close connection with all existing regional progammes as JEF, IAEA CRP on Black Sea, EROS, COMSBLACK, the CEC and the NATO programmes, etc.

3. The Assembly recommends to the Black Sea countries to provide financing of the approved projects with high priority.

4. The Assembly asks the Secretary to all required actions to assure the necessary funds in the IOC short-range plan for supporting the start of multilateral cooperation under the Regional Programme.

5. The Assembly asks the Secretary to introduce proposals in UNESCO, UNDP, World Bank, etc., and other international organisations for financial and technical support of the regional Black Sea projects.

BULGARIAN PROPOSALS FOR DRAFT PILOT PROJECT II

TITLE:

PARTICULATE MATTER FLUX - ORIGIN, DISPERSION, SEDIMENTATION AND TRANSFORMATION

Background :

– Introduction to the problem";

- Relation with other on-going programmes and projects with global and regional status.

Main goal:

Elucidation of the factors and mechanisms of sedimentation and transformation of the particulate flux and providing data for coastal zone management:

– discrimination of the role of the natural and anthropogenic inputs in the sediment flux formation;

- evaluation of the trends of the key factors determining suspended matter flux:
- reconstruction of the particulate matter flux in the recent geological history.

Main aspects:

- historical data inventory relevant to the project;
- assessment of the mechanisms and role of particulate organic matter (POM) production in sedimentation processes;

  factors and mechanisms of suspended matter transformation (biological and chemical) in the water column and in the sediments;

  role of the sediment flux in hypoxia events;

  study of the particle fluxes and the dispersion of the sedimentary material (both biogenic and terrigenouns) from the main sources;

  detailed stratigraphic, sedimentological and geochemical studies in respect to obtain new information on the geological processes in the basin related to its transition from lake to marine type of sedimentation;

  studies on the carbonate system of the sea water in the respect of its role in the processes of sedimentation;

  modelling of sedimentation processes in respect to coastal zone management.

outputs:
- Data collection, exchange, processing and storage.

Approach:
Sampling of suspended matter by Water-samplers and sediment traps:
- Sediment sampling by corer-boxes and corers;
- Remote sensing;
In-situ and laboratory experiments.;
- Onboard and land-base analyses;
- Data interpretation and modelling.

Equipment:
Water samplers
- Corer-boxes;
- Sediment traps
- Hard/software environment for spectral images analyses
- Liquid scintillation counter
- UV-VIS spectrophotometer
- HPLC

Field investigations:
- Co-ordinated international cruises
Episodic events cruises (storms, plankton blooms, upwelling)
- Monitoring on selected polygons synchronous including remote observations

Participating institutions:
- Geological Institute - BAS
- Institute-of Oceanology - BAS
- Institute of Ecology - BAS
- Institute of General and Inorganic Chemistry - BAS
- Solar - Terrestrial Influences Laboratory - BAS

Needed financial support:
- Vessel time;
- Equipment

B. GEORGIA

ოკეანოგრაფიის საქართველოს ეროვნული კომისია

GEORGIAN NATIONAL OCEANOGRAPHIC COMMITTEE

Vice-Chairman prof. Irakli Khomeriki

Mister Chairman,

Dear colleagues,

Let me greet you on behalf of Georgian side and express gratitude to the Intergovernmental Oceanographic Commission - IOC and Dr. G Kullenberg personally for inviting us

My name is Irakli Khomeriki. I am a Professor of the Tbilisi State University, Vice-chairman of the Oceanographic National Committee of Georgia , Expert of the parliamentary commission on Environment protection and Natural Recourses.

Unfortunately, we were not able to take part in Varna meeting only because of financial and organizational problems.

It is only one year since Georgia became the member of IOC and half an year since national committee began it's activities.

We are trying to coordinate scientific and educational activities according to the international cooperation programs and to establish oceanography information center, which will be completely involved in the global system of information. This is our priority today First of all it concerns the Black Sea Region.

National Committee of Oceanography of Georgia completely shares the point of view of IOC, that according to the 27th General conference of UNESCO, our activities should be in line with Black Sea Environment Programme(BSEP) and implemented in close co-operation with Black Sea Programme Coordinating Unit (PCU), In this concern we have define suggestions, which will be presented to the PCU representatives via Georgian coordinator here or in Istanbul.

I think it's not necessary to explain to our Black Sea neighbors, why Georgia is somewhat legging in terms of organizational activities carried out in the Blat\ Sea Countries after signing the Bucharest Convention. Currently the political and economic situation is stabilizing and it will promote intensification of our further cooperation.

Georgia has good scientific potential. We had well developed and relatively poorly equipped obsevatory network. Nowadays, due to well known reasons infrastructure is destroyed, regular sea and land hydrological observations are nearly stopped. We have difficulties in saving the observatory network. In given circumstances we hope for active help from international organizations We will try to make this period of help shorter and promote complete involvement of Georgia in international cooperation.

First of all I would like to ask IOC for mediation to include as an additional item in the nearest plans of BSEP sending of highly skilled specialist to Georgia. with purpose to investigate our possibilities and needs for establishing monitoring centers in Tbilisi and Batumi. The same problem will be brought up by our coordinator to PCU.

We hope to restore our cooperation with our old and new colleagues soon which is important for investigation and solving of the Black Sea and coastal zone problems.

Let me express Georgian side's satisfaction on the activities of IOC on the Black Sea problems and tell you about our proposal with regard to realization of the Black Sea Regional Programme.

Despite the absence of our experts at various meetings, we were closely following the process of creation. refinement and institutional development of the Programme.

Of course efficiency of Programme realization will depend on the integration of scientific potential of separate countries. Of course, this potential is not equal, but each country of Black Sea region has its own. unique experience and knowledge, which can not be replaced with experience of other countries, We would like to ask you. our partners to consider the wish of Georgian side with understanding in order to save it's scientific potential in the field of oceanography with your help

Expressing the general support to the BCRP, I would like encourage it in priorities on Environment protection and unification and technical supply of information agencies.

The most important point the national committee pays attention to is the center of Biodiversity of black Sea Environment Programme (Batumi, Georgia), which partially determines our orientation. It is probably known to you, that presented to the World Bank (WB) National Programme on the Black Sea and Coastal Zone Biodiversity was approved by WB Environment protection strategy plan for Georgia has been elaborated. National Committee is working on its proposal in this direction. As an example we cart mention the problem of protection and restoration of the Atlantic Sturgeon, which still remains in Georgia.

I do not wont to take too much of your time," so I will briefly describe our proposals and suggestion about two pilot projects. Their objectives and mechanisms of action were discussed in Varna last year. In our opinion, cooperation between IOC, WMO and UNEP in the development of the Global Ocean Observing System (GOOS) is undoubted mechanism for

project realization, This is both natural and logical. National Oceanographic Date Centers should be the background of the activities.

We will need some help for establishing a modem center and supply it with data acquisition. data processing, data quality control and data exchange, provide with needed technique and materials for analysis research vessel. which is in Batumi

We join to the suggestion of the Ukraine to organize regular observations of hydrometeorological characteristics in some basic points in exclusive economic zones of each country - participant with the goal of elaboration general approaches.

We suppose that the importance of deep hydro optical analyses should be mentioned in the text. From this point of view, we have some experience in investigation of sulfur-hydrogen dynamic up level in Gagra-Poti line

Please, take into account the following institutes-participants from Georgiain this project:

· The center of hydrometeorology and Environment Monitoring of Georgia.
- Institute of Hydrology and Meteorology;
- Tbilisi State University;

As for Pilot project II. We have list of scientific activities.' agreed with main aspects of the project. In this directions different scientific centers of Georgia are working, To my perspective they should be discussed and agreed with project coordinator - Moscow Oceanography institute.

According to preliminary opinion the following Georgian institutes might participate in this project:

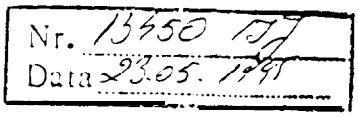
1. institute of water management and ecology.
2. Institute of physics and Organic Chemistry
3, Tbilisi State University

Also, I suppose, that Black Sea problems should be covered on the central conference of UNESCO, which will be held in autumn.

Thank you for your attention.

C. ROMANIA

MINISTRY OF WATERS, FORESTS AND
ENVIRONMENT PROTECTION
ROMANIA



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
1, rue Miollis
F-75732 Paris Cedex 15
France

Attn : Dr. G. Kullenberg
Executive Secretary IOC

STATEMENT

Romania, through the Ministry of Waters, Forests and Environment Projection confirmed by letter 357/21 February 1995, its interest in the IOC Black Sea Regional Program in Marine Science and Services. proposed at the regional workshop in Varna. Bulgaria, between 14- 16 September 1994, and highly appreciates IOC concern and efforts for its support to scientific activities in the Black Sea.

The suggestion of creating a Regional Committee for the Black Sea, as an IOC regional subsidiary body, acting as a suitable intergovernmental mechanism for regional co-operation, and dialogue, is also welcomed.

The main local partner proposed in this new Black Sea initiative is the Romanian Marine Research Institute (RMRI) in Constantza, already engaged in the Convention on Fishing in the Black Sea (1959), the Convention for Protection of the Black Sea against Pollution (Bucharest/ 1922), the Odessa Ministerial Declaration (1993), the UNEP Regional Seas initiatives, the joint scientific program CoMSBlack - also supported by IOC, (1991), the GEF - supported Black Sea Environment Program (1992), the NATO TU - Black Sea programmes - modelling, waves, others (1994), the EROS 2000 extension to the Black Sea (1995), as well as other international programmes carried out by international institutions and organizations (UNESCO, UNEP, UNDP, FAO, IAEA, ESRB, ICSEM, GFCM. NAFO, CECAF, EIFAC, IMO, World Bank, PHARE, the European Union).

RMRI is also familiar and involved with all six potential projects to be considered in the IOC Black Sea program (ICZM, sedimention, plankton blooms, living resources, human health, national legislation/standards/methodologies) and is interested in the seventh one (initiation of a regional Black Sea COOS).

RMRI co-operates with other institutes, like the Romanian Center for Marine Geology and Geoecology (RCMGG), the National Institute for Meteorology and Hydrology (NIMH), the Research and Engineering Institute for Environment (REIE), and the Danube Delta Research and Project Institute (DDRPI), in the fulfillment of some particular projects.

The program is supposed to complete the existing Black Sea research and management programmes, without duplicating and overlapping already assumed tasks and activities.

The long-term extension of this program is considered as very important, in order to assure a better continuity of the Black Sea programmes with special emphasize on critical environmental topics.

RMRI is interested in all possible areas of regional co-operation mentioned in the original proposal, making use of the achievements and experience presently gained within the common enterprises approached between the Black Sea countries and different other regional and/or international bodies since 1990.

A certain financial assistance from IOC adress the development of priority issues interesting the whole Black Sea area is desirable and would be strongly acknowledged.

p.p. Ioan Jelev,
Secretary of State MWFEP

D. RUSSIA

Proposals of Russian side for an IOC Black Sea Regional Program in Marine Sciences and Services.

Having considered the IOC materials and the international program CoMSBlack, we propose some key problems which define the main features of the Black Sea hydrophysical regime, for a development.

We should take part in elaboration of the pilot project N2, presented earlier. And now we want to suggest for your approval new pilot projects on problems A.8 and A.9. We consider them to be the most prior ones for the solution of the immediate ecological problems. We are ready to present some more pilot projects on the rest problems, which we have proposed, if they will be approved.

In item 4.2 we suggest to make the following addition:

A.7. THE STUDIES OF DYNAMIC AND THERMOCHALINIC PROCESSES IN THE CENTERS OF CYCLONIC GYRES AND EDDIES where an active interaction of surface and deep waters is developed under the influence of the deep water kinematic rising, convective mixing of the surface waters and internal waves. As the result of this interaction, the following processes take place there:

- the complete oxidation of hydrogen sulfide in the rising deep waters and the formation of the redox-zone;
- the formation of the cold intermediate waters supplying the cold intermediate layer in the Black Sea;
- the replenishment and renewal of the surface waters by the more clean deep waters which make the main contribution to the formation of the surface water mass in the Black Sea;
- the provision of the surface water bioproductivity with biogenous elements (nitrates, phosphates) of the deep origin;
- the balanced water exchange between the oxygen and hydrogen sulfide zones which leads, in the mean perennial aspect, to the fixed depth of their boundary surface in the Black Sea. That is why no hydrogen sulfide cataclysms can threaten it.

The above mentioned processes which take place in the centres of cyclonic gyres in winter, show that the problem of mathematical modeling of the main dynamical processes for these key regions of the Black Sea cannot be put off.

A.8. THE STUDIES OF DYNAMICAL AND THERMOCHALINIC PROCESSES IN THE NEARSHORE ZONE OF THE BLACK SEA (Between the Main Black Sea Current and the shore)

The studies of water dynamics and structure in the nearshore zone of the Black Sea during last 5-10 years show convincingly that there take place original and rather little studied, but most important hydrodynamical processes which exert a great influence on the hydrological regime of this basin as a whole:

- The meandering of the Main Black Sea current and the generation of the nearshore anticyclonic eddies which are traced along the whole Black Sea coast.
- The interflow of the open sea waters and contaminated shelf waters in the nearshore convergence zone which passes through the middle of the nearshore anticyclonic eddies and covers the whole sea along its perimeter.
- The activity of surface water sinking within the nearshore convergence zone which coincides with the kinematic sinking of waters along the periphery of the main cyclonic gyres of the Black Sea.
- The accumulation and utilization of anthropogenic contaminants in the processes of interflow and sinking of the surface waters in the nearshore zone of convergence and gradual contamination of the deep waters to maximum permissible concentration by the most resistant contaminants.
- The kinematic rising of contaminated deep waters to the surface at the centres of the main cyclonic gyres may close in due time the transport of contaminants in the circuit of transverse water circulation, and then an ecological catastrophe for the whole Black Sea becomes possible.
- Just total contamination and not a problematic hydrogen sulfide infection is most dangerous for the ecological state of the Black Sea at present.
- The study of secular klimatic variability in the atmosphere and hydrosphere demonstrates that a secure balance is established in the water exchange between the oxygen and hydrogen sulfide zones of the Black Sea on the mean perennial scale. That is why no hydrogen sulfide cataclysms can threaten it.
- The importance of mentioned above hydrophysical processes in ecological state of the nearshore zone and the whole Black Sea requires to create mathematical models for solving urgent ecological problems.

A.9. Fluxes of pollutants in the modern sedimentogenesis of the Black Sea.

A.10. Processes of selfpurification in the Black Sea.
- Selfpurification in the course of sedimentation.
- Selfpurification in the course of biofiltration.
- Selfpurification in the course of horizontal and vertical water circulation.

A.11. Hydrogen sulfide contamination in relation of anthropogenic impact.
- Hydrogen sulfide contamination of near bottom shallow water.
- Fluctuations of the surface of hydrogen sulfide contamination in deep sea and their nature.

A.12. Geological backgrounds of geoecological prognosis of the Black Sea.

- Trends of the tectonic evolution of the deep-sea depression in Neogen-Quaternary period.
- Evolution of the palaeoenvironment of the Black Sea sedimentary basin in Neogen-Quaternary period as an effect of the sea level and climate fluctuations.
- Nature and evolution of stagnant basins with hydrogen sulfide contamination of near bottom water.

Pilot project for problems A8:

PROPOSALS ON THE STUDIES OF STRUCTURE AND DYNAMICS OF RUSSIAN ECONOMIC ZONE WATERS

TITLE The studies of hydrophysical processes and water dynamics in the nearshore zone of the sea (the Russian sector of the Black Sea as an example).

BACKGROUND INFORMATION The importance of the nearshore zone studies is dictated by complex physical and dynamical processes taking place there, and also by its specific role in the ecology of the sea. The complexity of hydrophysical and

hydrodynamical processes in the nearshore zone is stipulated by the interaction of sea waters and river discharge, the water drift onshore and offshore, the internal waves, the specific character of the nearshore circulation, the meandering and eddy making which form a wide range of space-time variability of hydrophysical and hydrochemical fields and their vertical structure transformation.

On the basis of experimental studies the information is presently obtained about the hydrological structure and space-time variability of hydrophysical parameters of the nearshore waters, the influence of meanders and eddies on the dynamics in the nearshore zone. The reasons of the nearshore anticyclonic eddy generation are found out and their role is identified in the formation of a specific (bimodal) regime of the nearshore currents and nearshore convergence zone. But in order to investigate hydrophysical and hydrodynamical processes more profoundly and to use the results in applied purposes the further experimental and theoretical (model) studies of the nearshore zone are necessary.

These studies agree with the present-day projects and programs such as Russian project "The Black Sea", CoMSBlack and are their natural addition and continuation.

MAIN GOAL The hydrophysical processes and water dynamics in the nearshore zone are studied mainly on the part of quality. The goal of further investigations is to study in detail the whole complex of interacting processes, to obtain its quantitative characteristics and, on the basis of these data, to develop adequate models of the nearshore zone. The further model studies for different starting conditions (natural and anthropogenic) allow to obtain the necessary information for different applied purposes and primarily for the ecology of the nearshore zone and the whole Black Sea.

MAIN ASPECTS 1. The investigation of seasonal peculiarities of meandering and eddy making in the zone of the Main Black Sea Current for the purpose of studying the nearshore convergence zone migration at the interface between the nearshore (less saline) and offshore (more saline) waters.

2. The investigation of hydrophysical and hydrochemical water structure and the processes of its formation in the nearshore zone.

3. The studies of space-time variability of hydrophysical

and hydrochemical fields.

4. The investigations of structure and dynamics and specific regime of currents in the nearshore zone.

5. The studies of hydrophysical and hydrochemical processes in the nearshore convergence zone and its role in the dynamics and ecology of the nearshore waters and the whole Black Sea.

6. The formation of the bank of data on hydrology, hydrochemistry and currents for the Russian nearshore zone of the Black Sea on the modern technical basis.

OUTPUT The main planned works involve treatment, analysis and generalization of the available experimental data on hydrology, hydrochemistry and currents (the Black Sea bank of data) and the expeditions within the nearshore 50-mile Russian zone of the Black Sea. As a result of these researches it is expected to obtain quantitative characteristics of hydrophysical and hydrodynamical processes which determine the dynamics of waters, the structure and variability of hydrophysical fields. This will be the basis for the development of the nearshore zone models reflecting the processes occurred there.

EQUIPMENT

For the treatment of experimental data the computers "AT-486" (3) are available. For the experimental works in the sea the following equipment is available:

1. Hydrophysical probes STD: a) "Sea-Bird-9" - 1
   b) "Katran" - 2
2. Autonomic meters of currents and water temperature "Potok" - 25
3. Autonomic bouy stations (ABS): ГМ-47 - 4 (200 m depth) ГМ-49 - 6 (1000 m depth) ГМ-50 - 2 (2500 m depth).
4. Deep-water thermometers and depth gauges - 200 5. Bathometers БМ-48 for water sampling - 40 6. Laboratory salinometers "ГМ-65" - 5.

ORGANIZATION OF FIELD INVESTIGATIONS Experimental investigations of 50-mile nearshore zone are to be conducted in specific seasons, namely, in the periods when summer and

winter hydrological and hydrochemical structures of waters are formed, and in transition periods (spring, autumn). The program involves investigations of structure and variability of hydrophysical and hydrochemical fields and the regime of nearshore currents.

OTHER PROPOSALS. In conducting large experiments when it is necessary to join technical means (devices, equipment, vessels) and financing for solving major problems in the hydrological regime of the Black Sea, the Southern Branch of the P.P.Shirshov Institute of Oceanology is ready for cooperation within the present-day international programs.

The program is planned for three years as a minimum (1995-1997), in the course of this period the appreciable results may be obtained.

Proposal for the pilot project for problem A9:

Title: Fluxes of pollutants in the modern sedimentogenesis of the Black Sea

Background information: an information about the supply of a series of pollutants from certain parts of the Black Sea drainage area was obtained in the course of the investigations during last ten years. Since 1989 till 1994 by common efforts the Southern Branch of the Institute of Oceanology and Scientific-Industrial Association JUZMORGEOLOGIYA study in details the peculiarities of the technogenic pollution in the Russian sector of the Near caucasian region. But a general picture of the anthropogenic pollution of the whole Black Sea has obtained for none of the most widely spread groups of pollutants, oil products, polyaromatic hydrocarbons, pesticides, radionuclides and heavy metals among them.

To this day it has not been estimated in full measure the role of all factors, which control the pollutant supply into sedimentary basin, their distributron and accumulation.

Quantitative data on pollution are rather scanty, there are no balance assessments, and the prognosis of the ecological situation is simply impossible without them. Till now

unpardonably little attention has been paid to the assessment of the role of sedimentation in the pollutant concentration and dispersion within the basin.

Main goal:

To construct a quantitative model of the Black Sea anthropogenic pollution and to perform the balance estimation of the most widespread pollutants in the process of sedimentogenesis.

Main aspects:

-Pollutant fluxes (oil products, pesticides, heavy metals, radionuclides) in river runoff.

-Pollutant fluxes in the areas of underwater sewers.

-Pollutant fluxes in aerosols.

-Pollutant fluxes on the main boundaries: river-sea, atmosphere-sea water surface, thermocline, thermocline, oxygen-hydrogen sulfide boundary, nearbottom water-bottom sediments.

-Pollutant fluxes in different sedimentary zones (bays, nearshore zone, shallow water, continental slope, basement, abyssal).

-Absolute mass of pollutants in the modern film of bottom sediments.

-Pollutant fluxes during natural calamity (inundations, water-spouts, earthquakes).

-Pollutant fluxes through the Kerch and Bosporus Straits.

-Pollutant balance in the Black Sea.

-Estimation of the sedimentation process role in the spatial and temporal pollutant distribution.

Output:

- Balance of sedimentary material and pollutants in the modern sedimentogenesis of the Black Sea.

- Quantitative picture of the pollutant accumulation peculiarities on the shelf, slope and in abyssal plain, as well.

-Extent of the basin pollution and the prognosis of ecological aftereffects.

Equipment:

-Sediment traps

-Grabs and corers for sampling of intact cores of bottom sediments with near bottom water.

-Laboratory equipment for pollutant determination and sediment composition study.

Organization of field investigation:

- Synchronous measuring of sediment and pollutant fluxes with the help of sediment trap according to a selected net of observations.
- Synchronous measuring of sediment and pollutant fluxes in the large river mouths of the Black Sea drainage area.
- Area lithological survey of the Black Sea for the purpose of the recent sediment sampling in characteristic sedimentary regions.

Other proposals:

It is advisable to form a special work group for the execution of this project.

Director of the Southern Branch
of the P.P.Shirshov Institute of
Oceanology, Russian Academy of Sciences R.D.Kos'yan

E. TURKEY

The Intergovernmental Meeting of the Intergovernmental Oceanographic Commission (IOC) of UNESCO on the Black Sea Regional Programme in Marine Sciences and Services will be held in Paris between June 7 and 9, 1995.

The annotated Provisional Agenda of this meeting, paragraph, the delegations will be invited to provide brief National Statements on the drafted brief proposal prepared by the secretary IOC based on the workshop results in Varna, Bulgaria, between 14 and 16 September 1994 circulated to IOC Action Addresses in the Black Sea States.

The View Points are:

1. In the proposed IOC Black Sea Regional Programme, the special natural features of the Black Sea would be given. These features are useful to show socio-economic importance, the source of the pollutions and the cause of the ecological changes taking place in this region. These features are:

(i) The ratio of the water catchment area to the surface area of the Black Sea is 5 to 1, i.e. an order of magnitude higher than the ration for the global ocean.

(ii) The high river discharge and semi-enclosed nature of the Black Sea, which limits strongly the water exchange with the world ocean and causes an exceptionally strong water stratification.

(iii) As a result of the poor ventialtion 90% of the water masses in the “Black Sea are anoxic, thus constituting the largest body of anoxic water masses in the world.

(iv) The humid climate of the Black Sea watershed, the high river discharge result in a high level of terrigeneous sedimentation in the Black Sea.

(v) The specific geological structure and the recent history of the Black Sea is marked by features of a micro-ocean passing through stages of lacustrine and marine phases of development, and representing a contemporary model of ancient metallogenic and oil and gas generating basins.

(vi) Increasing anthropogenic influence which, together with the specific natural features, deteriorate the environmental state of the sea and in some regions (especially in the north-western sector) cause a critical environmental situation, particularly with regard to eutrophication.

(vii) The Black Sea comprises a wide spectrum of living and non-living resources (including hydrocarbons), as well as resources for recreational activities, which, considering the urban development and economic structure of the coastal area, sets the stage for a major social and economic development for the coastal states of the Black Sea.

(viii) A generally new situation in international relations, resulting from the coming into force of the convention for Protection of the Black Sea against Pollution, and the start of the Black Sea economic collaboration.

(ix) The great interest in studies of Black Sea problems, not only in the Black Sea coastal states but also in international organizations and among scientists from countries outside the region. A number of programmes and projects are carried out in the Black Sea at the present time, and coordination and cooperation are required, as well as pooling of resources.

2. In Section 1, under the heading of the Title and Introduction, to use “Regional Cooperation Project for Integrated Research and Monitoring of the Black Sea” would be better and this title would show functional relations to the role of IOC; The other given ‘views should be kept as they are in the proposal.

3. In Section 2, the title Legal Grounds should be changed to Legal Descriptions. This Section is very important for the national and international view points. Some reference should be made to the legal national differences, to the existing legal instruments for the Black Sea as well as the Coastal States signatories or not yet “of UNCLOS. The other paragraphs given in the proposal are important for the proposal.

4. In Section 3, the objectives of the programme should emphasize coordination of actives already involved of the research programmes for the Coastal STates of the Black Sea. This includes the six Activity Centers of Working Parties for the Black Sea Environmental Programme (emergency response, routine pollution monitoring, special monitoring, fisheries, coastal zone management and biodiversity) under the cooperation of GEF in the same region.

(i) The research programmes organized through Commission Environmental Center (CEC), NATO, GFCM;

(ii) The project must create a mechanism to make use gathered data on oceanography including all the necessary parameters. The data should included historical records. In order to document past ecological changes in the region. This will provide the basic source of information for the environmental and resource managements. In addition, this will give basics for the strategies of the managements during the implementation and decision for the Environmental and Fisheries Convention in the Black Sea.

(iii) It is clear that GEF, NATO and other some supported research activities will contribute temporary to the Black Sea. Therefore IOC Black Sea Regional Cooperation project need to ensure coordination with the activities continue long time basic and avoid duplications.

(iv) IOC Black Sea Regional Cooperation Project should emphasize and support the data and information systems, it should create network between the National Oceanographic Data Centers in the region.

(v) The Project should create good relations and cooperation between the supported activities of the Environmental and the Fisheries Commissions.

5. In Section 5, as indicated regional organization management and cooperation among. The coastal states should emphasize consistency, avoid duplication, ensure proper coordination and scientific cooperative investigation. The project management simply response to solve the problems of the Black Sea. An effective management includes assessment and planning, administrative arrangement, scientific and technical cooperation, monitoring and information and of course international relations.

(i) The project according to the agreement between the Black Sea Coastal States, the national governments should coordinate of policies and unified direction for the integration of research and development activities in the region.

(ii) In the case of environmental management the Black Sea Coastal

States have already established a Commission on the Protection of the Black Sea against pollution.

(iii) In similar, the Black Sea Coastal States also agreed to establish a Fisheries Commission as well as for the management and enhancement of living resources.

(iv) Both Commissions will carry out their activities by permanent Secretariats and nominate their Executive Director and other officials. Their Presidents will be rotated.

(v) There are agreements between the Black Sea Coastal States that they will cooperate in conducting scientific technical research and they will exchange relevant data and information. All this cooperation will be directed to the studies aimed at developing ways and means for the assessment of the nature and extent of pollution and of its effect on the ecological system detecting polluted areas, examining and assessing risks and finding remedies, develop clean and low waste technology, alternative methods of treatment, disposal, elimination or utilization of harmful substances in the Black Sea. These activities must be directed in establishing appropriate scientific criteria for the formulation and elaboration of rules, standards and recommended practices and procedures for the prevention, reduction and control of pollution of the marine environment of the Black Sea.

(vi) Permanent Fisheries Commission will play an effective and valuable role with respect to data collection, fisheries assessment and planning for the enhancement of the living resources as well a future fisheries activities in the Black Sea.

(vii) The activities of the Fisheries Commission would be resource assessment, modelling, surveying, ecosystem rehabilitation and aquiculture, relevant data collection and information. Mnemiopsis continues to be the most important subject affecting the living resources, research activities on this subject would be very important in the Black Sea.

(viii) Establishment of expert groups activities for staff training on the environmental and living resource management are also necessary.

(ix) Environmental control of the dynamics of living resources in the Black Sea, Harmful Plankton and their blooms are the topics for the potential projects in the Black Sea,

(x) In addition, the initiation of the Black Sea coastal states with the GOOS is an important and priority subject for the IOC Black Sea Regional Programme to integrate the region with european and global oceans.

(xi) In 1995, the IOC Black Sea Project should identify and prepare research and development activities and it should be implemented by the Coastal States in 1996.

(xii) Human health consequences of environmental degradation of the Black Sea is a potential project subject.

(xiii) Management of the coastal zone is an important subject for the scientific aspects of sustainable development in the region.

In summary, considering 70 and 80 percent of the pollution comes outside of the region to the Black Sea, the programme should be established as an IOC Black Sea regional programme in marine sciences, services and related training carried out in cooperation among the coastal states of the Black Sea and other european states that mainly cause pollution and the ecological changes in the Black Sea. Turkey has given every special effort to coordination of activities

through NATO-Science Stability Programme (SSP),. and the Commission of Environment and Fisheries in the region.

The final national approval on the issues related to the IOC Black Sea Regional Programme will be done during the IOC General Assembly.

Prof. Dr. A. H. Acara

A BLACK SEA REGIONAL GOOS

Definition and introduction

The GOOS is defined as a scientifically designed permanent international system for gathering, processing and analysis of oceanographic observations on a consistent basis, and distributing data products. It will gather data by remote sensing, sea surface and sub-surface instrumentation, from the open sea coastal and shell seas and sea ice GOOS products will describe the state of the sea regionally or globally at regular intervals. Data and data products will be available to all members.

In the case fo EUROGOOS, between 3 and 5 percent of input the European GNP (EU) is generated directly by marine based industries and services. The value added directly by these activities is of the order of $ 140-230 bn/yr.

The economy, industries and services are subject to uncertainty, the direct costs and damage caused by the unpredictable forces of the marine environment such as storms, sea level surges, waves, erosion, transport and resuspension of pollutants, shifts in fish stock migration and toxic algal blooms. The temperature and salinity of the North Atlantic determines the weather and climate of Europe, the Black Sea and the Mediterranena. Europe, and the Black Sea coastal states have a great need to understand, monitor and predict the state of its coastal seas and the adjacent seas, including the Black Sea Atlantic and Arctic.

If we accept 1 % as a most conservative estimate the value added to the GNP of the EU is of the order fo $ 1.4-2.3 bn/yr. Of course, this is a minimum which should be exceeded by a factor of 2-3. In addition, there are longer term benefits of climate prediction, and its impact on agriculture, energy generation, water supply management, land use, fisheries and other social activities which would be of the same order.

Beneficiaries

The wide range of sea activities will benefit from the GOOS.

The beneficiaries of GOOS can be grouped into seven user sectors:

1. The sea floor
2. Coastal seas
3. Atmospheric science and climate
4. Science and technology
5. Living resources
6. Health of the seas
7. Shipping and defense

It will be necessary to demonstrate the practical feasibility of an operational global or regional observing system in a GOOS Pilot Experiment. The GOOS Pilot Experiment must include the scientific design and development of a Global Frame work core of permanent, consistent sea observations, measurements, data transmission and generation of useful data products.

GOOS will operate at 3 scales: (1) global, (2) regional basin scale, and (3) coastal or shelf seas.

The global international agencies guarantee that all countries can participate equally in GOOS, can benefit from GOOS and in particular that the developing countries are provided with the aid and technology they may require.

As a global institution the structure of GOOS will be defined by UN Agencies (IOC, WMO, UNEP) with the scientific advice of ICSU.

GOOS will be developed to its full global operational level over a period of 10-15 years and will cost of the order of $ 1-2 bn/yr when it is fully implemented.

Preliminary cost-benefit analysis indicates that the benefits will be at least 10 times the cost globally at a conservative estimate. The necessary funds can be invested by the richer and larger countries and organizations".'

The G7 represents 67% of the world GNP, OECD represents 79 % of the world GNP, EU represents 26 % of the world GNP and Western Europe as a whole (OECD less non-European countries) represents 30 % of the world GNP.

IOC has started a Trust Fund for GOOS and requested Member States to contribute.

Potential activities

1. Data collection and acquisition

   (i) Monitoring
   (ii) Real-time data exchange

2. Data processing and exchange

3. Data products and services

Under each of these potential activity areas specific actions can be stipulated. These can inter alia cover:

(i) considerations of which parameters to observe and exchange at a regional level, e.g. ships of opportunity (IGOSS), research vessels, buoys , satellites, coastal sea-level stations, meteorological stations;

(ii) possible non-real time products; maps, seasonal cruise results, based on existing resources;

(iii) possible real-time products; maps, seasonal cruise results, based on existing resources;

(iv) possible real-time products; wave data and forecasting, sea-level variations and forecasting, marine meteorological data and forecasts, surface layer currents, satellite pictures, buoy stations.

Processing and Product

Products can include inventories of data, maps, monthly sea level charts, positions of fronts, currents, results of models, e.g. related to oil spill drifting, wave modelling results, temperature, currents, exchange of forecasts, comparisons, intercalibrations.

Successive planning phases

The successive phases and their explanations are as follows:

Phase 1: Concept definition for the Black Sea Regional GOOS.

Phase 2: Technical feasibility study, costing and trials.

Phase 3: Design and definition of GOOS Pilot Experiments (GPE).

Phase 4: Implementation of GPE and Development, systems trials, implementation plan for permanent regional GOOS.

Phase 5: Implementation of GPE and Experimentation and testing of fully operational system for permanent regional GOOS.

Prof. Dr. Altan Acara

ANNEX VI

MARKETABLE DATA PRODUCTS WHICH COULD BE GENERATED THROUGH THE ACTIVITIES OF THE IOC REGIONAL COMMITTEE FOR THE BLACK SEA*

Problem to be addressed	*Oceanographic tool or data product addressing this problem*	*Mechanism for making the tool/product available*
Modelling and predicting the trajectory of oil and chemical spills in real time/emergency situations	1. Data base of spatial/seasonal physical oceanographic/meteorological data 2. Predictive model with high resolution 3. Real time data communications system available at all national focal points	4. Regional GOOS pilot project 5. IOC in cooperation with the Secretariat to the Istanbul Commission 6. IOC in cooperation with WMO and BSEP
Data for the design and planning of marine and coastal engineering projects and for conducting environmental impact assessments	Data base as above but without the need for real time data communication	Data base to be set up by the Regional Committee in conjunction with BSEP/Istanbul Commission
Assessment and rational exploitation of shared natural resources	Real time satellite information on the distribution of fisheries stocks etc.	International extension and harmonization of existing national remote sensing programmes. To be implemented in close association with the Black Sea Fisheries Commission
Prediction of coastal erosion, particularly where the forcing mechanism is a transboundary one.	Harmonized methodologies and data bases updated through a regional network of hydrological and wave observatories	International extension and harmonization of existing national and international programmes.
Long-term evaluation on the biological and geochemical state of the Black Sea, particularly addressing international fears regarding the depth of the anoxic layer and basin-wide eutrophication	GOOS products and regular publically diffused reports	IOC Regional Committee in close association with the Istanbul Commission
Need for improved international coordination of research fleet operations	Central registry of vessel capabilities and schedules. Liason with potential outside users/donors.	IOC Regional Committee.

• This is the first draft on this matter and a good guide for further work.

ANNEX VII

LIST OF PARTICIPANTS

I. MEMBER STATES

BULGARIA

Dr. G. Mungov
National Institute of Meteorology
and Hydrology
Bulgarian Academy of Sciences
66, Tsarigradsko chaussee, 1784 Aofia
Tel: <359> (2) 880380
Fax: <359> (2) 8844 94/88 0380

GEORGIA

Prof. 1. Khomeriki
Vice-Chairman of the Georgian
National Oceanographic Commission
Tbilisi State University
Av. Chavchavadze 1, Tbilisi 380028
Tel: <7> (8832) 2364 69/ 226420
Fax: <7> (8832) 9972 49/ 2211 03
Tlx: 212184 SLAVA SU

ROMANIA

Dr. A. Bologa
Romanian Marine Research Institute
B-DUL MAMAIA NR. 300
RO-8700 Constanta 3
Tel: <40> (41) 6432 88/ 650870
Fax: <40> (41) 83 1274
Tlx: 14418
E-mail: abologa@alpha.rmri.ro

RUSSIA

Dr. R. Kos'yan
Director, South Branch of
P.P. Shirshov Institute of
Oceanology, Russian Academy
of Sciences
353470 Gelendzhik-7
Tel: <7> (86141) 23261
Fax: <7> (86141) 23189
E-mail: kosyan@sdios.sea.su

TURKEY

Prof. A. Acara
TUBITAK, Ataturk Bulvari, 221
Kavuklidere, Ankara
Tel: <90> (312) 4685300 or 4275195
Fax: <90> (312) 4270536

UKRAINE

Dr. V. Eremeev
Director, Marine Hydrophysical
Institute
Ukrainian Academy of Sciences
Lenin St. 28, Sevastopol 335000
Tel: <7> (692) 550452
Fax: <7> (692) 444253
Tlx: 197304 SWSWO UK

II. ORGANIZATIONS & PROGRAMMES

GEF Programme for Environmental
Management and Protection of the
Black Sea

Dr. L. Mee
Co-ordinator
Black Sea Programme Coordination Unit
Yesilkoy - Halkali Asfalti, 9
Florya, Istanbul
Tel: <90> (212) 5745174
Fax: <90> (212) 5739384
E-mail: gef@servis2.net.tr

III. SECRETARIAT

Dr. G. Kullenberg
Executive Secretary IOC
IOC/UNESCO
1, rue Miollis
75732 Paris
Tel: <33> (1) 45683983
Fax: <33> (1)405693 16
E-mail: g.kullenberg@unesco.org
Tlx: 204462 paris
Cbl: unesco paris