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PROCEEDINGS OF THE FIRST FEASIBILITY STUDY FOR ESTABLISHING A  
REGULAR PROCESS FOR THE ASSESSMENT OF THE STATE OF THE  
MARINE ENVIRONMENT

I. EXECUTIVE SUMMARY

1. The first informal consultative meeting on the “Feasibility Study for Establishing a Regular Process for the Assessment of the State of the Marine Environment” was held at Hotel Loftleidir, Reykjavik from 12-14 September 2001, and was attended by 37 persons representing international bodies, regional organisations, national governments, and other concerned organisations.
2. The process of investigating the potential development of a regular global assessment for the marine environment, to provide accurate information to decision-makers on the threats to this environment, had been investigated by national governments under the leadership of Iceland. The Icelandic proposal had led to the adoption by the UNEP Governing Council (GC), of a decision on “Global assessment of the state of the marine environment” (GC 21/13.). This Decision requested the Executive Director, in co-operation with IOC/UNESCO and other UN agencies, the CBD Secretariat, and the regional seas programmes to explore the feasibility of

establishing a regular process for the assessment of the state of the marine environment.

3. The Reykjavik meeting was the first stage in exploring the feasibility of an assessment process. The meeting objectives were to establish whether an assessment process was needed; whether a process would be feasible; what resources were available; who should be the principal users, and what did they require from the process; what should be the scope of the assessment; what the central goals of the assessment would be, and whether options were available to satisfy these goals; which main criteria were needed for a mechanism to undertake the assessment; and what should be the next steps taken in the development of the process.

4. Following the opening presentations participants strongly agreed that a global assessment of the marine environment was both desirable and urgently needed, and further welcomed the opportunity to examine the feasibility of developing this process.

5. To provide a general overview of the resources available for a global process, organisations currently engaged in marine assessment activities were invited to provide presentations on their work. Following the presentations participants noted that there was some duplication in efforts. It was suggested that a basic comparative exercise for organisations undertaking marine assessments could be completed during the meeting to identify and document overlap in effort, possible data gaps, and potential areas for further collaboration. The results of this exercise are recorded as part of this report (Annex XXV)

6. In view of the broad range of detailed material presented, participants agreed that sufficient baseline information was available to allow the construction of a regular, comprehensive, assessment of the marine environment at the global level.

7. It was strongly agreed that the principal target audience of the assessment should be policy-makers, mostly at the national level, and as such outputs and analysis from the process should be aimed towards this group. Country representatives were invited to outline their needs and specifications for the process. It was suggested that

the assessment should provide an examination of current and future changes in the state of the global marine environment; should determine the global impacts of changes in the marine environment; and should provide advice on actions required to mitigate the impacts of environmental change.

8. Guiding recommendations from country representatives were that the assessment should have a comprehensive, broad marine ecosystem approach, based on the best available scientific information. The process must demonstrate full transparency, and follow an inclusive, broad stakeholder approach.

9. It was strongly recommended that the assessment should build upon an existing assessment framework. Country representatives insisted that any proposals for a new mechanism would not receive support from their governments. It was suggested that a reformed GESAMP, provided with adequate funding, might be the best option, largely because of its strong scientific expertise. The meeting further recommended that the process should demonstrate sustainability so as to provide regular future assessments.

10. Participants strongly agreed with a suggestion presented in the UNEP background document that reports from the assessment are produced in a ‘two-tier’ format: one report (first-tier) should be written as a scientific/technical report to address the needs of the scientific community; with a second report (second-tier) covering the same information but written in a language and style adapted to the needs of policy makers.

11. Within the context of government involvement in the assessment process it was anticipated that governments would provide nominated experts to participate in scientific assessment procedures, and that there would be a role for governments in question formulation and in reviewing scientific input.

12. The geographical area in which the assessment should operate was defined as ‘marine and coastal ecosystems and associated estuaries’. It was agreed that the assessment should adopt an ecosystem approach, and would provide an analysis of the impacts of environmental changes in the marine system on ecosystem resources and

services. It was recommended that the global assessment should be based on standardised regional and sub-regional ecosystem assessments, contributed by regional and sub-regional organisations and agreements, and grouped at the global level. While the assessment should be built on existing assessment programmes, participants did not consider it reasonable to expect assessments to be prepared by government-nominated experts and then endorsed by the governments who had nominated the experts.

13. It was strongly recommended that the assessment should not be a static process, but should include the development of ongoing trends and scenarios to demonstrate the implications for biological and socio-economic systems of changes in the global marine environment. It was agreed that the assessment would analyse the social and economic aspects being influenced by changes, but would not examine those aspects influencing changes. Additionally the assessment should identify, but not analyse, risks to human health; moreover the assessment should analyse other human uses of the environment (eg. those related to shipping).

14. The goals of the assessment were established as follows: *To provide on a regular and timely basis, scientific assessments of the state and trends of all aspects of marine ecosystems for use by policy makers. These assessments shall include consideration of socio-economic implications and identify scenarios so as to assist policy makers in addressing marine-related issues. The assessments should take the form of technical scientific reports, supplemented by summaries for policy makers’.*

*‘The mechanism and process to create such assessments must be transparent and independent. The assessments will be done by experts identified by governments, relevant UN bodies and regional organizations inter alia, who will provide their contributions on the basis of their individual expertise and with, where appropriate, advice from qualified experts and non-governmental organizations’.*

15. To meet these goals the following option was adopted: *‘A regular assessment of marine ecosystems would require the adaptation of an existing mechanism, which would work in co-ordination and co-operation with other mechanisms, building upon their work and recognizing that they may also require adaptation’*

16. Participants recommended that the mechanism selected to co-ordinate a regular global marine assessment process should demonstrate the following four main criteria: cost effectiveness; credibility; sustainability; and ability to address policy issues.

17. It was agreed that the next steps in the assessment process should be: the completion, and circulation for comment to a broad-range of interested parties, of the Reykjavik meeting report; a three-day technical workshop to outline a technical blueprint for the development assessment process (probably during the second quarter of 2002 after the GESAMP meeting scheduled in May 2002); an awareness meeting to follow, or take place during the CSD Preparatory Committee meeting in New York, between the 28<sup>th</sup> of January and 8<sup>th</sup> of February 2002.

## II. INTRODUCTION

18. The first informal consultative meeting on the “Feasibility Study for Establishing a Regular Process for the Assessment of the State of the Marine Environment” was held at Hotel Loftleidir, Reykjavik from 12-14 September 2001.

19. The objective of the meeting was to provide an initial exploration of the feasibility of establishing a regular process for the assessment of the state of the marine environment through the active involvement of national governments, UN agencies, and other organizations.

## III. OPENING

20. The meeting was opened by the Hon. Mrs. Siv Fridleifsdottir the Minister for the Environment, Iceland. The Minister began by expressing the sympathy of the Icelandic people for the previous days tragic events in the USA. She stated that the Icelandic nation had been shocked by the news and had expressed their sentiments by flying the national flag at half-mast. The Minister stated that she was honoured that Iceland had been selected to host the meeting, especially with regard to the country's dependence on the sea and its resources.

21. While she acknowledged the progress made in marine conservation over the last decade, the Minister emphasized that the deterioration of the marine environment was both continuing, and getting worse. She observed that the degradation of the marine environment was impacting not only fisheries but also the Earth's ecological and chemical cycles, and was subsequently impacting human development and progress.

22. The Minister drew attention to the commitment of Iceland to the protection of the marine environment, especially with regards to the country's assistance in the initiation of the feasibility study. She demonstrated concern over the detrimental impact of persistent organic pollutants (POP's) in the marine environment and welcomed the progress of the recent convention related to this issue (the Stockholm Convention on Persistent Organic Pollutants). The Minister stressed the importance of a thorough scientific understanding of the marine environment for sound decision-making. In conclusion, she welcomed the delegates and hoped for a fruitful meeting providing a positive outcome for the whole world.

23. Tim Foresman (UNEP-DEWA), Chairman of the meeting, thanked the Minister for her kind remarks and for the warm welcome the delegates had received. He stated that the desire of Iceland to host the meeting had been greatly appreciated, and that the meeting was sorely needed. The Chairman continued by thanking delegates for their participation in the meeting. He stated that it had been difficult to focus on the topic of the meeting, given the previous days terrible events in the USA.

24. The Chairman recognized that international co-operation was never easy, and used the example of the 'tragedy of the commons' to illustrate the difficulties of balancing human affairs with ecological services. Within the context of the marine environment he drew attention to the lack of both scientific co-ordination and conveyance of suitable information to policy makers and citizens.

25. He stated that UNEP was honoured to chair the meeting; that UNEP had developed no set plan of action for the meeting; and that UNEP's role in the assessment process would be decided by the participants. The Chairman emphasized

that the Governing Council Decision 21/13 (GC 21/13) had been instigated by co-operating national governments, under the leadership of Iceland, and had not been initiated by UNEP staff. The Chairman reminded participants that the meeting could be instrumental in formulating a plan to conserve the marine environment and the ecological services it provides to society.

#### IV AGENDA

26. The proposed agenda (Annex III) was presented and adopted without change. However as the meeting progressed, it followed a different scheme as determined by the dynamics of the meeting.

#### V. ATTENDANCE

27. UN representatives attended the meeting from UNEP DEWA, IOC\UNESCO, ACC-SOCA, UNEP-GIWA, UNEP-WCMC, UNEP-East Asia, Black Sea and South Asia Regional Seas. Governmental agencies were represented from Iceland, Sweden, Kuwait, Germany, Japan, USA, UK, and the Netherlands. Other organisations included the Marine Census Institute, GESAMP, IMO, PAME, Reef Check Europe, ICES, FAO, AMAP, CSD, IOI, and IPCC. In all 37 persons attended the three-day meeting. The complete list of participants is appended to the present report as Annex II.

#### VI. INTRODUCTORY PRESENTATIONS

(a) Global assessment of the state of the marine environment

28. Magnus Johannesson (Ministry of Environment, Iceland) introduced document 3/12 (Annex IV) outlining the need for a global assessment of the marine environment. He opened by stating that the condition of the marine environment, especially with regards to marine pollution, was a high priority issue for Iceland given the nation's dependence on marine resources. He informed participants that factors such as increased population growth, urbanization, industrial and agricultural development had substantially increased the significance of land-based sources of

marine pollution over the last 30 years. He suggested that around 80% of marine pollution was derived from land-based sources. Mr Johannesson considered that public opinion was a key issue in preventing further pollution of the marine environment, and suggested that both the public and media incorrectly perceive events such as oil pollution incidents as most damaging to marine systems.

29. Mr Johannesson informed delegates that the need to provide accurate information to decision-makers on the threats to the marine environment had been the motivation behind the Icelandic proposal. While scientific assessments over the previous 20 years had shown the continuing deterioration of marine systems, these studies had had little impact on decision-makers policy.

30. He emphasized the need for a clear signal to decision-makers that would build upon the disparate information available, and have relevance to policy development. Mr Johannesson suggested the development of scenarios to illustrate the future impacts and/or repercussions of marine policy measures for socio-economic systems. While he agreed that there was no fixed methodology for creating scenarios, he directed delegates to examine the work undertaken by IPCC as a successful example of scenario development.

31. Mr Johannesson concluded by stating that existing marine programmes must take account of the proposed overview, and that Iceland hoped that UN agencies would act to guide national governments.

(b) Presentation of UNEP Governing Council Decision 21/13

32. The Chairman introduced document 2/12, the UNEP Governing Council Decision 21/13 (Annex V); and provided a summary of document 4/12 the UNEP background document for the meeting (Annex VI).

33. Participants were informed of the suggestion by Iceland for the development of an Intergovernmental Panel on Marine Pollution made at the 7<sup>th</sup> session of the CSD and the 21<sup>st</sup> session of UNEP's Governing Council (GC), leading to the adoption by the GC of a decision on "Global assessment of the state of the marine environment"

(GC 21/13.). It was explained that this Decision requested the Executive Director, in co-operation with IOC/UNESCO and other UN agencies, the CBD Secretariat, and the regional seas programmes to explore the feasibility of establishing a regular process for the assessment of the state of the marine environment. Therefore UNEP's position was to: "*accept and implement the GC directive*"; and to "*assume the role of objective agency in conducting the feasibility study*".

34. The Chairman explained that the meeting needed to address the following:

- i. Ongoing assessment activities - examples include: GESAMP; GEO; GIWA; GOOS; GPA/LBA; Regional Seas Programmes; ICRAN; MA; UN Atlas of the Oceans; IPCC.
- ii. The organizational structure of a global marine assessment process
- iii. The central goal of this assessment
- iv. The scope of the assessment
- v. Possible sources of information
- vi. Technical constraints
- vii. Government involvement
- viii. Costs of the assessment process
- ix. The options available for developing a programme mechanism
- x. And the next steps for undertaking a global assessment

The Chairman's full presentation outlining these issues is included as Annex VII.

35. The Chairman continued by provided a brief history on the progress towards developing a global marine assessment to date, and concluded by stating that UNEP's role was to: listen to the inputs discussed; facilitate the consultative meeting process; and communicate the progress of he assessment, largely by publishing material on the internet at the following site: <http://www.unep.org/marineassessment>

(c) Discussion on the presentations

36. Following the two presentations above, there were some discussion by the participants on general aspects of the proposed marine assessment process. The need

for care in developing the first major cultural and disciplinary crosscutting global environmental initiative for a long-time was recognized. Participants were reminded that there was a need to incorporate all major organizational inputs, and that there should be no gaps in a comprehensive review of the global marine system. It was stated that for the assessment to be successful it was important to build upon, and coordinate, the goodwill of participatory bodies, including the provision of assistance in 'breaking down' cultural and institutional barriers to allow people from different disciplines (hydrologists, oceanographers etc.) to work closely together. It was recognized that international co-operation could be a very difficult process, and that co-operation between agencies within a country could also be difficult.

37. It was noted that the meeting should reflect the need to strengthen regional involvement, and to consider the role of national governments in the assessment process. Participants were reminded that GC Decision 21/13 specifies the active involvement of governments in developing the assessment process, that the Reykjavik meeting presented a good opportunity to both gain government opinions and to seek guidance on gaining governmental commitments to participate in a global marine assessment process. The need for a high level of transparency, in both the process and its goals, was emphasized; this was considered to be of particular value for encouraging governmental involvement.

38. Experiences from ongoing programmes indicated the need to clarify both the objectives and a definitive goal for the process before assessment efforts could commence. In response, the representative of UNEP reminded participants that no attempt had been made to formulate a goal prior to the meeting, and that the goal of the assessment would be defined during the course of the meeting.

39. Participants recognized that suitable interpretation of the information gathered by the assessment would only be feasible after a substantial period (several years) of data collection. The development of a long-term assessment process required consideration of sustainability issues by the meeting.

## VII. PRESENTATIONS BY REPRESENTED ORGANISATIONS

40. The following representatives provided presentations to the meeting on their organizational activities relating to the marine environment:

Lars-Otto Reiersen	Arctic Monitoring and Assessment Programme Secretariat (AMAP)
Heiner Naeve	Food and Agriculture Organization (FAO)
Patricio Bernal	Intergovernmental Oceanographic Commission (IOC)
Ed Green	World Conservation Monitoring Centre (UNEP-WCMC)
Vladimir Ryabinin	International Ocean Institute (IOI)
Pentti Mälkki	International Council for the Exploration of the Sea (ICES)
Dag Daler	Global International Waters Assessment (GIWA)
Georg Heiss	Reef Check Europe
Cynthia Decker	Marine Census Institute
Anne Rogers	Commission on Sustainable Development (CSD)
Hugh Kirkman	East Asia Seas Regional Coordinating Unit (EAS/RCU)
Umit Unluata	ACC Subcommittee on Oceans and Coastal Areas (SOCA)
Robert Duce	GESAMP

The presentations and available background documents are included as Annexes VIII to XX.

## VIII. PRESENTATION OF THE OUTCOME OF GESAMP EVALUATION AND RELEVANCE TO GC DECISION 21/13

41. René Coenen (GESAMP) informed the meeting about the recently completed independent and in-depth evaluation of GESAMP, which had been commissioned by its sponsoring agencies. The evaluators had recommended that GESAMP should be continued, provided major changes were made to GESAMP's structure, operational procedures and products, a conclusion the sponsoring organizations were willing to endorse in their initial response to the evaluation report.

42. The meeting noted that the sponsoring agencies were planning to formulate their conclusions about the evaluation and the future set-up of GESAMP at their meeting planned for February 2002. Government representatives recommended that they be involved in the final decision in this regard and that there be consultation between the two processes. A presentation outlining this process is provided as Annex XXI.

## IX. DEVELOPMENT OF WORKING GROUPS

43. The Chairman requested that participants should divide into three working groups to discuss, and report back during the meeting on the following issues:

- Working Group 1: A comparison of current assessment activities
- Working Group 2: A review of the suggested scoping questions presented in chapter 4 of the UNEP background document (4/12)
- Working Group 3: Guidance on the contents and structure of the meeting report, and possible future development of the Feasibility Study.

The list of issues investigated by each Working Group and the accompanying reports are provided as Annexes XXII to XXIV of this document.

## X. COMPARATIVE ANALYSIS

44. The Chairman of Working Group 1 presented a revised version of a matrix structure, developed during the meeting, for completion by participants, to provide a preliminary documentation of organisational assessment activities. Participants had requested edits to an initial matrix format presented at an earlier stage of the meeting to include the following aspects: further clarification of the term biodiversity; the inclusion of physical and geophysical data sources; the inclusion of water quality data sources; improved emphasis on the methodologies used.

45. The information provided by participants was compiled into two matrixes allowing an initial comparison of the assessment activities of individual organisations.

The results of this comparative exercise, including the two matrixes (presented as table 1 and table 2) are provided as Annex XXV of this document.

## XI. NEEDS AND SPECIFICATIONS FOR AN ASSESSMENT PROCESS

46. The Chairman invited meeting representatives from government agencies and intergovernmental organizations to outline their needs and requirements in the formation of an assessment process for the global marine environment.

There was common agreement that a global assessment process was desirable, that policy makers should be the principal target audience, and in respect of this the assessment should address the following issues:

1. Examination of current and future changes in the state of the global marine environment: evaluate the scientific material already available and the ability of this information to determine the current state of the marine environment
2. Determine the global impacts of changes in the marine environment: Provide an indication as to why policy makers should be concerned about changes in the state of the marine environment, especially with regards to impacts on socio-economic systems (especially human health).
3. Provide advice on actions required to mitigate the impacts of environmental change: Including suggestions for policy recommendations that could be developed to lessen impacts; possible remedial action; indication of opportunities for co-coordinated policy response at the international, regional and national levels.

Representatives identified the following main specifications for a global assessment process:

47. **The assessment should be focussed upon a comprehensive, broad marine ecosystem approach.** Equal consideration should be made for living marine organisms, their physical surroundings, and the natural cycles that sustain them. The

assessment will establish methodologies that demonstrate this integration, and will recognise that humans are an integral part of the global marine ecosystem. It is important that the global assessment should not solely concentrate on fisheries and/or biological resources, but should also include an evaluation of changes in the geophysical and chemical features of the oceans, and indicate the impact these changes would have on the Earth's ecosystems and functions

48. **The assessment will have a policy driven focus.** The principal target audience will be governmental policy makers, and as such, emphasis will be placed on providing high quality scientific advice on the state of the marine environment in formats that are both easily accessible and can be readily utilised by this group. The assessment will recognise that issues such as POPs can only be addressed through co-ordinated policy action at the international level; therefore any outputs of the assessment should be available to the global community. It was recommended that policy directed documents derived from the assessment should be authored by government writers, in collaboration with contributing scientists, so as to maintain full credibility for the actions of policy-makers.

49. **The assessment will be based on the best available scientific information.** While many of the UN agencies and other organisations represented at the meeting were recognised as world leaders in marine scientific expertise, it was agreed that any global assessment should encourage the use of the considerable scientific knowledge available within related intergovernmental organisations, relevant government departments, marine focussed NGO's, and recognised independent experts. To regulate the quality of scientific input into the assessment from this broad collection of sources it will be necessary to develop 'screening' process for contributors to ensure that scientific integrity is maintained. The nature of this screening process is to be formulised at subsequent meetings. The management of fishery resources was considered to already be sufficiently monitored by organizations such as the FAO and ICES, and it was recommended that they would be best placed to assess the status and trends of marine fisheries.

50. **The assessment should demonstrate full transparency throughout the process.** Transparency will promote confidence building and engender compliance; it

will provide reassurance to both partner organisations and national governments. Full transparency should be encouraged in demonstrating the scientific approach and input used; in the construction and management of the mechanism used to co-ordinate the assessment (including funding issues); in the contributions to the assessment by UN agencies and collaborating organisations; and in any policy recommendations generated by the assessment process. Contributing organisations should advise partners in the assessment of any consultations made; organisations with an interest in the development of the process should be given the opportunity to make their views known; the outcome of all consultations/meetings should be reported back to all participants for their consideration; and wherever possible attempts should be made to identify gaps in transparency coverage.

51. **The assessment should demonstrate an effective, inclusive, broad stakeholder approach.** Participants recognised that in the past there had been an unwillingness to co-operate between UN agencies and other organizations. It was recognized that collaboration between and within organisations was often difficult, and that any attempt to increase coordination and coherence among different institutes by the assessment process would be appreciated; the representative of AMAP presented an example of these difficulties.

52. The presentations of current assessment programmes that had indicated a substantial overlap in evaluation efforts. It was strongly emphasised that duplication of efforts, unhealthy competition, and information gaps should be identified and resolved as part of the assessment process to allow guidance towards the best utilisation of the limited funding resources available, and for future funding strategies. It was recommended that as part of the broad stakeholder approach the assessment process should encourage participation of other agencies, for example ECOSOC, when examining aspects such as the impact of increasing global population on the marine environment.

53. Participants recognised that an inclusive approach to the assessment was especially relevant to mostly enclosed marine areas such as the Baltic and Black Seas; that collaboration with all stakeholders in these areas was especially important to direct effective remedial action from limited resources.

54. **The assessment should build upon an existing framework.** During the meeting it was suggested that the assessment process might require the initiation of a new international agreement on the marine environment. There was strong agreement amongst participants that a new mechanism should not be initiated, that improved co-ordination within the UN system and other organisations was required, and that the assessment process should be built around an existing programme. Country representatives expressed that any proposals for new a mechanism would not receive support by their governments. There was support by a number of participants for the mechanism to be based upon a development of the activities of GESAMP

55. **The assessment should be sustainable.** Participants were reminded of the need to consider the assessment process as a sustained activity, especially with regard to developing specifications and infrastructure for the scientific community. It was emphasised that commitment by governments should already be sought during the design stage of an assessment. Participants were reminded that, in general, government ministries had fixed budgets available and as such would have difficulties in committing funding towards a long-term assessment process. The meeting also recognised the potential difficulties in locating funding resources for contributing university-based scientists.

## XII. SCOPE OF A GLOBAL ASSESSMENT ON THE STATE OF THE MARINE ENVIRONMENT

56. The Chairman of Working Group 2 presented summary findings in response to the suggested scoping questions for the development of a global marine assessment process, as presented in chapter 4 of the UNEP background document (4/12). The full results of the Working Group are presented in Annex XXIII.

57. There was a strong agreement that **the target audience for the assessment should primarily be public sector policy makers.** To reach this audience most effectively participants also strongly agreed with the suggestion presented in the UNEP background document of producing reports from the assessment in a ‘two-tier’ format: one report (first-tier) should be written as a scientific/technical report to

address the needs of the scientific community; the second report (second-tier) should cover the same information but written in a language and style adapted to the needs of policy makers. The use of the assessment is discussed below under ‘the goal of the global assessment on the state of the marine environment’.

58. It was agreed that **the assessment should not be a static process**, but should include the development of ongoing trend and scenario methods to demonstrate the implications for socio-economic systems of changes in the global marine environment. The assessment will not discuss the “acceptability” of these changes to socio-economic systems.

59. **The assessment should work within a geographical area defined as ‘marine and coastal ecosystems and associated estuaries’**. The assessment will examine inputs to this defined area, noting that impacts will also come from without the area (eg. watersheds and atmospheric deposition of pollutants).

60. **The assessment should be based on regional and sub-regional ecosystem assessments, grouped at the global level**. Collation of material at the global level may: provide guidance to increase opportunities for the production of comparable reports; identify and address shared and common problems; consider common methodologies; facilitate some regional and sub-regional assessments and provide for comparison of similar ecosystems (eg. upwelling).

61. **The assessment should analyse social and economic aspects being influenced by changes in the marine environment, but should not examine those aspects influencing changes**. While there was not full agreement on this issue by participants, a detailed review of socio-economic factors influencing changes in the marine environment was largely considered to be beyond the scope of the assessment process.

62. It was agreed that **the assessment should provide an analysis of the impacts of changes in the marine environment on ecosystem goods and services**. The assessment will analyse the impact of land based activities (including tourism) and fisheries on the quality and uses of the marine environment and its ecosystems.

63. **The assessment should adopt an ecosystem approach to the analysis of marine resources such as fisheries and minerals.** It should not duplicate analytical work undertaken by recognised bodies, such as the FAO, and will identify and resolve potential overlaps in effort during its development.

64. Where possible **the assessment should identify, but not analyse, risks to human health;** moreover **the assessment should analyse other human uses of the environment** (eg. those related to shipping).

65. It was agreed that to identify appropriate material from all available data sources **the assessment process should develop a formalised data quality control component.**

66. Whilst the assessments primary audience has been identified as policy-makers (as detailed above), it must be recognised that **the assessment should be both a science-orientated and policy-orientated process.**

67. In relation to the issue of periodicity of assessments it was agreed that further experience was needed in this matter to before a recommendation could be made. The issue of periodicity should therefore be revisited at a later stage in the development of the process.

68. Within the context of **governmental involvement in the assessment process** it is anticipated that governments will provide nominated experts to participate in scientific assessment procedures. Participants agreed on the need to include experts from intergovernmental organisations, such UN bodies, and to initiate a supplementary process to ensure that all areas of expertise are included. It was further agreed that the assessment process should include a role for governments in question formulation and in reviewing scientific input.

69. It was agreed that, where possible, **regional and sub-regional organisations and agreements** should contribute to the global assessment process by providing

appraisals, standardised through guidelines, of all aspects of the marine environment within their specified area of operation.

70. While the assessment would benefit from being built on an **existing assessment programmes**, it was not considered reasonable to expect that the regional and national assessments will be prepared by government-nominated experts and endorsed by the relevant governments or group of governments.

71. The involvement of scientific communities or non-governmental organisations is discussed below under the goal of the global assessment on the state of the marine environment. At this early stage of assessing the feasibility of developing an assessment process it was difficult to provide any suggestions as to the potential costs of the assessment process and any technical constraints.

### XIII. THE GOAL OF THE GLOBAL ASSESSMENT ON THE STATE OF THE MARINE ENVIRONMENT.

72. Mr Thomas Laughlin (NOAA) outlined a draft goal developed by a small contact group. He explained that the draft goal had been based on (and expanded upon), an initial combination of the two formulations presented on page 21 of the UNEP background document (Annex VI). Key elements in the formulation of the draft included:

- a) adoption of the phrase '*regular and timely*' assessments, instead of '*continuous*' assessments.
- b) use of the word '*ecosystems*' rather than '*environment*' to better reflect inter-relatedness.
- c) inclusion of '*all aspects*' of the marine ecosystems.
- d) that the assessment should assist policy makers.
- e) that the assessment should address socio-economic implications, through the use of trends/scenarios.
- f) publication of the assessment in both scientific and 'policy friendly' formats.
- g) the inclusion, but not repetition/duplication of, regional organization assessments.

h) the inclusion of non-governmental organizations in the process

73 The draft did not elaborate on means of public participation, the scope of the study, and assessment methodologies. All of which were to be discussed at a later stage of the meeting.

### Discussion

74 Participants were invited to comment on the draft goal and suggest possible edits. Many of the comments received relate directly to the needs and requirements of the assessment set out above under the needs and specifications for an assessment process.

75. Participants agreed that the goal must indicate policy-makers, such as governments and international conventions, as these would be the main target audience for the assessment. It was strongly reiterated that any assessments should be produced in two formats: technical scientific reports, and summary documents for policy makers. It was recommended that the goal should demonstrate the need for transparency in all aspects of the assessment process.

76. A need to clarify the definition of marine ecosystems was identified; so as not to understate the importance of physical and chemical systems. It was suggested that a footnote giving a clear definition of marine ecosystems could be included in subsequent reports. Participants stated that the goal should illustrate that the process would examine both the state, and importantly, trends of all aspects of the marine environment. The potential of the assessment to relate these trends to socio-economic systems was also indicated.

77. While it was recognized that the selection mechanism for experts engaged in the assessment should be indicated, it was recommended that the selection process should not be so restrictive as to exclude the best available experts outside of governmental organizations.

78. The meeting also considered it important to demonstrate that the assessment would be based on the best available science to make it of greater value to the scientific community. The meeting concluded that the assessment must be made widely available to all users, especially with regard to institutions that have a significant impact on marine systems.

79. **The following draft goal was adopted:**

*‘To provide on a regular and timely basis, scientific assessments of the state and trends of all aspects of marine ecosystems for use by policy makers. These assessments shall include consideration of socio-economic implications and identify scenarios so as to assist policy makers in addressing marine-related issues. The assessments should take the form of technical scientific reports, supplemented by summaries for policy makers’.*

*‘The mechanism and process to create such assessments must be transparent and independent. The assessments will be done by experts identified by governments, relevant UN bodies and regional organizations inter alia, who will provide their contributions on the basis of their individual expertise and with, where appropriate, advice from qualified experts and non-governmental organizations’.*

#### XIV. OPTIONS TO SATISFY REQUIREMENTS FOR A REGULAR PROCESS

80. The following three basic options were presented in the UNEP background document for satisfying the requirements for a regular process for the assessment of the marine environment.

- (a) adaptation of an existing assessment mechanism and programme to satisfy the requirements laid down in decision 21/13;
- (b) establishment of a mechanism to co-ordinate the work and outputs of existing assessment mechanisms and programmes;
- (c) creation of a new assessment mechanism and programme that would build on ongoing assessment programmes and mechanisms

## Discussion

81. Delegates rejected option (c.) with regard to the earlier debate (on needs and specifications of governments) concluding that a new assessment mechanism should not be developed. A combination of elements from options (a) and (b), drafted earlier by the small contact group on the assessment goal was presented.

82. It was requested that the option should emphasize the need for co-operative co-ordination between organizations.

83. Participants agreed on the need for an adaptation of a single existing mechanism, rather than the use of several mechanisms, should be indicated in the option. This singular assessment mechanism should provide guidance on the possible adaptation of contributing mechanisms.

84. **The following draft option was adopted** to meet the goal of the assessment:

*‘A regular assessment of marine ecosystems would require the adaptation of an existing mechanism, which would work in co-ordination and co-operation with other mechanisms, building upon their work and recognizing that they may also require adaptation’*

### XV. CRITERIA TO DETERMINE THE SUITABILITY OF AN EXISTING ASSESSMENT MECHANISM OR PROGRAMME

85. Delegates were requested to identify suitable criteria needed in an existing assessment mechanism to satisfy the requirements of decision 21/13. The following programme options presented in the UNEP background paper were introduced:

- (i) to "nest" the assessment within the GEO project/process;
- (ii) to use an adequately reformed GESAMP;
- (iii) to use GOOS, with a broadened mandate, as the general framework for the assessment; or
- (iv) to set up the process as follow-up to GIWA.

86. Participants initially began by listing all of the issues of building upon an existing programme. There was concern that the exercise provided a repetition of much of the input of Working Group 2. Participants therefore identified the following four criteria as being key elements of the mechanism to be built on:

- a) Cost effectiveness
- b) Credibility
- c) Sustainability
- d) Ability to address policy issues

A full list of attributes for each of these criteria is provided as Annex XXVI of this document.

#### Discussion on the identified criteria

87. Participants were invited to generally discuss the mechanism to co-ordinate a global marine environment assessment. Concern was raised about the important aspect of sustaining the assessment process to allow long-term reporting on status and trends in the marine environment. It was suggested the mechanism would be vulnerable to varying commitments of individuals and organizations.

88. Participants considered it dangerous to limit the number of options available (i to iv) at the initial meeting. There was further concern that initiatives such as the Millennium Ecosystem Assessment had not been included among the suggested mechanisms. Participants were informed that the choice of mechanism to use was not limited to the options presented, that these were just initial suggestions as to possible mechanisms for co-ordinating the assessment process. It was recognized that none of the suggested, or other active, mechanisms would fit all criteria for the marine assessment process. And it was agreed that the mechanism selected might need to adapt its activities to undertake effective coordination of the marine assessment. Participants recommended that the mechanism should not be 'nested' within the GEO process, as it was believed that GEO had too broad a coverage to accommodate a specifically marine orientated global assessment. A number of the participants

supported the use of a reformed GESAMP, provided with adequate funding, as best mechanism option available, largely because of its strong scientific expertise.

89. There was concern that without identifying a suitable mechanism the meeting would be unable to progress towards examining the next steps. In reply it was suggested that it was possibly premature at this stage of determining the feasibility of establishing an assessment process to examine and identify mechanisms with the necessary criteria.

90. It was suggested that an Internet forum could be established to further discuss mechanism options. However participants believed that a set (face-to-face) meeting would be more effective in resolving these issues. The participants agreed that further meetings and/or workshops were required to comprehensively identify organizations to undertake the next steps.

#### XVI. OBSERVED SILENCE

91. Participants observed three minutes silence as a mark of respect for the victims of the terrorism acts committed in New York, Washington DC and Pennsylvania on the 11<sup>th</sup> of September 2001.

#### XVII. AGREEMENT ON NEXT STEPS

92. Participants reviewed the findings of Working Group 3 into the possible future development of the Feasibility Study. Agreement was reached that the following steps should be undertaken to advance the assessment process.

##### Step 1. Production process of the Report on the Feasibility for Establishing a Regular Process for the Assessment of the State of the Marine Environment.

- a) UNEP to produce a draft report detailing the needs and recommendations for a global marine assessment process identified during the Reykjavik meeting.  
The current report is intended to satisfy this point.

- b) The report should include the collated organizational comparative exercise initiated by Working Group 1 at the Reykjavik meeting. Organizations will receive a set deadline from UNEP to contribute to this exercise (this deadline was subsequently set at the 12<sup>th</sup> of October). The current report is intended to satisfy this point with the comparative matrix published on the Internet.
- c) A draft letter for the UNEP Executive Director (Klaus Töpfer) is to be drafted inviting participation by organizations in the process.
- d) A list of agencies invited to review the report will be drafted by UNEP (An initial list is attached as Annex XXVII). The list of invitees should not be restricted to UN agencies. Participants at the Reykjavik meeting will be invited to suggest other relevant organisations.
- e) The final meeting report will be sent to identified organizations for comment and review.
- f) Appropriate revisions and edits will be undertaken.
- g) The report will be adapted and translated by the 1st of December, in time for the Ministerial Forum in December 2002.

Step 2. Potential meetings for further discussion of the Feasibility for Establishing a Regular Process for the Assessment of the State of the Marine Environment.

Participants agreed that subsequent meetings were required to provide further guidance on the development of a global assessment process. The following prerequisites and actions were recommended

Meeting prerequisites:

- a) Country financing must be established. UN Executive Director is to send a letter seeking willingness of countries to support the process.

- b) Appropriate participants are to be identified.
- c) Funding to be gained for the attendance of participants from developing countries.
- d) Attending organizations should contribute their own costs.

93.        Technical Workshop

A three-day technical workshop (probably during the second quarter of 2002 after the GESAMP meeting scheduled in May 2002, and depending of the availability of funds) will be planned to outline a technical blueprint for the development of the global marine assessment process.

94.        Awareness/Linkage Meeting

The awareness meeting should follow, or take place during the CSD Preparatory Committee meeting in New York, between the 28<sup>th</sup> and 8<sup>th</sup> of February 2002. Objective is to raise awareness and determine linkages between the global marine assessment process and other initiatives.

## XVIII. CLOSE OF MEETING

95.        Magnus Johannesson conveyed his regards to participants and hoped that they had enjoyed their stay in Iceland. He felt that the meeting had made excellent progress in the development of a global marine assessment process. He congratulated participants for both their assistance in developing the goals for the process, and helping to determine the way forward.

96.        Mr Johannesson asked participants to build on the organizational comparative exercise, and hoped that all attending agencies would be able to contribute to this before the meeting in Paris. He reiterated that there was a need to consider the work required before institutionalization of the process could take place. He congratulated UNEP on their handling of the meeting, which he believed had increased goodwill

and understanding between agencies towards a comprehensive assessment of the state of the marine environment.

97. Tim Foresman, thanked Mr Johannesson for his kind comments, and congratulated participants on an open and constructive meeting. He continued by reminding the meeting that it was a difficult time with many challenges, and that it was time to be concerned with the whole world rather than individual agendas. He concluded that given Iceland's dependence on marine resources it had been a very appropriate venue for this initial meeting. He thanked the Icelandic government for their hospitality, and closed the meeting.

ANNEX ILIST OF ANNEXES

Annex I	List of Annexes
Annex II	Participant list
Annex III	Agenda
Annex IV*	Iceland Discussion Paper (document 3/12)
Annex V*	UNEP GC Decision 21/13 (document 2/12)
Annex VI*	UNEP Background Paper (document 4/12)
Annex VII*	Presentation by UNEP
Annex VIII*	Presentation by the Arctic Monitoring and Assessment Programme Secretariat (AMAP)
Annex IX*	Presentation by the Food and Agriculture Organization (FAO)
Annex X*	Presentation by the Intergovernmental Oceanographic Commission (IOC) (document 6/8)
Annex XI*	Presentation by the World Conservation Monitoring Centre (UNEP WCMC)
Annex XII*	Presentation by the International Ocean Institute (IOI)
Annex XIII*	Presentation by the International Council for the Exploration of the Seas (ICES)
Annex XIV*	Presentation by the Global International Waters Assessment (GIWA)
Annex XV*	Presentation by Reef Check Europe
Annex XVI*	Presentation by the Marine Census Institute
Annex XVII*	Presentation by the Commission on Sustainable Development (CSD)
Annex XVIII*	Presentation by the East Asia Seas Regional Coordinating Unit (EAS/RCU)
Annex XIX*	Presentation by the ACC Subcommittee on Oceans and Coastal Areas (SOCA)
Annex XX*	Presentation by GESAMP
Annex XXI*	Outcome of the GESAMP Evaluation and Relevance to GC Decision 21/13
Annex XXII	Report of Working Group 1
Annex XXIII	Report of Working Group 2

Annex XXIV	Report of Working Group 3
Annex XXV	Comparative analysis
Annex XXVI	Criteria to determine the suitability of an existing assessment mechanism or programme
Annex XXVII	A Draft List of Agencies Invited to Review the Report on the Feasibility Study for Establishing a Regular Process for the Assessment of the State of the Marine Environment
Annex XXVIII	List of acronyms

*An asterisk (\*) indicates that the annex is not supplied with this document, but is available at the following UNEP Internet site:*

[Http://www.unep.org/marineassessment](http://www.unep.org/marineassessment)

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ANNEX III      DRAFT ANNOTATED AGENDA

12 September 2001

11:00 – 11:15 Welcome and Opening. The Honourable Minister Mrs. Siv Fridleifsdottir, Iceland Ministry for the Environment, will welcome participants and open the meeting.

11:15 – 11:30 Opening remarks. Dr. Tim Foresman, UNEP, will make opening remarks and inform participants of the objectives and expectations of the meeting.

11:30 – 11:45 Adoption of agenda – Dr. Timothy Foresman, UNEP, Chairperson, will invite the Meeting to adopt the agenda for this meeting, as annotated below. The Chairperson will introduce some housekeeping issues pertaining to the conduct of this meeting.

11:45 – 12:10 Presentation of Iceland discussion paper – Dr. Magnus Johannessen, Secretary General, Min. for the Environment, Iceland. An overview of Iceland discussion paper on which GC decision 21/13 is based, will be presented. Copies of the paper will be distributed at this meeting.

12:10 – 12:40 Presentation of GC decision 21/13 – Dr. Timothy Foresman. GC decision 21/13 on the feasibility of establishing a regular process for assessment of the state of the marine environment, will be presented. Copies of the text of this decision will be distributed at this meeting as well as the background paper that has been prepared by UNEP.

12:40 – 14:00 Lunch

14:00 – 16:00 Presentations by Organisations. Each organisation will give a 10-minute presentation on its activities related to assessment of the marine environment (AMAP, CSD, FAO, GESAMP, IMO, IOI, IPCC, IOC/UNESCO/SOCA, NOAA, Ocean Initiative, Regional Seas?, Country Reps?).

16:00 – 16:30 Outcome of GESAMP evaluation and relevance to GC decision 21/13 – Dr. Rene Coenen, IMO Technical Secretary of GESAMP. The Meeting will be informed of major recommendations coming out of the recently-conducted GESAMP evaluation.

16:30 – 17:30 Open discussion on existing programmes. Participants will be invited to engage in discussion of the work of existing marine assessment programmes with a view to identifying and quantifying needs, and identifying gaps and concerns. The discussion will focus on a comparative analysis of existing programmes.

17:30 Reception

### 13 September 2001

9:00 – 9:30 Continuation of previous item

9:30 – 11:00 Prioritisation of needs and specifications. Identified needs will be prioritised based on previous discussions. This will allow the scope of the new programme to be determined in this session.

11:00 – 11:15 Coffee break

11:15 – 12:30 Feasibility and mechanisms of addressing needs. The Meeting will explore various options for mechanisms for addressing identified needs, and determine if another process, other than those already existing, is required. Possible scenarios for the establishment of a regular programme for assessment of the state of the marine environment, including institutional framework, financial mechanism, etc., will be explored.

12:30 – 14:00 Lunch

14:00 – 15:30 Consensus on the need for a regular programme to assess the marine environment. At this time the Meeting will be invited to consider whether there is a

need for a regular programme for assessment of the state of the marine environment, and to propose options for conduct of the feasibility exercise.

15:30 – 15:45 Coffee break

15:45 – 17:00 Continuation of previous item

#### 14 September 2001

9:00 – 11:00 Recommendations for feasibility study The Meeting will be invited to make recommendations for the feasibility exercise. Approval will be sought from the Meeting on the needs, organisations and their respective roles in the feasibility study.

11:00 – 11:15 Coffee break

11:15 – 12:30 Continuation of previous item

12:30 – 14:00 Lunch

14:00 – 15:30 Agreement on next steps. Meeting will be invited to confirm their agreement on the next steps to be taken, as well as the role of each organisation in follow-up activities.

15:30 – 16:00 Concluding remarks and closing of the meeting - Dr. Timothy Foresman

ANNEX XXII    REPORT OF WORKING GROUP 1. A COMPARISON OF  
CURRENT ASSESSMENT ACTIVITIES: BASE MATRIX

<b>USERS</b>		<b>OUTPUTS OF ASSESSMENTS</b>	
Governments		Scientific reports	
Science		Scientific summary	
Independent		Policy report	
Commercial-corporate		Education material	
Public information		Public awareness	
Educational			
Governance			
Intergovernmental orgs.			
<b>DATA PROVIDERS-SOURCE</b>		<b>DATA QUALITY ASSURANCE</b>	
Gov't agencies		Peer-review	
Academia		Non-peer review	
Commercial (Incl. industries)		Long term	
NGOs		Short term	
Individuals		Standard	
Intergovernmental Orgs.		Non-standard	
		Others	
<b>DATA TYPES</b>			
Socio-economic		<b>FUNDING</b>	
Living marine resources		Source	
Pollution		Short term	
Habitat		Long term	
Pathogens			
Biodiversity		<b>PARTNERSHIPS (6 MOST RELEVANT)</b>	
Geographical data			
Carbon cycles			
Alien species			
Human health			
Physical data			
Ecosystem structure			
Physical-geographical			
Non-living			

resources			
Nutrients		<b>GEOGRAPHICAL COVERAGE</b>	
Water quality		National	
		Global	
<b>METHODS</b>		Regional	
Ecosystem approach		Ecosystem	
Future state scenarios		Site specific	
Biogeographical approach			
Pressure-state-response			
Indicators use			
Causal chain analysis			

REPORT OF WORKING GROUP 1. A COMPARISON OF CURRENT  
ASSESSMENT ACTIVITIES: GUIDELINES

<b>GOVERNMENT INVOLVEMENT</b>	In your agency Reply <b>yes</b> or <b>no</b>		
<b>USERS</b>		<b>OUTPUTS OF ASSESSMENTS</b>	
Governments		Scientific reports	Priority 1
Science		Scientific summary	
Independent	Individuals who need these data	Policy report	Priority 1
Commercial- corporate	Includes consultants and industry	Education material	
Public information		Public awareness	
Educational			
Governance	To assist with the governance of the nation		
Intergovernment orgs.	Includes UN agencies		
<b>DATA PROVIDERS-SOURCE</b>		<b>DATA QUALITY ASSURANCE</b>	This section is covered by adequate metadata
Gov't agencies		Peer-review	
Academia		Non-peer review	
Commercial (Incl. industries)	Consultants, fishing industry etc	Long term	Periodicity
NGOs		Short term	Periodicity
Individuals		Standards	Were standard methods used? Which standards?
Intergovernmental Orgs.	Includes UN agencies	Non-standard	
		Others	Other metadata descriptions
<b>DATA TYPES</b>			
Socio-economic		<b>FUNDING</b>	
Living marine resources	Fisheries, seaweed,	Source	What is the source of your funding?
Pollution	POPs, sediment, heavy metals, hydrocarbons	Short term	Is it short or
Habitat	Ecosystems,	Long term	Long-term?
Pathogens	Bacteria, viruses that effect humans or marine animals or plants		

Biodiversity		<b>PARTNERSHIPS (6 most relevant)</b>	
Geographical data	Topography, geological		
Carbon cycles	Refers to CO <sub>2</sub> and climate change		
Alien species	Introduction in eg ballast water		
Human health	Toxic algal blooms, hazardous chemicals		
Physical data	Salinity, temp, depth,		
Ecosystem structure	Composition by species diversity and abundance		
Non-living resources	Hydrocarbons, mined minerals		
Nutrients	Causing eutrophication and coming from agriculture or wastewater sources	<b>GEOGRAPHICAL COVERAGE</b>	
Water quality	Clarity, phytoplankton, chemicals, salinity,	National	
		Global	
<b>METHODS</b>	Many of these are involved with modelling	Regional	
Ecosystem approach		Ecosystem	Are the data collected on an ecosystem wide basis?
Future state scenarios	Predictive models	Site specific	Are the data site specific?
Biogeographical approach	Area divided into bioregions		
Pressure-state-response	Often used in State of Environment reporting		
Indicators use	Biological or physical measures of change revealed by a single or a few indicator		
Causal chain analysis	Cause of change may not be obvious cause		

ANNEX XXIII REPORT OF WORKING GROUP 2. A SUMMARY REVIEW OF THE SUGGESTED SCOPING QUESTIONS PRESENTED IN CHAPTER 4 OF THE UNEP BACKGROUND DOCUMENT (4/12).

Introductory comment

This document provides guidelines for the scope of a Regular Process for the Assessment of the State of the Marine Environment. Please refer to section 4.1 of the UNEP background document (4/12) for details of the issues upon which this document is based.

Users and use of the assessment and central goal or purpose for establishing the assessment process

- Users: Primarily public sector policy makers at the appropriate level and also constructed to be useful to the private sector.
- Use: See discussion of goals.

Scope of the assessment

- Not static, should include trends and scenarios; should provide and assessment of implications but not “acceptability” (So, the report would only mention implications, not acceptability, as the report will not be in the form of amending the UNEP document.)
- Should be a bounded geographical area defined as marine and coastal ecosystems and associated estuaries. We should be looking at inputs to this defined area, noting that though the impacted area is so defined, impacts will come from without – e.g. watersheds and atmospheric deposition of pollutants.
- Assessment should be based on regional and subregional ecosystem assessments, grouped at the global level. Global level could: provide guidance to increase opportunities for comparable reports; identify and address shared and common problems; consider common methodologies; facilitate some regional and

subregional assessments and provide for comparison of similar (e.g. upwelling) ecosystems.

- The assessment will: analyze social and economic aspects being influenced but not those influencing; analyze impacts on ecosystem goods and services (reformulation); take language on land based activities and fish as in existing text; resource management, examined by the ecosystem approach; will not duplicate work undertaken by the FAO; will identify possible overlap in efforts as an item to watch as process moves forward.
- Identify risks to human health (it will not analyze these risks)
- Analyze other human uses to end, as in text.
- Within the context of the UNEP background document there is a need to remove the term “‘legitimate” sources of information’, and include a general point that the assessment process much have a data quality control component.
- The assessment should be both a science-orientated and policy-orientated process

#### Nature of the regular process for the assessment

- Disagreement with the need to identify periodicity now. Need further experience on this matter to proceed.

#### Level of modalities of government involvement

- Government nominations of experts to undertake scientific assessment. Also a need to include experts from UN organizations and initiate a supplementary process to assure all expertise included.
- There is a need to include a role for Governments in question formulation and reviewing scientific input.

#### Involvement of regional agreements

- Regional and Sub-regional organizations and agreements should, where possible, undertake their ecosystem assessments (see points on Scope above).

- Agreement that guidelines could be produced for regional assessments.

#### Building the assessment process on ongoing assessment programmes

- Disagreement with footnote 61. Especially with regard to the term '*endorsed*'.

#### Involvement of scientific communities or the non-governmental organizations

- This will be included as part of the overall goal for the assessment.

#### Costs of the assessment process

- No comment

#### Technical constraints

- No comment

ANNEX XXIV      REPORT OF WORKING GROUP 3: GUIDANCE ON THE CONTENTS AND STRUCTURE OF THE MEETING REPORT, AND POSSIBLE FUTURE DEVELOPMENT OF THE FEASIBILITY STUDY.

Summarisation

I We wish to prepare a report from this meeting to reflect broad perspective and agreement that:

- Regular assessment is necessary
- An ‘assessment process’ is feasible... but more work necessary to define specifics of the feasibility.
- We need to define how to develop on “assessment process”
- We draft a report.

II Process required to proceed

A. Submit the report to Klaus Töpfer

B. Recommend that Klaus Töpfer send a letter to appropriate Agencies:

- Inviting their participation in the feasibility study
- Inviting the hosting of meetings and other support

C. Convene “agreeing” partners to meeting series

REPORT OUTLINE - GC 21/13

I.      Preambles

- Set the principles, what is driving the report?
- Comprehensive, broad marine ecosystem approach
- Policy driven focus
- Scientifically based

- Transparency
- Inclusiveness, broad stake holder approach
- Building on existing framework

## II. Current Conditions and Comparative Analysis

- Existing known resources (Group 1)
- Identification of barriers and weaknesses
- Highlighting gaps

## III. Scoping the response

- Reference to Group 2

## IV. Options: The way forward

## V. Next steps

### SIGNIFICANT DATES AND EVENTS.

#### 2001

- Regional Seas meeting – November 23-24<sup>th</sup>
- GPA/LBA Review – November 2001 (26-30<sup>th</sup>)
- IOC – December 3<sup>rd</sup>

#### 2002

- GFEM – February 2002
- GESAMP – May 2002
- World Summit on Sustainable Development – September 2<sup>nd</sup>

#### 2003

- UNEP GC 22 – February 2003

## I. INTRODUCTION

1. The following exercise collates the individual matrixes received from participants, and provides a preliminary overview of the activities of the organisations represented at the meeting. The summary generally intends to provide a brief description of the information provided by participants; suggest areas where duplication of efforts may be occurring; attempt to identify gaps in the use of information resources or monitoring activities; and suggest potential for further collaboration between participants and other organisations in the context of developing a global marine environment assessment process.

The collated matrixes are presented below as tables 1 and 2.

## II. USER GROUPS

2. A broad range of user groups was identified by each individual organisation, with almost all participants identifying intergovernmental, governmental, and scientific organisations as the principal users of their data. This was largely unsurprising as many of the organisations represented were scientifically orientated agencies, or regional agreements whose general objectives include assisting decision-making activities by intergovernmental and governmental organisations.

3. There is undoubtedly some overlap in the targeting of these user groups by the represented organisations. While some collaboration does occur, there are almost certainly still considerable opportunities for improved cooperation between organisations to avoid unnecessary competition for limited funding resources, and to deliver important interdisciplinary assessments (emphasising the common ecosystem approach) on marine resources. Collaboration and cooperation should be encouraged wherever possible.

4. Several of the organisations represented produce material for public information and educational purposes. Although much of this material may be

specifically targeted at local or regional user groups, there is potential for organisations to collaborate in the development of a common 'resource pool', that would allow comparison between regions and with global trends. The 'resource pool' could take the form of a general website with hypertext links to participating organisations and relevant resources.

5. Fewer organisations identified commercial-corporate companies and independent agencies/individuals as significant user groups. There is scope to investigate potential sources of sponsorship from these bodies.

### III. DATA PROVIDERS-SOURCES

6. The main data providers identified by participants were intergovernmental organisations, government agencies, and scientific academia.

7. Although individual experts and NGO's hold an enormous body of pertinent data these resources are less frequently used. Further investigation is required into the opportunities for using this material and for involving its holders in sustained collaboration with organisations participating in the regular process for the global assessment of the marine environment.

8. Relatively few participants appear to use commercial data sources. This is somewhat surprising as commercial sources, and their associated industrial bodies, can provide substantial comparative data on a wide range of marine related topics such as coastal tourism growth, and the coral reef fish trade. Further consideration should be given to using these resources where appropriate.

### IV. DATA TYPES

#### a) living resources

9. The majority of organisations represented at the meeting collect data on living marine resources (fisheries, coral etc.); socio-economic data; and/or geographical data. There is significant coordinated collaboration between national, regional, and

global bodies (eg. FAO and ICES) in the collection and dissemination of information on commercial marine fisheries (such as landings and stock status). The ordered monitoring of these resources provides a valuable base for the inclusion of this information within a global marine environment assessment.

10. Whilst not as well structured as for marine fisheries, there is already considerable collaboration between organisations working with other living marine resources (such as coral reef fishes), particularly through the development of partnerships such as the International Coral Reef Initiative. However there is a need to further strengthen these relationships so as prevent duplication of efforts, and to add value to any outputs produced. It seems probable that the development of a common mechanism, such as the global marine assessment process, will further enhance coordination between these organisations.

b) socio-economic

11. Many of the organisations represented are concerned to some degree with producing data related to socio-economic issues. While there is quite a broad coverage of subjects relevant to the marine environment, most focus around the use of marine resources by coastal communities, the socio-economic aspects of commercial fisheries, and the impact of land-based activities on marine systems. Further, detailed, analyses of the socio-economic issues covered by represented organisations, beyond the scope of this present document, are required. There are significant opportunities to form collaborative links with relevant global organisations such as UNDP.

c) geographic

12. The majority of participating organisations produce geographical marine information; this information is commonly presented as spatial data in map format. The information available suggests that a broad range of subjects, including biodiversity hotspots, habitat distribution, topography, and geology are reasonably well recorded at both regional and global level. There may be some overlap in efforts to collect material, and participants should be encouraged to collaborate wherever possible to prevent duplication occurring. A comprehensive review of the geographic

datasets available from potential contributors to the global marine assessment would be of value. The review should provide detailed information on the datasets held by participants, the quality of these data, and the global coverage of the datasets.

d) habitats

13. The majority of organisations represented indicate that they gather information on marine habitats. However from the information received it is unclear as to which particular habitats are monitored and at what magnitude this monitoring is undertaken. There is a need for a further, more detailed, review of the information held and/or collected by organisations to fully identify duplication of efforts and information gaps. The review should address standardisation in the definition of habitat types; agreement on the current extent of specific habitats; reported changes in habitat area (where area can be adequately defined); and standardisation of methods by which changes in the apparent quality or integrity of habitats may be recorded.

e) pollution

14. Pollution of the marine environment is monitored by many of the participating organisations. The level of importance attached to collecting information on pollutants varies greatly between represented organisations. The Global Investigation of Pollution in the Marine Environment (GIPME) Programme co-sponsored by the IOC, UNEP, and the IMO provides a firm baseline from which to examine the impacts of pollution on the marine environment at the global scale. In addition, a number of regional organisations such as AMAP collect and publish a considerable array of information on a number of pollutants, such as POPs, heavy metals, and hydrocarbons. For other organisations, such as UNEP-WCMC, pollutants are not a priority issue; however data relating to specific pollution incidents such as oil spills are often maintained.

15. There is a general need to involve a much broader range of organisations focussed on pollution issues within a global assessment programme. These may include experts from national marine institutes, representatives from intergovernmental bodies such as the Convention on the Prevention of Marine

Pollution by Dumping of Wastes and Other Matter, and representatives from commercial/industrial sources.

f) pathogens and alien species

16. Information on pathogens and alien species is gathered by a number of the organisations. Pathogens are generally represented by regional level data, although material for some specific pathogens is available at the global level (for instance as UNEP-WCMC's coral disease datasets). It appears that more comprehensive, global, information is required on the impact of pathogens, most especially those affecting human health and commercial fish stocks. FAO and UNEP-WCMC provide records of introductions of marine species at a global scale. There appears to be potential for increased coordination between regional and global bodies to fully document introductions. There is also scope for collaboration with commercial organisations which may contribute to accidental introductions, for instance in ballast water, and with those bodies specifically concerned with alien species, such as The IUCN\SSC Invasive Species Specialist Group.

g) ecosystem structure

17. Data on ecosystem structure, (species composition, and abundance) are generally collected by organisations concerned with marine biodiversity at either a global (eg. UNEP-WCMC) or regional level (eg. EAS/RCU). While the structure of some ecosystems such as tropical coral reefs is reasonably well-documented by these organisations, a broad review of the available knowledge on the structure of less-well known ecosystems, such as deep-sea coral reefs, would be of value in the development of a global assessment process.

h) non-living resources

18. Several of the represented organisations collect data on non-living resources such as hydrocarbons and mined minerals. Within the current study it is difficult to gauge the adequacy of the global coverage for comprehensively monitoring these aspects of the marine environment. A more detailed review is required to both identify

information gaps, and to investigate the very high potential for beneficial collaboration with commercial sources.

i) carbon cycles

19. Information on carbon cycles within the marine environment is collected by a number of regional (eg. AMAP) and global organisations (eg. IOC, especially through GOOS). It would be useful for a global marine assessment process to build on this information base, in order to provide comparisons of regional carbon variations and to illustrate global trends in marine carbon cycles. Full collaboration with organisations concerned with global climate change (such as the IPCC) should be encouraged.

j) physical

20. There is a generally good global coverage for monitoring physical marine systems. Information on aspects such as salinity, temperature, and depth are widely collected at both the regional and global level. It may be of value to a global assessment to identify organisations monitoring these characteristics within each geographical area.

k) human health; physical-geographical; nutrients; water quality

21. Few organisations represented are concerned with producing data on human health issues, physical-geographical data, nutrients, and water quality. Human health issues are generally focussed at a regional scale (eg. AMAP, EAS/RCU); consequently there is need for the development of a greater coverage to provide a comprehensive global view. Significant potential exists for obtaining contributions from relevant organisations such as WHO. Information on physical data, such as nutrients and water quality are well represented globally by IOC and GESAMP, and more regionally by bodies such as AMAP and EAS/RCU. Again there is a need for a co-ordinated review to determine any information gaps within this coverage or areas requiring improved monitoring procedures.

## V. METHODS

### a) ecosystem approach

22. With the exception of GESAMP and IOI, all of the participating organisations use data collection and analysis methods within an ecosystem approach framework. It is probable that the development of a global assessment of the marine environment would also follow this methodology to best reflect the interconnections between biological, chemical, and physical aspects of the marine environment.

### b) indicators

23. Indicators are used by most organisations to measure a range of changes in biological, physical, and chemical components of marine systems. In general, organisations often independently develop indicator methodologies to meet their own needs. There is a need to develop a system by which these various indicators can be compared and/or combined; this may provide a useful description of the previous, current and future state of the global marine environment. Full transparency in the development of indicators, and for the data behind them, will add to their credibility. Where regional bodies have developed specific indicators for their areas, it would be of value towards developing a global overview for them to collaborate and share details of these indicators with related organisations from other regions.

### c) biogeographical approach

24. Most of the organisations represented operate a biogeographical approach, by which the area under investigation, global or regional, is divided into specific bioregions. There are some variations in the delimitation of biogeographic areas by assessment organisations; this is generally related to the individual organisations, or their members, particular needs. It would be of value in the development of a global assessment process to investigate the use of standardised biogeographic regions, which are acceptable to participating organisations, particularly within the context of current assessment activities. Additionally there is a need to review the

biogeographical methods used by organisations, particularly regionally based, not represented at the Reykjavik meeting.

d) future state scenarios

25. The use of future state scenarios was identified as a method frequently used by participants. The information provided suggests a reasonably wide usage, from global to regional level, and between scientific disciplines. This generally reflects the more widespread use of scenario methods in environmental assessment activities over recent years. Scenario methodology commonly requires a holistic approach, considering all available environmental and socio-economic parameters, to provide accurate estimates of future events. It would appear that this methodology might be beneficial in the development of a collaborative global marine assessment process; this method is already in use by similar assessment processes such as GEO. One of the benefits of scenario development is that a narrative may be constructed which outlines predicted changes and is readily available to a wide audience, including policy-makers.

e) causal-chain analysis; pressure, state, response

26. Few organisations represented in Reykjavik operate either causal chain analysis or pressure-state-response methods. There is a need to investigate the wider application of these methods by participating organisations. For instance, an increased use of causal chain analysis methods may assist a global assessment by linking and identifying specific socio-economic factors to the health of the marine environment. The use of pressure-state-response methods would assist a global assessment in suggesting remedial actions for implementation by policy-makers.

## VI. OUTPUTS OF ASSESSMENTS

27. The majority of organisations produce a broad range of outputs from their assessment activities. Nearly all produce both scientific reports and summaries and it seems probable that a number of these reports will be targeted at the same, or at a very similar, audience. While a number of organisations already collaborate closely in their

work (eg AMAP and ICES), there is a general need to build more open and constructive relationships between institutions. With improved collaborative links in place there is a considerable potential to prevent duplication of efforts, and to increase the value of scientific outputs for governments and other target audiences.

28. The matrix indicates that many of the participating organisations produce educative or public awareness material. This information is generally focussed at user groups in the scale in which the organisation operates, regional or global. As mentioned, above under the heading 'User Groups', there is some potential for co-ordinating, and comparing, this information in a single resource base.

## VII. DATA QUALITY ASSURANCE

29. Most of the organisations represented have a long term, peer-review process in position for data-quality assurance. In general, standardised internal methods are used to review data. Several of the organisations operate a non-peer review process though which data are examined by an independent scientific source. There is a need to establish a formalised data review course as part of a global marine assessment process.

## VIII. FUNDING

30. A general guide to funding sources for represented organisations is presented in table 2. The majority of organisations receive long-term funding from member states/parties, governments and international agencies (such as UNEP). While strategic funding mechanisms have been developed by donor agencies, it seems probable that there will be some competition between organisations for these funding resources. Increased cooperation and collaboration between organisations would allow better use of limited funds.

31. Several organisations depend partly on private sources for their income. The general uncertainty of long-term support from these resources suggests that methods to ensure their sustained contribution to a global assessment process, possibly through a specific funding mechanism, should be investigated.

## IX. PARTNERSHIPS

32. A broad range of partnerships has been developed by represented organisations. Key partners are presented in table 2. With the inclusion of further regional bodies in the global assessment process, such as all UNEP Regional Sea Units, a more globally representative collection of potential partners is expected to develop.

## X. GEOGRAPHICAL COVERAGE

33. The matrix indicates that geographic coverage depends largely on the scale at which the represented organisations operate. Many of the organisations attending the Reykjavik meeting provide a global coverage within their assessment activities; examples include FAO, IOC and UNEP-WCMC. Others produce information more specifically focussed at the regional level (eg. ICES, AMAP, EAS/RCU). In general the geographic coverage demonstrated may provide a firm base for developing a global marine assessment process. There is a need to encourage the involvement of additional expert regional bodies, for those areas not represented at the Reykjavik meeting, within a global marine assessment process. This may be developed through the UNEP Regional Seas Programme. It seems likely that there is some overlap in assessment activities between global and regional bodies. Where possible, globally orientated organisations should be encouraged to work closely with the relevant regional bodies.

## XI. CONCLUDING REMARKS

34. The above review represents an initial documentation and comparison of the assessment activities for a number of organisations concerned with the marine environment. The material provided by participants largely followed the useful guidelines developed by Working Group 1 during the Reykjavik meeting. However these guidelines did not indicate a need for participants to prioritise organisational activities when completing the matrix, and without this qualitative material, the

analysis made of the available data coverage for developing a global assessment process is relatively subjective.

35. From the material submitted it appears that both overlap in efforts and unnecessary competition occurs in the areas of data collection and user groups' targeted. There is a general need for improved collaboration between organisations to effectively use the limited funding resources available. It is anticipated that the further development of a highly participatory global assessment process will contribute to strengthening collaborative links between organisations.

36. With regards to the data sources currently used by participants, few appear to make substantial use of the large quantity of pertinent available from commercial organisations and NGO's. While there is an evident need for caution when using these data, it would be useful for a participatory global process to investigate the suitability of incorporating material from reliable commercial bodies NGO's.

37. From the information received it is difficult to gauge the true global data coverage for the marine environment. There is a need to further develop the comparative exercise during the initial stages of the assessment process to include information from national, regional, and international bodies and organisations, which may provide a better indication of data gaps. Also, as mentioned above, there is a need to distinguish the priority activities for organisations.

Table 1. Comparative matrix of activities for organisations represented at the Reykjavik meeting

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
<b>USERS</b>									
<b>Governments</b>	Y	Y (1)	Y	Y	Y	Y	Y	Y (2)	Y
<b>Science</b>	Y	Y	Y	Y/N	Y	Y	Y	Y (1)	Y
<b>Independent</b>	Y		N	Y/N	Y		?	Y (2)	Y
<b>Commercial-corporate</b>	Y		Y	Y/N	Y	Y	Y	Y (2)	
<b>Public information</b>	Y		Y	Y	Y	Y	Y (1)	Y (2)	Y
<b>Educational</b>	Y		Y	Y	Y		Y (1)	Y (2)	Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
Governance	?	Y (2)	Y	Y				Y (2)	Y
Intergovernmental orgs.	Y	Y (2)	Y	Y/N	Y	Y	Y	Y (2)	Y
<b>DATA PROVIDERS-SOURCE</b>									
Gov't agencies	Y	Y (1)	Y	Y/N	Y	Y		Y	Y
Academia	Y		Y	Y/N	Y	Y	Y	Y	Y
Commercial (Incl. industries)	Y		N	Y/N	Y	Y		Y	
NGOs	Y		Y	Y	Y		Y	Y	Y
Individuals	Y		N	Y	Y			Y	Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
<b>Intergovernmental Orgs.</b>	Y	Y	Y	Y	Y	Y		Y	Y
<b>DATA TYPES</b>									
<b>Socio-economic</b>	Y (ACIA)	Y	Y	Y		N	Y	N	Y
<b>Living marine resources</b>	Y	Y (1)	Y (coral)	Y	Y	Y	Y	Y	Y
<b>Pollution</b>	Y		Y (basin)	Y	Y (Oil)	Y		N	Y
<b>Habitat</b>	Y		N	Y	Y	?	Y	Y	Y
<b>Pathogens</b>	Y		N	Y	Y			N	Y
<b>Biodiversity</b>	Y		Y (limited)	Y	Y		Y	Y	Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
Geographical data	Y		Y (bathymetry)	Y/N	Y	Y		Y	Y
Carbon cycles	Y (ACIA)		Y	N				N	Y
Alien species	Y (ACIA)	Y	Y	Y/N	Y			Y	Y
Human health	Y		Y	Y				N	Y
Physical data	Y		Y	N				N	Y
Ecosystem structure	Y		N	Y	Y			Y	Y
Physical-geographical	Y				Y			N	Y
Non-living resources	Y		N	Y				N	Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
Nutrients	N		Y	N				N	Y
Water quality	Y		N	Y		Y		N	Y
<b>METHODS</b>									
Ecosystem approach	Y	Y	Y	N	Y	Y	Y	Y	Y
Future state scenarios	Y	Y (2)	Y	Y	Y	Y		Y	
Biogeographical approach	Y		Y	N	Y	Y		Y	Y
Pressure-state-response	Y		Y	N				N	Y
Indicators use	Y	Y	Y	Y	Y		Y	Maybe	Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
Causal chain analysis	Y		Y	Y				N	Y
<b>OUTPUTS OF ASSESSMENTS</b>									
Scientific reports	Y (1)	Y	Y	N	Y	Y	Y	Y	Y
Scientific summary	Y (1)		Y	N	Y	Y		Y	Y
Policy report	Y (1)	Y	Y	Y/N		Y		N	Y
Education material	Y		Y	Y	Y		Y	Y	Y
Public awareness	Y		Y	Y	Y		Y	Y	Y
<b>DATA QUALITY ASSURANCE</b>									
Peer-review	Y	Y	Y	Y/N	Y	Y		Y	Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
Non-peer review	Y		Y	Y	Y	Y			Y
Long term	Y	Y	Y	Y	Y	Y	Y	Y	Y
Short term	Y		Y	Y				Y	Y
Standard	Y	Y	Y	N	Y	Y		Y	Y
Non-standard	Y			Y					
Others			Meta-data				Internal		
<b>GEOGRAPHICAL COVERAGE</b>									
National	Y			Y					Y

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCU
Global	N	Y		Y/N	Y		Y	Y	
Regional	Y (All area north of 60 N)			Y		Y (Atlantic North of 35°N)			Y
Ecosystem	Y			N			Y		Y
Site specific	Y			Y					Y

Key: Y = Yes (number in parenthesis indicates degree of importance, 1 being most important); N = No. <sup>1</sup> IOI, ICES, information presented for this organisation is largely based on material submitted during the Reykjavik

Table 2. Funding sources and major partnerships for organisations represented at the Reykjavik meeting

	AMAP & ACIA	FAO	IOC <sup>1</sup>	IOI	UNEP-WCMC	ICES <sup>1</sup>	Reef Check	Marine Census Institute	EAS/RCI
<b>FUNDING</b>									
Source	Governments, institutions, NGO's.	Governments	Governments, trust fund	Fund, grants	Contribution from UNEP of 10% of costs. Remainder from individual project funds	80% from member countries	Private, project based, members donations	Wide variety of sources. Private, public, intergovernmental, national to local depending on nature of project.	GEF, donor countries, funding agencies
Short term	Yes, mostly		Biannual, mid-term	N/Y	Yes for specific projects	Y	Y	10 year funding lifetime for the census.	GEF, donor countries, funding agencies
Long term	Yes, some	Y		Y	Y	Y		Ocean Biogeographical Information System	UNEP Environment Fund, East Asian Seas Trust Fund
<b>PARTNERSHIPS (6 MOST RELEVANT)</b>									
	UNEP	Regional fishery bodies and agreements	IGOS	Host universities	UNEP	FAO	ICRI	Broad mix of institutions and scientists (academic, government, industry/commercial, private foundations)	Network Aquaculture Centres Asia and Pacific (NACA)
	UN-ECE		JCOMM	OSRF Foundation	WCPA Marine	IOC	GCRMN		Wetland International

	<b>IAEA</b>		<b>All UN Agencies</b>	<b>Local communities</b>	<b>Marine Aquarium Council, and commercial businesses</b>	<b>AMAP</b>	<b>UNEP</b>		<b>START of Southeast Asia</b>
	<b>ICES</b>		<b>WCRP</b>	<b>Gvt of Malta</b>	<b>Oil companies, and IPIECA</b>	<b>OSPAR</b>	<b>Regional Seas</b>		<b>South East Asia Policy and Law (SEAPOI)</b>
	<b>WMO</b>		<b>IGBP</b>	<b>UN Seabed Authority</b>	<b>ICRAN</b>	<b>GEF</b>			<b>Reg. Office Asia and Pacific UNEP</b>
	<b>OSPARCOM</b>		<b>IHDP</b>	<b>TRAINSEA Coast</b>	<b>NASA</b>	<b>GIWA</b>			<b>Global Plan of Action for land-based activities</b>

ANNEX XXVI      CRITERIA TO DETERMINE THE SUITABILITY OF AN EXISTING ASSESSMENT MECHANISM OR PROGRAMME

Outline of key criteria:

Cost effectiveness

- The mechanism should demonstrate value for money provided by governments
- There should be minimum redundancy of effort.
- The mechanism processes should be fully budgeted, including, where possible, an assessment of resources used outside of the conventional budgeting structures.
- The mechanism should be financially feasible.
- A return on financial investment should be indicated.
- The mechanism should show financial reality, be affordable.

Credibility

- The mechanism must show complete transparency.
- The ability to undertake a comprehensive assessment must be shown.
- It is highly important that the mechanism is scientifically sound, especially in regard to defining uncertainties and long-term trends.
- The mechanism must be objective, and not captive of a single school of thought or agency.
- It should demonstrate inclusiveness for all credible scientific data.
- The mechanism should be inter-disciplinary.

Sustainability

- The mechanism must receive long-term support, gaining institutional commitment by the use of Memorandums of Understanding.
- Multi-institutional support by governments, NGO's etc should be encouraged to increase the potential for long-term commitment.
- The mechanism must receive broad support.

- A sound financial basis should be developed for the mechanism. This could build on the experiences of similar programmes.

#### Ability to address policy issues

- The mechanism should demonstrate flexibility for delivery.
- It must show responsiveness to current issues.
- Production of information by the mechanism should be timely.
- The mechanism processes should be transparent to policy-makers
- Government involvement in the mechanism and its process should be encouraged.
- A participatory approach must be adopted (multi-stakeholder).
- It is important that the mechanism is multidisciplinary. This approach has been of great value to the IPCC in addressing policy issues.
- The ability to address policy issues should be integrated with other criteria.

ANNEX XXVII      A DRAFT LIST OF AGENCIES INVITED TO REVIEW THE REPORT ON THE FEASIBILITY STUDY FOR ESTABLISHING A REGULAR PROCESS FOR THE ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT.

\*United Nations System

- Intergovernmental Oceanographic Commission (IOC) of UNESCO
- International Maritime Organization (IMO)
- United Nations Division of Ocean Affairs and Law of the Sea (UN/DOALOS)
- Food and Agriculture Organization (FAO) of the United Nations
- United Nations Environment Programme (UNEP), including all Regional Seas Conventions and Action Plans
- World Meteorological Organization (WMO)
- United Nations Educational, Scientific, and Cultural Organization (UNESCO)
- World Health Organization (WHO)
- International Atomic Energy Agency (IAEA)
- United Nations Industrial Development Organization (UNIDO)
- United Nations Development Programme (UNDP)
- United Nations Economic and Social Council (ECOSOC)
- International Bank for Reconstruction and Development (IBRD)
- International Monetary Fund (IMF)
- World Trade Organization (WTO)
- World Conservation Monitoring Centre (UNEP-WCMC)

\*Intergovernmental and non-governmental Organizations

- International Council of Scientific Unions (ICSU)
- Arctic Monitoring and Assessment Programme (AMAP)
- International Council for the Exploration of the Sea (ICES)
- World Conservation Union (IUCN)
- The programme for the Protection of the Arctic Marine Environment (PAME)
- World Wide Fund for Nature (WWF)

- International Whaling commission (IWC)
- International Ocean Institute (IOI)
- Advisory Committee on Protection of the Sea (ACOPS)
- European Commission (EC)
- North Atlantic Treaty Organization (NATO)
- International Hydrographic Organization (IHO)
- Hellenic Marine Environment Protection Association (HELMPEPA)
- Census of Marine Life Secretariat
- Reef Check Foundation

#### \*Interactions and Coordination

- Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)
- Inter-Secretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO)
- Planning and Coordinating Committee on the Marine Mammal Action Plan Agenda 21
- United Nations Commission for Sustainable Development (CSD)
- Inter-Agency Committee for Sustainable Development (IACSD)
- ACC Subcommittee on Oceans and Coastal Areas (ACC-SOCA)

#### Others

- UNCLOS
- Appropriate Environmental Conventions
- International environmental observing and assessment programmes (GOOS, GIWA, WWAP, MA, IPCC, including GPA/LBA)
- New Initiative on “Worldwide marine census” – Sydney Feb. 2001
- Appropriate NGOs
- Specialized thematic centres (e.g. NOAA)
- Appropriate regional collaborating centres

*\*Source: Review of International Programmes Relevant to the Work of the Independent World Commission on the Oceans (prepared for the Independent World Commission on the Oceans). Stjepan Keckes. 1997.*

ANNEX XXVIII

LIST OF ACRONYMS

ACC-SOCA	ACC (Administrative Committee on Coordination) Subcommittee on Oceans and Coastal Areas
ACIA	Arctic Climate Impact Assessment
ACOPS	Advisory Committee on Protection of the Sea
AMAP	Arctic Monitoring and Assessment Programme
CBD	Convention on Biological Diversity
CORDIO	Coral Reef Degradation in the Indian Ocean
CSD	Commission for Sustainable Development
DESA	UN Department of Economic and Social Affairs
DFID	Department for International Development (UK)
EAS/RCU	East Asia Seas Regional Coordinating Unit
ECOSOC	United Nations Economic and Social Council
FAO	Food and Agriculture Organization of the United Nations
GCRMN	Global Coral Reef Monitoring Network
GEF	Global Environmental Facility
GEO	Global Environment Outlook
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GFEM	Global Forum for Environmental Ministers
GIPME	Global Investigation of Pollution in the Marine Environment Programme
GOOS	Global Ocean Observing System
GPA/LBA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
IAEA	International Atomic Energy Agency
ICES	International Council for the Exploration of the Sea
ICRAN	International Coral Reef Action Network

ICRI	International Coral Reef Initiative
IGBP	International Geosphere-Biosphere Programme
IGOS	Integrated Global Observing Strategy
IHDP	International Human Dimensions Programme on Global Environmental Change
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission of UNESCO
IOI	International Ocean Institute
IPCC	Intergovernmental Panel on Climate Change
IPIECA	International Petroleum Industry Environmental Conservation Association
IUCN\SSC	World Conservation Union Species Survival Commission
JCOMM	Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology
MA	Millennium Ecosystem Assessment
NACA	Network of Aquaculture Centres Asia and Pacific
NGOs	Non Governmental Organisations
NOAA	National Oceanic and Atmospheric Administration of USA
NORAD	North American Aerospace Defense Command
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic ("OSPAR Convention")
OPSPARCOM	OSPAR Commission
OSRF	Ocean Science and Research Foundation
PAME	The programme for the Protection of the Arctic Marine Environment
POPs	Persistent Organic Pollutants
RCU (EAS/RCU)	Regional Coordinating Unit (of East Asia Seas)
SACEP	South Asia Cooperative Environment Programme
SEAPOL	Southeast Asian Programme in Ocean Law, Policy and Management

Sida	Swedish International Development Cooperation Agency
SOCA (ACC-SOCA)	ACC Subcommittee on the Oceans and Coastal Areas
TRAIN-SEA-COAST	A Cooperative Training Programme in the Field of Coastal and Ocean Management
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-DEWA	UNEP- Division of Early Warning and Assessment
UNEP-GIWA	UNEP-Global International Waters Assessment
UNEP-WCMC	UNEP-World Conservation Monitoring Centre
UNEP GC	UNEP Governing Council
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WCPA	World Commission on Protected Area
WCRP	World Climate Research Programme
WHO	World Health Organization
WMO	World Meteorological Organisation
WSSD	World Summit on Sustainable Development