

Annex IV

The Terms of Reference of the Ad Hoc Joint Technical Working Group

Terms of Reference

Ad Hoc Joint Technical Working Group established between Bucharest¹ and Sofia² Conventions on issues in the Transboundary Waters in the Wider Black Sea Basin

1. Scope of the Working Group

The wide mandate of this 'Joint Technical Working Group' between countries in the Black Sea Basin is to reinforce the cooperation of the States of the Bucharest and Sofia Conventions in relation to taking practical actions to protect the transboundary waters in the wider Black Sea Basin.

2. Objective of the Working Group

To create a common base of understanding and agreement on the changes over time of the Black Sea ecosystem and the reasons for these changes, and to propose practical goals and objectives for remedial actions to address them.

3. Primary Activities of the Working Group

The following tasks are to be achieved by screening existing informations:

- a. Assessment of the nutrient loads to the Black Sea from all sources in the Black Sea Basin, and their impacts on the Black Sea ecosystem;
- b. Assessment of the nutrient loads to the Black Sea from the Danube River Basin, and their impacts on the Black Sea ecosystem, with emphasis on the Black Sea shelf;
- c. Analysis of other types/sources of pollution to the Black Sea, and their impacts on the Black Sea ecosystem, with emphasis on the input from the Danube river;
- d. Assembling and assessing the available information on the likely response of the Black Sea ecosystem to specified reduction in nutrient loads; and
- e. Recommendation of a joint mechanism to evaluate progress over time and to report to both Commissions.

The assessment of the nutrient loads to the Black Sea will include:

- analysis of available water quality data (changes over time of the Black Sea and its ecosystems, including the marine system (including the shelf area) and coastal systems (including the Danube Delta; point and nonpoint discharges to surface waters, with emphasis on the input to the Black Sea;
- analysis of available water quantity data (as a means of determining nutrient loads).

¹ Convention on the Protection of the Black Sea Against Pollution

² Convention on Cooperation for the Protection and Sustainable Use of the Danube River

4. Determination of possible strategies

For the nutrient loads and analysis of other types/sources of pollution, as noted in step (3) above, strategies and approaches for implementation of pollutant reductions must be determined. This will comprise:

- a. Definition of common pollutant reduction goals (particularly nutrients) in the Black Sea Basin;
- b. Assessment of whether or not the implementation plans of Strategic Action Programmes (SAPs) undertaken in the Black Sea Basin are sufficient to achieve the common pollutant reduction goals identified in step(a) above; and
- c. Proposal of recommendations for improvements or amendments to the implementation plans of the SAPs undertaken in the Black Sea Basin to facilitate achievements of the common pollutant reduction goals.

5. Definition of the Working Group and its Reporting Obligations

This 'Joint Technical Working Group' will be constituted upon agreement of both the Black Sea and River Danube Protection Commissions. The opinions expressed in the Group activities are informal and will serve to provide guidance for later decision-making at the level of Heads of Delegations in a proposed Black Sea - River Danube Joint Meeting. The results of the Working Group activities will be taken into consideration in developing the River Danube Pollution Reduction Programme. Every representative in the Working Group has one position in regard to the issues being addressed (i.e., States that participate in both the Danube River and the Black Sea Commissions can only have one position). The findings of the Working Group are not for public release, and upon completion of its work, the Working Group is to report its findings to the Black Sea and River Danube Protection Commissions, and the Sponsoring donors.

6. Composition of the Working Group

The composition of the ten-person Working Group is as follows:

- For all the Danube States - comprising the chairman of the MLIM (Monitoring, Laboratory and Information Management), the chairman of the EMIS (Emission) Expert Groups, and representative of the Interim Secretariat (to be supplanted by the Permanent Secretariat) with expertise in technical and scientific issues;
- For the downstream Danube States - comprising representatives from Bulgaria, Romania and Ukraine (who are also contracting parties to the Black Sea Convention), to be selected on the basis of their technical and scientific merits by the national heads of delegations of the two Commissions;
- For all the other Black Sea States - comprising three representatives with technical and scientific expertise, to be selected by the respective Black Sea Commissioners;
- The representative of UNEP will serve as Chairman of this Technical Working Group.

The Working Group may consult other groups and individuals as it deems necessary to carry out its tasks.

7. Time Frame of the Working Group

- The Group will begin its work immediately after its recognition by both Commissions, to take place as soon as possible, and no later than 30 January 1998;
- To facilitate completion of its work in time for the proposed joint Black Sea - River Danube Meeting at the level of Heads of Delegations, the Group will meet at least every three months;
- In order to ensure sufficient lead time for discussions in the administrative systems of all involved parties, the Technical Working Group must finalize its work no later than the end of October 1998;
- The finding of the Working Group will provide background material and guidance for the proposed Black Sea - River Danube Meeting at the level of Head of Delegations, anticipated for January/February 1999;
- The Working Group will organize its work in such a manner as to also produce technical inputs for the preparation of new GEF projects for the region, for submission to the November 1998 meeting of the GEF Council.

GEF Black Sea Environmental Programme	List of participants	Environmental Programme for the Danube River Basin
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Task Force/Black Sea Environmental Programme Steering Committee,
Constanta, Romania, 8-9 December 1997**

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Annex V

The Composition of the 'Group' in Its Three Meetings

The TOR specifies in its para (6) the composition of the 'Group'. Based on this para (6) and additional participation in the three Meetings, the following representatives and additional participants took part in these Meetings:

1st Meeting, Baden/Austria, March 26, 1998

Representatives.

Chairman: Dr. W. Rast, UNEP; MLIM Expert Group: Mr. L. N. Popescu; EMIS Expert Group: Mr. B. Mehlhorn; ICPDR Secretariat: Dr. H. Fleckseder; Bulgaria: Dr. B. Boyanovsky; Georgia: Not present; Romania: Dr. A. Cociasu; Russian Federation: Mrs. L. Stepanova; Turkey: Dr. S. Beşiktepe; Ukraine: Dr. O. Tarasova.

Additional participants.

Dr. A. Hudson, UNDP/GEF; Dr. L. Mee, Programme Manager, Black Sea Env. Programme; Dr. R. Mihnea, Black Sea Env. Programme; Mr. J. Bendow, Manager, UNDP/GEF River Danube Pollution Reduction Programme; Mr. A. Garner, UNDP/GEF River Danube Pollution Reduction Programme.

2nd Meeting, Istanbul/Turkey, August 31st / September 1st, 1998

Representatives.

Chairman: Dr. W. Rast, UNEP; MLIM Expert Group: Mr. L. N. Popescu; EMIS Expert Group: Mr. B. Mehlhorn; ICPDR Secretariat: Dr. H. Fleckseder; Bulgaria: Dr. B. Boyanovsky; Georgia: Not present; Romania: Dr. A. Cociasu; Russian Federation: Mrs. L. Stepanova; Turkey: Dr. Ö. Baştürk; Ukraine: Dr. O. Tarasova.

Additional participants.

Dr. A. Hudson, UNDP/GEF; Dr. R. Mihnea, Manager, Black Sea Env. Programme; Mr. J. Bendow, Manager, UNDP/GEF River Danube Pollution Reduction Programme; Dr. L. Mee, consultant to UNDP/GEF.

3rd Meeting, Baden/Austria, December 10 / 11, 1998

Representatives.

Chairman: Dr. A. Hudson, UNDP/GEF; MLIM Expert Group: Mr. L. N. Popescu; EMIS Expert Group: Mr. F. Überwimmer (as substitute for Mr. Mehlhorn); ICPDR Secretariat: Dr. H. Fleckseder; Bulgaria: Dr. B. Boyanovsky; Georgia: Not present; Romania: Dr. A. Cociasu; Russian Federation: Mrs. L. Stepanova; Turkey: Dr. Ö. Baştürk; Ukraine: Dr. O. Tarasova.

Additional participants.

Dr. A. Hudson, UNDP/GEF; Dr. R. Mihnea, Programme Manager, Black Sea Env. Programme; Mr. J. Bendow, Manager, UNDP/GEF River Danube Pollution Reduction Programme; Dr. L. Mee, consultant to UNDP/GEF; Mr. T. Botterweg, Manager for Phare and Team Leader, Danube PCU; Dr. I. Natchkov, Manager for Phare in the Danube PCU.

All the National Studies hold the same title, i.e. 'Report on the Ecological Indicators of Pollution in the Black Sea'. All these reports have been undertaken in the frame of the Danube River Pollution Reduction Programme and the Black Sea Environmental Programme, and they have been financially assisted by UNDP/GEF.

Bulgarian National Study.

The report holds a total of 104 pages containing print.

The report has been compiled and the work has been coordinated by Dr. B. Boyanovsky, Prof., Faculty of Biology, Sofia University.

The study team consisted of B. Boyanovsky, G. Hiebaum, A. Konsulov; M. Mollov and V. Vassiliev, with contributions by K. Dencheva, L. Kamburska, Tz. Konsulova, V. Kujumdjiev and S. Moncheva.

Romanian National Study.

The report holds a total of 59 pages containing print.

The report has been compiled and the work has been coordinated by Dr. A. Cociasu, Researcher at the Romanian Marine Research Institute, Constanta.

The study team consisted of colleagues of A. Cociasu from the Romanian Marine Research Institute and has not been expressly mentioned in this report.

National Study, Russian Federation.

The report holds a total of 30 pages containing print.

The report has been compiled and the work has been coordinated by Dr. A. A. Shekhvotsov, Director General of the State Center for Environmental Programmes. He had been appointed to this position by the State Committee on Environmental Protection.

The members of the study team have not been expressly mentioned in the report.

Turkish National Study.

The report holds a total of 112 pages containing print.

The report has been compiled and the work has been coordinated by the team of Turkish Scientists from the Middle East Technical University (METU), Institute for Marine Sciences, at Erdemli.

The study team consisted of Ö. Baştürk, S. Tuğrul, A. Yilmaz, A. E. Kideys and Z. Uysal..

Ukrainian National Study.

The report holds a total of 49 pages containing print.

The report has been compiled and coordinated by the Institute of Biology of the Southern Seas, Odessa Branch.

The study team consisted of B.G. Alexandrov, V.A. Briantsev, G.P. Garkavaya, G.G. Minicheva, D.A. Nesterova, I.G. Orlova, L.O. Sebakh, O.G. Tarasova and Yu.P. Zaitsev. Most of these scientists work at the Institute of Biology of the Southern Seas, Odessa Branch.

Annex VI

**The Final Minutes of the 1st Meeting of the “Group”,
March 26, 1998, Baden/NÖ, Austria**

1st Meeting of the *Ad hoc* Joint Technical Working Group established between the International Commission for the Protection of the Black Sea (Bucharest Convention) and the International Commission for the Protection of the Danube River (Sofia Convention), which took place at Baden/Lower Austria, March 26, 1998

1. The participants present encompassed (without titles and written as close as possible to the spelling in English) the members of the *Ad-hoc* Group, Mr. W. Rast (UNEP; Chairman), Mr. S. Beshiktepe (Turkey), Mr. B. Boyanovsky (Bulgaria), Mrs. A. Cociasu (Romania), Mr. H. Fleckseder (Interim Secretariat, ICPDR), Mr. B. Mehlhorn (EMIS Expert Group, ICPDR), Mr. L. Popescu (MLIM Expert Group, ICPDR), Mrs. L. Stepanova (Russian Federation) and Mrs. O. Tarasova (Ukraine). Georgia was not represented. In addition to the members of the *Ad hoc* - Group, Mr. J. Bendow (GEF Representative in the Danube PCU), Mr. A. Garner (GEF Technical Adviser in the Danube PCU), Mr. L. Mee (Team Leader, Black Sea PCU) and Mr. R. Mihnea (Black Sea PCU) also participated in the Meeting. A handwritten list of participants was circulated in the Baden Meeting. For this very reason, these draft minutes do not contain a list of participants.
2. The Terms of Reference discussed December 8/9, 1997, at Mamaia, which form the base for the work of this *Ad-hoc* Group (later only called '*Group*'), were handed out again; they are attached. The Agenda to agree upon was to follow these TOR and to screen what actual work has to be undertaken. At the end of the Meeting at Baden, additional two meetings were scheduled (August 17/18 at Istanbul; October 2/3, place to be decided), and it was understood that in order to arrive at a draft report by early December 1998, at least one additional meeting by mid-November 1998 will be required.
The Chairman highlighted the objective of the work of the *Group* by repeating it and making it understood by every participant. It reads:
To create a common base of understanding and agreement on the changes over time of the Black Sea ecosystem and the reasons for these changes, and to propose practical goals and objectives for remedial actions to address them.
The Chairman also stated that the individuals participating in this *Group* are scientific and technical experts and that the primary goal of their work is to fulfil the aims of the TOR as good as possible.
3. Discussion to the Agenda:
One main issue initiated by Mrs. Tarasova, Mr. Bendow and Mr. Fleckseder was whether the Sea of Asov and its catchment area is / are part of the 'system' to be considered in this work or whether not. The *Group* was aware of the fact that the 'Convention for the Protection of the Black Sea against Pollution' is a shoreline convention, whereas the 'Convention on Co-operation for the Protection and Sustainable Use of the Danube River' is structured by the catchment area of River Danube. Both Programmes, the 'Black Sea Environmental Programme' as well as the 'Environmental Programme for the Protection of the Danube River' are - at least from their conceptual point of view - related to the hydrographic catchments. Based on the 'catchment approach' common with UNEP work, the *Group* concluded that the Sea of Asov and its catchment area are within the system to be studied.
Additional comments by Mr. Mee to the Agenda were as follows:
➤ There is an exciting point in time - both Conventions will be implemented at the latest starting by the end of 1998. The DRPC will then have entered into force, the ICPBS will hold its Secretariat.

- Thus, the political reality is speeding up. The two International Commissions charged to fulfil the respective Conventions should not fail to talk to one another.
- In order to support the contact between these two International Commissions, GEF would like to entertain a new implementation phase on nutrient reduction (for nutrient reduction, an incremental cost funding could take place). For this very reason, concrete proposals of this study should go into the next meeting of the GEF Council in January 1999. The remark by Mr. Duda, Leader of the GEF Secretariat on International Waters to both Mr. Mee and Mr. Mihnea was that if the report is not ready by January 1999, the GEF money will go to other projects, and not to the Black Sea and River Danube
- Mr. Mee also reported that at present, the GEF Secretariat would like to bring around 30 - 35 Mio. US\$ each for incremental cost funding to both sides, the Danube and the Black Sea side. This money should go preferably into projects in agriculture and for wastewater treatment. In addition, some of the bilaterally available money will be used to do some international GEF work in both the Danube and the Black Sea.
- The World Bank will also make ~ 500 Mio US\$ available as bank loans for ~ 10 projects in the Black Sea countries over the next 3 years, and something similar may happen in the Danube countries too.

Mr. Bendow reported about the GEF RDPRP (River Danube Pollution Reduction Programme) and the fact that this was started finally be end-of-November 1997 with the Inception Workshop at Krems, and that this holds a duration of at least 18 months. From his point of view and as contained in the report of the Krems November 1997 Inception Workshop, the work output of this *Group* is part of the GEF RDPRP, and this work output must fit into the time frame of the GEF RDPRP. For this very reason, the deadline reported by Mr. Mee to be January 1999 is from his point of view *not* binding, since the RDPRP can only be finalised in mid-1999. However, single projects coming out of the national planning processes can be taken into account. Within the GEF RDPRP, the 'Danube Water Quality Model (DWQM)' is under development. This model is also relating to the work of the *Group*, providing information to support the analysis.

The position of the *Group's* Chairman was that in order not to endanger any GEF support, the time frame reported on by Mr. Mee (that the report of this *Group* should be ready for the next meeting of the GEF Council in January 1999) should be followed.

In retrospect, however, it has to be noted that the output of the *Group* is not only to serve the GEF Council (this is only slightly contained in its TOR, see the last part of para (5)), but the more essential reporting by the *Group* contained in the TOR is to both International Commissions for their decision making at their respective political levels - be it domestic or also in the Commissions' Meetings.

4. The discussion then centred around the assessment of nutrients reaching the Black Sea from all sources and also from the Danube, and the impact of these inputs on the Black Sea ecosystem(s), including also the Black Sea shelf.

In order to make existing published information available, Mr. Fleckseder distributed copies of the two papers 'Long-Term Ecological Changes in Romanian Coastal Waters of the Black Sea' (A.Cociasu, L.Dorogan, Ch.Humborg and L.Popa, 1996) and 'Effect of Danube River Dam on Black Sea Biogeochemistry and Ecosystem Structure' (Ch.Humborg, V.Ittekkott, A.Cociasu and B.v.Bodungen, 1997), and the PhD-Thesis by Ch.Humborg ('Untersuchungen zum Verbleib der Nährstofffrachten der Donau'. *Ber.Inst.Meereskunde, Kiel, 264*, 1995). The Black Sea PCU made a pre-publication paper available entitled 'Land-based Sources of Contaminants to the Black Sea' (authors: G.Topping, L.Mee and H.Sarikaya).

Mr. Mee presented the contents of the last paper mentioned, of which he is co-author and which is of importance for the work of the *Group*. The authors based their estimate on the data available as of end-of-1997, and where when has to take into account that a common system of quality assurance is not yet in overall use. Further, the inputs of totN and totP (TN and TP as used in the enclosed figure) were structured as follows: All 'shoreline' countries of the Black Sea (Bulgaria; Romania; Ukraine; Russian Federation; Georgia; Turkey), which are also Contracting Parties to the 'Convention for the Protection of the Black Sea', plus another column indicated as 'other countries'. The allocation is according to 'countries' (i.e. national entities), and not according to catchment areas or direct inputs. The biggest share for 'other countries' is for all the non-Black-Sea-shore-riparians of the Danube, and only a minor share can be allocated to Bjelorussia.

The values presented assume for the Danube the following: Based on work undertaken in the 'Applied Research Programme (ARP) of the Environmental Programme for the Danube River Basin (EPDRB), the Project EU/AR/102A/91 ('Nutrient Balances for Danube Countries') contains on p. 54 a comparison between the output of the regional materials budgeting principle underlying this report, and the data obtained as an input into the Black Sea from the Project EU/AR/203/91 (and in which Delft Hydraulics participated). From p. 54 of Project EU/AR/102A/91, the following has to be quoted in this context: '*On the basis of data available, the TN and TP loads reaching the Black Sea can be estimated as 447 and 46 kt/a in 1988/89, and 345 and 25 kt/a in 1992 (Delft Hydraulics, 1997). These immission based loads are about 45 and 35% of the TN and TP emissions estimates (Section 3.1) clearly demonstrating the significant role of "self-purification", retention and losses in the river system (settling, denitrification,).*' The passage quoted, however, seems not to have been intended for quantifying purposes, but only for indicative ones.

The percentages mentioned 'compare' in fact the average input of totN and totP into the internal drainage network of the hydrographic catchment of River Danube due to the amount of work undertaken (i.e. **not** in the **overall** Danube catchment) on the one hand with the immission loads assessed by simple means according to the principles of sampling and analysing in the respective years (1988/89 and 1992) on the other hand. This also means that all the 'noise' (errors etc.) contained on both sides of the methods enter such comparison.

Mr. Mee indicated that the authors of the study cited ('Land-based sources of contaminants to the Black Sea') had, based on their interpretation of the Report of Project EU/AR/102A/91 that 42% of the inputs of tot N and 24% of the inputs of totP into the 'internal Danube water web' reach the Black Sea. (The preceding estimates (in Arial Narrow) show that the value for totP seems to be 'correct', whereas the value for totN seems to be only ~ 35%). With the values in this study, the authors further assumed that the same 'reduction' is applicable to the national indirect inputs by Bulgaria, Romania and Ukraine to the a 'total sum' can be arrived at for these three countries, and that the remainder of the immission load reaching the Black Sea has to be attributed to the more upstream Danube countries, see the enclosed figure (and in a similar way also for the

N.B. Going beyond the mere reporting of this meeting at Baden, it has to be indicated that the work input to Project EU/AR/102A/91 was not possible for Bosnia-Hercegovina, Croatia and the Federal Republic of Yugoslavia for funding reasons. This also means that it was impossible to include the emissions of ~ 14.8 Mio. people (~18% of the overall population) and ~ 163.000 km² (~ 21% of the drainage area). If one assumes that these are 'on average' of the same size as with all the other Danubian Riparians, the loads of totN and totP were in 1988/89 ~1.240 kt/a and ~ 161 kt/a, and in 1992 ~ 1.030 kt/a and ~ 133 kt/a. When these estimates for 'overall emissions into the internal drainage web of River Danube' are compared with the previously cited immission loads, these 'on average' can only explain in 1988/89 ~ 36% of the totN and ~ 29% of totP, and in 1992 ~ 34% of totN and 19% of totP.

Dnjepr catchment area, reflecting the situation of Bjelorussia). The validity of this approach will have to be discussed in the next meeting of the *Group*.

An additional presentation on nutrient inputs and also the 'status in nutrients' in the Romanian shelf of the Black Sea was given by Mrs. Cociasu. She highlighted that for daily samples taken at Sulina 5km upstream from entering of the Sulina branch into the the Black Sea, silica and PO₄-P are analysed since 1980 and Σinorganic N species since 1988, and that modern analytical methods (see the paper handed out, of which Mrs. Cociasu is the 1st author) are in use. She showed graphs which - when these Sulina data are extrapolated for the overall Danube - indicate a steady decline over time, e.g. for Σinorganic N species from ~ 1.000 kt/a in 1988 to ~ 400 kt/a in 1996. She also indicated that the flow in River Danube in front of the three branches also declined in the same period. Some historical data exist, but they are limited, their reliability is unknown and thus their interpretation as yearly immission loads should not be undertaken. The data Mrs. Cociasu showed for the Romanian shelf indicate that since 1992/93 a slight improvement in the occurrence of algal blooms has taken place, and a phosphorus limitation in the Romanian shelf exists.

Mr. Beshiktepe, an expert on the link between satellite imagery and the overall monitoring of the situation of the Black Sea, presented 1997 images from algal blooms in the Black Sea. The unfortunate situation is that (1) the Sea of Azov is holding a 'more or less permanent' algal bloom of 50 mg/l or more during the warmer season (spring till fall), whereas (2) the Black Sea is having such high concentrations at higher frequency in areas of the Black Sea shelf area, stretching from the Romanian to the Bulgarian part. There are, however, also some algal blooms in limited areas at lower concentrations along the Turkish coast.

The discussion centred around the following issues: (a) The atmospheric input of totN into the Black Sea; the estimate given was 1/3 of the land-based discharges. (b) The question of the importance of silica: Mrs. Cociasu and Mr. Mihnea, supported by Mr. Boyanovsky, mentioned that from their point of view the idea expressed by Mr. Humborg is correct and that silica seems to play a role in the shift of organisms which are blooming, whereas Mr. Mee was of the opinion that the impact of the relative change of silica is of lesser importance. (c) Any other polluting input from land-based sources of importance into the Black Sea; here the main issue mentioned was mineral oil via River Danube. (d) It was agreed that existing information, assembled by the Turkish Black Sea Center at Middle East Technical University, Institute of Marine Sciences, at Erdemli/IGEL, Turkey via Nato funded Workshops and undertakings, will be made available as soon as this is in a form to be agreed on by the authors to be published.

5. The assembling and assessing of the available information on the likely response of the Black Sea ecosystem to specified reductions in nutrient loads was only indirectly accessible by reasoning. Mr. Mee remarked that the response of ecosystems to stresses and their recovery is never a linear relationship. Ecosystems can have over a long period in time only minor changes, due to their resilience, but as soon as a certain level of stress is surpassed over a too long period, they collapse. In addition, and because of the shifts in time, the likelihood that ecosystems reach the starting level is quite slim. The Black Sea seems to have been in good shape still in the late 1960s and early 1970s. Starting from then, the conditions in the shelf declined and got worst between 1990 and 1992. As already mentioned, since then a slight improvement (decrease in the frequency and intensity of algal blooms; improvement in oxic conditions, in order to name a few) has taken place. The decrease of the input of N and P as reported by Mrs. Cociasu has been comparatively bigger. Thus the only way to meaningfully advance in formulating a policy for the protection of the Black Sea will be the need to reformulate it in intervals. It will be possible to come up with a suggestion for the 1st period in sight, but the quantification in absolute terms (load reduction values) is not very safe.

The discussion afterwards centred (1) around the fulfilment of the requirement of load reductions in absolute terms and (2) around the P - limitation. The Bulgarian and Romanian participants were of the view that a further reduction of the input of - especially dissolved, but also easily bound total - P into the Black Sea is beyond doubt of benefit for the frequency and intensity of algal blooms, whereas Mr. Mee held up his position that due to internal cycling of P, a reduction of totN is equally needed. Mr. Fleckseder indicated, in order to bridge to the issue of 'strategies', that a reduction of P is on the time scale more easily obtainable, whereas due to the large pools of N in groundwater aquifers, it will take decades until a longer-lasting reduction will be achieved; this, however, does not mean that in regard to nitrogen no strategies should be developed.

6. In regard to strategies, the *Group* took note of the information received that by the summer of 1998, 6 NAPs for Black Sea countries should be available, and that within the GEF RDPRP, National Reviews are in progress and will also be available by summer of 1998. Based on these and some other work, it should be possible to come up with proposals for strategies.
7. Allocation of work to be accomplished until the next meeting of the *Group*, see para (2):
Mr. Bendow focused the attention and discussion to the point that the main objective is not necessarily to reduce the nutrients discharged to the Black Sea, but to reestablish the resilience of the ecosystems of the Black Sea. In order to arrive there, he raised the question of suitable indicators to observe the development of ecosystems over time, to record such changes, and also to analyse possibilities to safeguard or reestablish the resilience of the ecosystems. Surprisingly, there were no precise indicators available to demonstrate the change over time of ecosystems in various parts of the Black Sea. The following discussion centered around the identification of suitable parameters available as data, in order to arrive at a clear link between the input of nutrients (or other pollution) and the change over time of Black Sea ecosystems. The 'state of the Black Sea ecosystem over time' (e.g. 1960 - 1985/90 - 1997/98) was to be examined considering the following:
① the secchi-depth; ② chlorophyll-a (phytoplankton biomass); ③ N/P/Si (total / available); ④ macroalgae (phyllophera) - areal extent; ⑤ oxygen concentration at shelf (spatial and temporal extent); ⑥ phytoplankton (# of species, density); ⑦ zooplankton (biomass, composition); ⑧ micro-zoobenthos (biomass, composition); and finally ⑨ 'Other pollutants'.

The participants from the Black Sea countries agreed on this proposal; however, they requested additional financial support (10.000 US\$ per country) to elaborate on the ecological indicators. Mr. Bendow agreed to provide for financial support, but he requested precise ToRs (including the indicating of available information, and the data and expertise necessary to elaborate an assessment in change of the Black Sea ecosystems). The participants from the Black Sea countries have been asked to submit their respective proposals as soon as possible to the Black Sea PCU's Coordinator, in order to liaise with the Danube GEF Programme.

In the discussion, Mr. Beshiktepe held up the view that with the Nato funded work, most of the information available has been put together, and that one has thus for the type of work the *Group* has to deal with only wait until the reports of the Nato Workshops are agreed upon by scientific panels and by the authors. This should be the case by late June or early July at the latest, and that from this point of view the next meeting of the *Group* should take place in mid-August 1998.

Pollution Input into the Black Sea: There is work available by the Black Sea PCU; it will - for review by the members of the *Group* - be made available either by the BSPCU or Mr. Mee by early May 1998.

The members of the *Group* are asked to critically screen the material to both points (pollution input as well as the ecological state of the Black Sea) mentioned; they were told to receive this material before the next meeting (August 17/18, 1998, at Istanbul), for further discussion in this upcoming meeting.

These draft Minutes have been conceived by H.Fleckseder, IS/ICPDR. The delay in time relative to the Meeting is due to a having been moved from one part in VIC to another, to the Easter Week, as well as to other obligations of the rapporteur, and the fact that this was 'counter-read' by others.

Initially the draft had been finalised at Vienna on May 11, 1998

The final status has been indicated at Vienna on September 3, 1998

Annex VII

**The Draft Minutes of the 3rd Meeting of the 'Group',
December 10/11, 1998, Baden/NÖ, Austria**

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**Draft Minutes of the 3rd Meeting,
Joint Ad-hoc Technical Working Group,
established between the ICPBS and the ICPDR.**

Meeting dates: December 10 / 11, 1998.

Meeting venue: Schloßhotel Weikersdorf, Baden, Lower Austria

The participants in this 3rd meeting were the **representatives to the Group and additional participants**.

The **representatives to the Group** (or as their substitute in this meeting) were

Mr. A. Hudson (AH; UNDP-GEF, as Chairman, replacing the former Chairman, W. Rast, UNEP);

Mr. B. Boyanovsky (BB; BG);

Mrs. A. Cociasu (AC; RO);

Mrs. L. Stepanova (LS; RUS Fed.);

Mr. Ö. Baştürk (ÖB; TR);

Mrs. O. Tarasova (OT; UA);

Mr. F. Überwimmer (FÜ; substituting B. Mehlhorn, EMIS EG of ICPDR);

Mr. L.N. Popescu (LNP; MLIM EG of ICPDR; only participating December 11);

Mr. H. Fleckseder (HF; Permanent Secretariat, ICPDR).

Additional participants encompassed:

Mr. J. Bendow (JB; Project Manager, GEF River Danube Pollution Reduction Programme);

Mr. R. Mihnea (RM; Programme Manager, Black Sea PCU);

Mr. L. Mee (LM; former Manager of the Black Sea PCU and consultant to UNDP/GEF; December 10 and December 11 till ~ 1 1/2 hours before the end of the meeting);

Mr. T. Botterweg (TB; Programme Coordinator, Danube PCU) and I. Natchkov (IN; Phare / Tacis Programme Manager, Danube PCU), both only on December 11, 1998.

1. The opening of the Meeting and the introduction to the 'Draft Summary Report' by L. Mee.

Mr. A. Hudson opened the Meeting on December 10, 1999, at 9h30. He welcomed the participants present. He hinted at - as no agenda had been prepared by the Chairman of the two preceding meetings - that the 'Group' should screen the reports which had (with the exception of Ukraine) been presented already at Istanbul and which are now finalised. The Group should also go through the draft summary report by LM (which was stated to be based on the contributions from the Black Sea shoreline riparian States). It should also discuss and come to an agreement as far as possible relating to measures to be taken to limit the discharges into the Black Sea, as agreed upon in the preceding 2nd meeting at Istanbul.

The draft minutes of the Istanbul Meeting, agreed upon there to be available at the end of the 1st full week in October 1998, were not available. The draft summary report by LM was neither available before this 3rd Meeting, but printed out in this Meeting at Baden. Already during the print-out and the following copying, LM informed the 'Group' about the contents of this draft summary report, which he had entitled "Eutrophication in the Black Sea: Establishing the causes and effects." This initial draft summary report is annexed to these draft minutes (Annex 1). LM told the 'Group' also that the 'Black Sea side' will 'have to produce something productive for the net GEF Meeting in May if GEF funding for investment should be further available'.

As this draft summary report is late and as it merits careful reading, it is understood that no decision on its contents can be taken in this Meeting. However, in order to fulfil his commitments, LM stated to be in need of amendments, in written at the latest in front of Christmas 1998, such that he can finalise this draft summary report by the end of the year 1998.

LM communicated also the following report to the Danube PCU: 'An input-output study on nutrient loads in the Danube River Basin'. 68 p. plus ~ 30 pages Annex. This report has been written by V.J.P. van't Riet, and supervised by drs P.H.L. Bujis (from 'International Center for Water Studies B.V.') and ir R.H. Aalderink (Landbouwniversiteit Wageningen, Department of Env. Sciences, Aquatic Ecology and Water Quality Management Group).

The main remarks by LM to the contents of the draft summary report were:

- In going through the national contributions, the main question arriving was: Are the data made available really reliable? Where are the sampling stations located, and for which time span are monitored data available?
- If one group of researchers stuck to specific methods over a specified time period, it seems meaningful to assume that this data set can be compared in itself (but not automatically with data monitored by other researchers).
- The methodological problems seem to be bigger with biological data than with chemical data.
- The load assessment (and the 'comparing' of reported loads and where the way in which these loads were assessed is not known) must be an issue of specific concern. Loads for soluble parameters can be assessed with much less sampling effort than loads of parameters, which are transported, sediment-bound.

LM repeated how the eutrophication problem of the Black Sea evolved over time:

- The phytoplankton outcompeted the macrophytes, due to its ability to grow.
- With an increase in nutrients available - and which is documented by measurements in the Sea only in later phases, when the eutrophication process was already relatively advanced - the growth and decay was such that (over time) not only the macrophytes were outcompeted, but also they died off to a large extent. Conditions with low oxygen concentrations (or even free of oxygen) evolved also ('hypoxia').
- This led to an ecological status where there was very low biological diversity with both phytoplankton and zooplankton, and based on this also with very low diversity of fishlife.
- In the 1980s, alien "jellyfish" intruded, found very good growth conditions, and no species utilising them.
- The good news is that benthic algal beds (*cystoseira barbata*) are still present along the coast of the Russian Federation, in other places in patches. Small patches of *phyllophera*-fields also exist. If the conditions improve, these patches can be the stock from which conditions similar to the pre-1960 conditions can develop over time.

- There is a recovery in fisheries (e.g. anchovis).
(In the discussion to this, the colleagues from the Black Sea shoreline states indicated that due to the zooplankton, the sprats and the anchovis, bonitos have intruded this year from the Sea of Marmara into the Black Sea. The survival of bonitos in the Black Sea will also depend on the respecting of their reproductive cycles).
- The big 'eutrophication problem' of the Black Sea is, according to LM, the dominance in the food chain of gelatinous organisms ("jellyfish"). These jellyfish - originally alien to the Black Sea- are a 'dead end' in the foodchain, i.e. they cannot serve as food for higher carnivores leading to diversity in fishlife. There is the only hope that with a further decline in phytoplankton growth, the predominance of jellyfish will fade out.
- Presently, the Black Sea is on the way of improving, but it has not yet reached the situation of the 1960s.
- According to LM, the main problem and the driving force for the planktonic growth is the extreme surplus of nitrate. This, however, is in contradiction with the P-limitation in the shelf area, to be discussed later.
- Decisions taken in the last Meeting (i.e. the 2nd meeting of the Group at Istanbul, and where no draft minutes of this meeting were made available) are in the opinion of LM meaningful.
- LM stressed in the discussion to the report the use of 'inexpensive means' of removing nutrients from wastewater, and BB supported him. For both these colleagues, the technology describing the term 'inexpensive' is constructed wetlands. HF contributed in the discussion to this point that the actual and long-lasting removal of nutrients via constructed wetlands can primarily only be due to the harvesting of plants; if this is not done properly, the treatment will ultimately fail. HF cited a study undertaken at the relatively large and shallow 'Lake Neusiedl'. This study revealed that the harvesting of reed, such that the rhizoma are not destroyed and that the harvest is actually taken away at the end of the growth period, is such expensive that the application of this method was there discarded. RM reported about similar experience gained in the Romanian Delta of River Danube, and OT claimed the same to have been arrived at in Ukraine. HF concluded that such 'inexpensive technology' must have its limits in plant size.

2. Discussion to the 'Draft Summary Report'

Asking for proposed amendments:

As the 'Draft Summary Report' written by LM was not known before, no full discussion was possible in this Meeting. The agreement to respond to this draft not later than around Christmas 1998 has already been highlighted.

Remarks to individual aspects of the draft summary report:

There was some time to go through the report in reading, and afterwards, some amendments were proposed. LM took note of them. One important aspect is with the nutrient data from Romania: They are given in phosphates and silicates, but their actual dimension (not shown in the tables) is phosphate-P and silicate-Si, and nitrogen is correctly shown as the 'nitrogen species' or 'sum of inorganic nitrogen'.

Such proposed changes related to the text of the draft report, to the summarising table, but also to the tables and figures annexed.

Under debate: The limiting 'chemical species' for phytoplankton growth:

HF distributed a paper called 'Sweden's nitrogen debate' (Water Quality International (WQI), September / October 1998, the 'popular' news media by IAWQ) (Annex 2). In this paper, reference is made to an ongoing debate in Sweden whether nitrogen is actually limiting for the eutrophication process in the Baltic – as claimed for long – or whether at a systems level, this is actually falling to phosphorus. In this debate in Sweden, the final conclusion is not yet reached. The interesting point, however, is that nitrogen fixers (i.e. blue-green algae) are occurring in certain parts of the Baltic, thus indicating that not nitrogen, but phosphorus is limiting.

The question by HF to the representatives of the shoreline States in the Joint Ad-hoc Group was whether such blue-green algae occur, and there was a positive reply. The quantification of this positive reply was split: LM claimed that these covered not more than 2% of the phytoplankton occurring, whereas others felt that this value is higher.

AC indicated again - as she had done in both preceding Meetings of the 'Group' - that the phytoplankton growth in the Romanian shelf is limited by phosphorus. ÖB agreed also that the data obtained in the cruise of R/V Bilim in March and April 1995 allow the same statement for the northwestern shelf area. This is the area in the Black Sea with the most intensive phytoplankton growth, with the biggest spread. The currents then transport the phytoplankton into the direction of the Bosphorus.

HF indicated – as he had already done in the previous Meetings of the 'Group' – that in regard to actually achieving load reductions within a short span of time, reducing phosphates and phosphorus is potentially much more easy and less costly than a quick 'curbing' of nitrogen. HF therefore suggested discussing how the limitation of phosphorus can be achieved by legal and technical means. The 'curbing' of nitrogen should be also undertaken from the beginning where possible (e.g. by forbidding liquid discharges from large animal raising units, and thus curbing the discharge of both nitrogen and phosphorus). With urban wastewater, the removal of nitrogen is much more costly than the removal of phosphorus. In the Danube Basin, a large fraction of nitrogen is from diffuse sources. From the point of view of HF, the 'curbing' of nitrogen has primarily to be discussed at a strategic level, and maybe even not only at the scale of the hydrographic catchment area of the Black Sea, but on a worldwide scale. LM responded that seas are nitrogen limited, and that therefore - in line with the 'Redfield ratio of 7 to 1 (for N to P) - nitrogen has also to be strongly limited from the start.

The view within the representatives to the 'Group' was that the limiting of phosphorus must have an impact, and that therefore some of the stress of the GEF incremental cost funding should be with the curbing of phosphorus. This was i.a. stated by ÖB.

What load of nutrients in River Danube could be a 'basis' for a comparison?

Reference is made in the Romanian national report, in which data by ALMAZOV are cited for the years 1959 and 1960. The full-length paper by ALMAZOV was not available; OT stated that this paper is written in Russian, and that she would send a copy to LM. The aim of this sending is to gain better knowledge about how ALMAZOV arrived at the loads he presented. HF indicated again that aside from the question of how many data sets were used by ALMAZOV care should be given to the fact that the yearly loads vary also from hydrologic year to hydrologic year. An 'average load estimate' should be based on at least data from 5 years.

3. Where would the representatives of the States participating put GEF funding for incremental cost?

Possible 'fields of action' for improving the ecological status of the Black Sea options highlighted were:

- The A reform of agricultural practices (influenced by the legal frame and the type of policy)
- Use of wastewater treatment (including alternative methods)
- Rehabilitation of key basin ecosystems
- Changing of consumer practices (including the use of poly-P-free detergents)
- Definition of the legal frame (including also the use of chemicals and import regulations).

Answers received

Suggestions by BB for Bulgaria:

- Monitoring and control should be strengthened, incl. the import ban on poly-P-containing detergents.
- The nutrients should as much as possible be kept in / on the soil. This also relates to the appropriate use of animal manure, to 'biofarming', to the necessary fighting against soil erosion, to the setting-up of riverine buffer zones and to decrease intensive fish farming. Sludge from WWT (= wastewater treatment) should as much as possible be used agriculturally.
- Wastewater treatment should be used, and for reasons of investment and where possible, this should encompass low-cost removal of N and P. In order to better utilise N and P, municipal and industrial wastewater should be treated in a combined way.
- Measures in the Black Sea should also be considered, i.a. the creation of artificial reefs, including the increased harvest of mussels, and fishing practices in such a way that the carnivorous fish stock can grow.

Suggestions by AC, supported by LNP and RM, for Romania:

- The loads via River Danube have decreased, and the application of fertilisers on agricultural land is now for some time very low. A reform of the Act governing agriculture still has to pass legislature.
- WWTP have to be improved and to be built inland, along the Romanian coast, mainly improvement is necessary, as there is no discharge of untreated wastewater into the Sea. The main question here is in regard to the investment and how this can be converted into a 'continuous series of payments'. Industry is - where possible - treated in a combined way.
- Romania would like to utilise river-related ecosystems to minimise the nutrient transport.
- Romania is holding a law demanding the use of poly-P-free detergents.

Suggestions by LS for the Russian Federation:

- Agriculture is vital in RUS, but the input of mineral fertiliser has been drastically been reduced. There is only small-scale raising of animals.
- Both with the Sea of Azov as well as the Black Sea untreated or not sufficiently treated wastewater is discharged, and thus the stress must be with wastewater treatment. This relates to both municipalities and industries. Along the coast of the Black Sea, there are also outfalls under the pycnocline, with only mechanically treated wastewater. Around Novorossisk, there is also some oil pollution, due to the handling of oil. Methods of wastewater treatment should be reliable, and the investment should last as long as possible.

- Wetland areas are along the Kuban, and also along the Don. If this works, RUS would like to utilise the potential.
- Detergents are imported, i.a. by Procter and Gamble.

Suggestions by ÖB for Turkey:

- Agriculture is also important in TR, but even more important is the fighting of soil erosion. Farming in the Black Sea catchment of TR is on small lots - e.g. some animal raising, some garden-like agriculture, and also the growing of tea.
- There are only a few large cities along the Turkish Black Sea coast, with the possibility like in RUS to discharge below the pycnocline. The population is otherwise living in very scattered settlements. It is relatively easy to force industry to do something, but its tremendously more difficult to convince municipalities.
- Wetlands play in TR - due to the character of the landscape - a minor role.
- ÖB is not familiar with the legislation in TR covering poly-P in detergents.

Suggestions by OT for Ukraine:

- In agriculture in UA, like in other States, the application of market fertilisers declined, and there is no longer any type of industrialised animal raising. Nevertheless, there should be a further stress with improving nutrient discharge from agriculture, assuming that it will hopefully recover over time.
- There is a huge demand for treatment of untreated or improvement of not adequately treated wastewater, be it from municipalities or industries (e.g. mining, with acid mine drainage and where mines are also no longer in operation; metallurgical enterprises; etc.). The Seas impacted are both the Black Sea proper and the Sea of Azov. River Dnjepr, dammed from upstream from Kiev and with large man-made lakes, is strongly eutrophied.
- There are many wetland areas in Ukraine, and UA would like to utilise the potential.
- OT is not familiar with the legislation in UA covering poly-P in detergents.

During the presentation of these answers, HF highlighted that the EU is running a research programme dealing with the assessment of buffer areas ('European river margins project'). This joint research indicates that a potential for the reduction of nitrogen in groundwater exists primarily in the 'transition zones' from groundwater to river water. He also indicated that this 'denitrification potential' is only having a larger impact if as much river length as possible is utilised in this way.

HF also indicated that certain interests in chemical industry favour the use of poly-P in detergents, by claiming that by precipitation, phosphates will be removed from wastewater anyhow. By proposing this, there is an economic gain involved in both selling poly-P as well as additional precipitants.

The need to establish (or to improve) a "transboundary assessment of indicators of the Black Sea"

To this item, mainly RM contributed.

- A Monitoring Programme for the Black Sea was fixed both in the Convention and the Declaration.
- Control stations have been proposed in 1994, a long list of parameters to be determined exists also. The suggestion is to start with nutrients and with bathing water quality.
- However, no station has been implemented. The stations are foreseen to be erected up to 10 ÷ 15 nautical miles from the shore, located at transboundary positions.

Discussion to this:

OT reported that UA would be undertaking for a period of two years a detection of oil pollution by remote sensing. LNP and ÖB asked both to remind the politicians that the jointly agreed upon monitoring programmes (e.g. the proposed monitoring programme for the Black Sea by the shoreline riparians; TNMN in the Danube Basin) and the 'support structures' (e.g. the Expert Groups under the ICPDR) should be funded, and where things are missing, this should actually be implemented. Otherwise the work developed will collapse. HF asked whether GEF funding is possible for monitoring stations. The reply by AH and LM was that this task is a 'national baseline contribution'.

Legal and Political Issues

TB asked for the function of the existing Conventions and the Commissions charged to implement them. ÖB, JB and HF stressed that any 'true acting' is only at the respective national level, and the function of the Commissions is to have an 'umbrella' via the 'principle of cooperation'. JB hinted at that an outcome could be e.g. ① a 'Memorandum of understanding between both the ICPBS and the ICPDR', and that this memorandum should contain principles, whereas in step ②, the measures to implement these principles should be clarified. OT stressed also the need for harmonisation and cooperation between both Commissions.

LM indicated that he wanted to have a Ministerial Meeting among the Black Sea shoreline riparians. This should i.a. deal with the banning of poly-P in detergents and an agreement on certain areas of land to be utilised for aquatic ecosystems, including a joint implementation principle.

JB suggested: Based on the reports (Minutes of the Meetings; the report drafted by L.Mee, after its revision by the 'Group') a restricted group of persons (e.g. JB; RM; HF; LM) should be charged to come up with a paper of 2 ÷ 3 pages and propose it to the 'Group'. This paper should contain the essential elements to be communicated.

Vienna, February 2nd, 1999

Hellmut Fleckseder

Annex VIII

Draft Memorandum of Understanding

DRAFT

Memorandum of Understanding between

the International Commission for the Protection of the Black Sea (ICPBS) and the International Commission for the Protection of the Danube River (ICPDR) on common Strategic Goals

- The 'International Commission for the Protection of the Black Sea (ICPBS)' holds the power to implement the 'Convention on the Protection of the Black Sea against Pollution'. This Convention is a 'shoreline convention', i.e. it itself holds no power over the inland activities of the States within the hydrographic drainage area discharging to the overall Black Sea (Black Sea proper; Sea of Azov).
- The 'International Commission for the Protection of the Danube River (ICPDR)' holds the power to implement the 'Convention on Cooperation for the Protection and Sustainable Use of the Danube River'. This Convention is a 'hydrographic basin convention', i.e. it itself holds power over the transboundary impact via the drainage network of the River Danube Basin (valid only for Contracting Parties to this Convention).
- This Memorandum of Understanding becomes effective as soon as it has been agreed upon in the respective Meetings of both Commissions mentioned and an exchange of letters has taken place. It loses its effectiveness as soon as one of both the International Commissions mentioned notifies the other.
- This Memorandum of Understanding constitutes by no means a legal document for the joint implementation of issues of importance for the protection of the Black Sea against pollution by its Transboundary Waters in its wider basin.

Representatives of the ICPBS and the ICPDR with the assistance of UNDP/GEF and UNEP set up on December 8 and 9, 1997, a Joint *Ad-hoc* Technical Working Group ('the Group') in a Meeting at Constanta, Romania. The following elements of this Memorandum of Understanding correspond with the results of 'the Group':

- The term 'overall Black Sea' encompasses the Black Sea proper and the Sea of Azov as water bodies receiving inputs via inland waters. Both the Black Sea proper and the Sea of Azov are in regard to their ecology and their response to discharged pollution completely different water bodies.
- The term 'Black Sea ecosystems' refers to ecosystems in both these Seas.
- The term 'wider Black Sea Basin' refers to the basin determined by the hydrographic boundary of all inland waters discharging to the overall Black Sea and the surface area of the overall Black Sea. For the sake of convenience and until decided otherwise between both Commissions the outer border of this basin is looked upon to be the Strait of Bosphorus.
- The results of studies on the 'Ecological Indicators of Pollution in the Black Sea', carried out in the frame of the activities of the Joint *Ad-hoc* Working Group, have given evidence of recovery in Black Sea ecosystems. However, the ecological status of the 1960s – which is deemed to be the goal to aim for – is not yet reached.

- There is in general agreement that the status of Black Sea ecosystems is largely affected by nutrients discharged within the wider Black Sea Basin, and to a large extent by the riverine input into the overall Black Sea. Information of a possible role of other sources of pollution and their impact on Black Sea ecosystems was not yet available.
- The size of the pollution loads reaching the overall Black Sea (resolution both in time and in space for the Black Sea proper and the Sea of Azov) are either not known, or information is missing on the comparability of the data available.
- 'The Group' was aware of the decline of the economic activities in the countries in transition, the possible impact of them on the discharge of pollution, and the reversal of such a trend in case of future economic development (concerning in particular agricultural and industrial activities).
- The data available to 'the Group' to undertake its assessment ended at best with values for the year 1997.

In order to safeguard the Black Sea from a further deterioration of the status of its ecosystems the Contracting Parties to the 'Convention on the Protection of the Black Sea against Pollution' and the Contracting Parties to the 'Convention on Cooperation for the Protection and Sustainable Use of the Danube River' individually and in mutual contact with all States within the wider Black Sea Basin strive to achieve the following strategic goals:

- *The long-term goal for all States in the wider Black Sea Basin is to take measures to reduce the loads of nutrients and hazardous substances discharged to such levels necessary to permit Black Sea ecosystems to recover to conditions similar to those observed in the 1960s.*
- *As an intermediate goal, urgent control measures should be taken by all States in the wider Black Sea Basin in order to avoid that the discharges of nutrients and hazardous substances into the Seas exceed those that existed in 1997. (These 1997 discharges are only incompletely known.)*
- *The inputs of nutrients and hazardous substances into both receiving Seas (Black Sea proper and Sea of Azov) have to be assessed in a comparable way. To this very end a common AQC system and a thorough discussion about the necessary monitoring approach, including the sampling procedures, has to be set up and agreed upon between the ICPBS and the ICPDR.*
- *The ecological status of the Black Sea and the Sea of Azov has to be further assessed, and the comparability of the data basis has to be further increased.*
- *Both the reported input loads as well as the assessed ecological status will have to be reported annually to both the ICPBS and the ICPDR.*
- *The States within the wider Black Sea Basin shall have to adopt strategies that will permit economic development, whilst ensuring appropriate practices and measures to limit the discharge of nutrients and hazardous substances, and to rehabilitate ecosystems which assimilate nutrients.*
- *Based on the annual reports and on the adopted strategies for the limitation of the discharge of nutrients and hazardous substances, a review shall be undertaken in 2007. It will have to focus on the further measures that may be required for meeting the long-term objective.*

This Memorandum of Understanding becomes effective by an exchange of letters between the ICPBS and the ICPDR in which each of them mutually agrees on the contents of this Draft Memorandum of Understanding. As soon as this is reached, a final version (with the omission of the word 'Draft') will be circulated between both the ICPBS and the ICPDR.