

**CONVENTION ON WETLANDS (Ramsar, Iran, 1971)**

**11<sup>th</sup> Meeting of the Scientific and Technical Review Panel  
Gland, Switzerland, 8-11 April 2003**

**DOC. STRP11-17**

Agenda item 6.3 i)

**Background materials concerning environmental and strategic  
impact assessment**

1. Attached to this note is COP8 Resolution VIII.9 on *'Guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment'* adopted by the Convention on Biological Diversity (CBD), and their relevance to the Ramsar Convention.
2. This provides background to the tasks expected to be undertaken by the Panel for 2003-2005 on this issue, if a lead organization or organizations are able to take on this work.
3. The STRP is requested to familiarize itself with the contents of this material, as the basis for preparing its Work Plan activities on these matters.

**"Wetlands: water, life, and culture"  
8th Meeting of the Conference of the Contracting Parties  
to the Convention on Wetlands (Ramsar, Iran, 1971)  
Valencia, Spain, 18-26 November 2002**

## **Resolution VIII.9**

### **‘Guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment’ adopted by the Convention on Biological Diversity (CBD), and their relevance to the Ramsar Convention**

1. WELCOMING the adoption by COP6 of the Convention on Biological Diversity (CBD) of the *Guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment* and *Recommendations for the conduct of cultural, environmental and social impact assessment regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities*;
2. RECALLING Recommendation 6.2, in which the Contracting Parties urged that environmental considerations for wetlands be integrated into planning decisions in a clear and publicly transparent manner, and in which they requested the Convention’s Scientific and Technical Review Panel (STRP) to examine existing environmental impact assessment (EIA) guidelines relevant to wetlands and, if necessary, arrange for the drafting of Ramsar guidelines, as an aid to the wise use of wetlands;
3. FURTHER RECALLING Resolution VII.16, which “calls upon Contracting Parties to ensure that any projects, plans, programmes and policies with the potential to alter the ecological character of wetlands on the Ramsar List or impact negatively on other wetlands in their territory, are subjected to rigorous impact assessment procedures and to formalise such procedures under policy, legal, institutional and organizational arrangements”; and which requested “the Scientific and Technical Review Panel and the Ramsar Bureau to work in cooperation with their counterparts from the CBD and other relevant conventions and expert organizations, to review existing guidelines and available information on environmental impact assessment and economic valuation of wetlands”, and indicated that this could be reported as an Internet-based resource kit on the use of these tools for identifying opportunities to apply the wise use principle;
4. AWARE that the Joint Work Plan 2000-2001 of the CBD and Ramsar encouraged close cooperation in taking forward their respective programmes on impact assessment and minimizing adverse impacts, in consultation with IUCN -The World Conservation Union, the International Association for Impact Assessment (IAIA), and others;

5. ALSO AWARE that CBD Decision V/18 requested the preparation of further guidelines for incorporating biodiversity-related issues into EIA legislation and/or processes and in strategic environmental assessment, and referred to collaboration with the STRP on matters of impact assessment;
6. ACKNOWLEDGING the adoption by COP7 of the Convention on Migratory Species of Resolution 7.10 on Impact Assessment on Migratory Species which, *inter alia*, requests the CMS Scientific Council to cooperate with the Ramsar STRP in reviewing and identifying gaps in relevant guidance;
7. WELCOMING the signing in June 2001 of a Memorandum of Understanding between the Ramsar Bureau and the IAIA;
8. EMPHASIZING the importance of impact assessment in key processes of the Ramsar Convention, including water allocations and management, management planning, and cases of boundary change and compensation for sites on the List of Wetlands of International Importance, and NOTING that the additional guidance on these matters adopted by this meeting of the Conference of the Parties refers to the application of impact assessments, and that it stresses the importance of the full involvement of local communities and indigenous peoples in an open and transparent manner; and
9. RECOGNIZING the role of impact assessment in wetland restoration and rehabilitation, including the identification of possibilities for mitigation for lost wetlands;

#### THE CONFERENCE OF THE CONTRACTING PARTIES

10. URGES Contracting Parties to make use, as appropriate, of the *Guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment*, as adopted by Decision VI/7 of CBD COP6, with the assistance of the guidance prepared by the STRP and imbedded in the text of the CBD Guidelines, as shown in the annex to this Resolution; and to encourage full participation of local communities and indigenous peoples in impact assessments, in line with these guidelines, the *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands* (Resolution VII.8), and the *New Guidelines for management planning for Ramsar sites and other wetlands* (Resolution VIII.14);
11. FURTHER URGES Contracting Parties to make use of the tools and information on impact assessment compiled by IUCN in their Biodiversity Economics Web site, <http://www.biodiversityeconomics.org/assessment/ramsar-503-01.htm>, created in response to Resolution VII.16 in order to assist in their practical application of good practice in impact assessment relevant to wetlands;
12. REQUESTS Contracting Parties to provide feedback to the Ramsar Bureau on the extent to which materials available on the IUCN Biodiversity Economics Web site are useful for their needs, and in light of this to indicate more precisely the nature of their needs for further information, advice and guidance on impact assessment relevant to wetlands;
13. URGES Contracting Parties and others to provide relevant materials to the Ramsar Bureau, including case studies indicating lessons learned, guidelines, sources of advice, and

other relevant materials on impact assessment relevant to wetlands for incorporation into the IUCN Biodiversity Economics Web site;

14. REQUESTS the Scientific and Technical Review Panel and the Ramsar Bureau to prepare a synthesis of lessons learned from those case studies submitted, including indications of linkages with existing Ramsar guidance on other topics where relevant, to prepare a report for COP9, and to provide expert assistance when appropriate;
15. ALSO REQUESTS the STRP, in collaboration with IAIA, to continue to identify wetland-related elements of existing guidelines on impact assessment, to identify important gaps where such guidance is failing fully to meet the needs of Contracting Parties, and to investigate possible ways of filling such gaps, taking into account the *Recommendations for the conduct of cultural, environmental and social impact assessment regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities* adopted by CBD's COP6;
16. FURTHER REQUESTS the STRP, with the assistance of the Ramsar Bureau, to conduct a review, as a supplement to that presented in Technical Session A of Ramsar COP6 in 1996, of references to impact assessment in Ramsar COP decisions, guidelines and other Ramsar publications, and in particular to identify and seek to correct if necessary any inconsistencies of approach, and to make the results of such review available as an updated index of references to impact assessment in Ramsar materials;
17. URGES Contracting Parties to establish contact with the relevant national contact points from within the networks of the IAIA with a view to identifying sources of expertise and advice for assisting with wetland-related impact assessment;
18. REQUESTS the STRP to prepare advice for Contracting Parties on applying strategic environmental assessment in the context of the Convention's *Guidelines on reviewing laws and institutions to promote the conservation and wise use of wetlands* (Ramsar Handbook 3) and *Guidelines for developing and implementing National Wetland Policies* (Ramsar Handbook 2); and
19. RECOMMENDS that Contracting Parties and impact assessment practitioners seek to use impact assessments, particularly where they are related to mitigation projects, as opportunities to stimulate the adoption of, and to contribute to, strategically-determined targets for wetland conservation, management, enhancement, rehabilitation and restoration.

[intentionally blank]

## Annex

The following guidelines were prepared by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biological Diversity (CBD) and adopted (Decision VI/7) by CBD's Conference of the Contracting Parties at its 6<sup>th</sup> meeting (Den Haag, Netherlands, April 2002). The CBD guidelines were reviewed by Ramsar's Scientific and Technical Review Panel (STRP), which recommended that they are fully appropriate for application for impact assessment concerning wetlands in the Ramsar context.

The STRP has prepared supplementary guidance to assist Ramsar Parties in their application, as appropriate, of the CBD Guidelines to impact assessment on wetlands. This supplementary guidance is provided as boxed italic text in the relevant parts of the CBD guidelines.

### **CBD Guidelines for incorporating biodiversity related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment**

*Ramsar: For the purpose of the use of these Guidelines in a Ramsar Convention context, references to "biodiversity" as the scope of interest covered, or of the type of expertise engaged, can be read as applying equally to the conservation and wise use of wetlands, including limnology and hydrology, addressed by the Ramsar Convention. In applying the definitions given in paragraph 1 below, particular emphasis should be given to analysis of alternatives and inclusion of decision-making in the impact assessment process.*

1. For the purpose of these guidelines, the following definitions are used for environmental impact assessment and strategic environmental assessment:
  - (a) Environmental impact assessment is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. Although legislation and practice vary around the world, the fundamental components of an environmental impact assessment would necessarily involve the following stages:
    - i) Screening to determine which projects or developments require a full or partial impact assessment study;
    - ii) Scoping to identify which potential impacts are relevant to assess, and to derive terms of reference for the impact assessment;
    - iii) Impact assessment to predict and identify the likely environmental impacts of a proposed project or development taking into account inter-related consequences of the project proposal, and the socio-economic impacts.;
    - iv) Identifying mitigation measures (including not proceeding with the development, finding alternative designs or sites which avoid the impacts, incorporating safeguards in the design of the project, or providing compensation for adverse impacts);
    - v) Deciding whether to approve the project or not; and
    - vi) Monitoring and evaluating the development activities, predicted impacts and proposed mitigation measures to ensure that unpredicted impacts or failed mitigation measures are identified and addressed in a timely fashion.

- (b) Strategic environmental assessment is the formalized, systematic and comprehensive process of identifying and evaluating the environmental consequences of proposed policies, plans or programmes to ensure that they are fully included and appropriately addressed at the earliest possible stage of decision-making on a par with economic and social considerations.<sup>1/</sup> Strategic environmental assessment, by its nature, covers a wider range of activities or a wider area and often over a longer time span than the environmental impact assessment of projects. Strategic environmental assessment might be applied to an entire sector, (such as a national policy on energy for example), or to a geographical area, (for example in the context of a regional development scheme). The basic steps of strategic environmental assessment are similar to the steps in environmental impact assessment procedures<sup>2/</sup> but the scope differs. Strategic environmental assessment does not replace or reduce the need for project-level environmental impact assessment, but it can help to streamline the incorporation of environmental concerns (including biodiversity) into the decision-making process, often making project-level environmental impact assessment a more effective process.

### 1. Purpose and approach

2. The objective of these draft guidelines is to provide general advice on incorporation of biodiversity considerations into new or existing environmental impact assessment procedures, noting that existing procedures take biodiversity into consideration in different ways. A draft framework has been developed to address the screening and scoping phases of environmental impact assessment. Further development of the framework will be required to address the incorporation of biodiversity into subsequent stages of the environmental impact assessment process, including impact assessment, mitigation, evaluation and monitoring, and into strategic environmental assessment.
3. Individual countries may redefine the steps in the procedure to their needs and requirements as befits their institutional and legal setting. The environmental impact assessment process, in order to be effective, should be fully incorporated into existing legal planning processes and not be seen as an “add-on” process.
4. As a prerequisite, the definition of the term “environment” in national legislation and procedures should fully incorporate the concept of biological diversity as defined by the Convention on Biological Diversity, such that plants, animals and micro-organisms are considered at the genetic, species/community and ecosystem/habitat levels, and also in terms of ecosystem structure and function.
5. With regard to biodiversity considerations, the ecosystem approach, as described in decision V/6 of the Conference of the Parties and taking into account any further elaboration of the concept within the framework of the Convention, is an appropriate framework for the assessment of planned action and policies. In accordance with the approach, the proper temporal and spatial scales of the problems should be determined as well as the functions of biodiversity and their tangible and intangible values for humans

---

<sup>1/</sup> Based on Sadler and Verheem, 1996

<sup>2/</sup> Saddler and Verheem, 1996; South Africa, 2000; Nierynck, 1997 ; Nooteboom, 1999.

that could be affected by the proposed project or policy, the type of adaptive mitigation measures and the need for the participation of stakeholders in decision-making.

*Ramsar: In a Ramsar context, the appropriate spatial scale may sometimes be wider than the ecosystem. In particular, the river basin (water catchment) is an important spatial scale at which to address aspects of wetland-related impacts. Also, where impacts on particularly important species values, such as migratory fish or birds, are at stake, assessment at the scale of the migratory range (flyway) of the relevant populations will be very relevant. This may involve a chain of ecosystems (perhaps disjunct ones), and therefore may need to take a broader perspective than would normally be the case under the ecosystem approach.*

6. Environmental impact assessment procedures should refer to other relevant national, regional and international legislation, regulations, guidelines and other policy documents such as the national biodiversity strategy and action plan documents, the Convention on Biological Diversity and biodiversity-related conventions and agreements including, in particular, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals and the related agreements, the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, the Convention on Environmental Impact Assessment in a Transboundary Context; the United Nations Convention on the Law of the Sea; the European Union directives on environmental impact assessment, and the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources.

*Ramsar: At the national level, reference should also be made to the national wetland policy (see Resolution VII.6) where this exists.*

7. Consideration should be given to improving integration of National Biodiversity Strategy and Action Plans (NBSAP) and National Development Strategies using SEA as a tool for such integration to promote the establishment of clear conservation targets through the NBSAP process and the use of those targets for the screening and scoping targets of EIA and for developing mitigation measures.

## **2. Biodiversity issues at different stages of environmental impact assessment**

### **(a) Screening**

8. Screening is used to determine which proposals should be subject to impact assessment, to exclude those unlikely to have harmful environmental impacts and to indicate the level of environmental appraisal required. If screening criteria do not include biodiversity measures, there is a risk that proposals with potentially significant impacts on biodiversity will be screened out.
9. Since a legal requirement for environmental impact assessment on environmental grounds does not guarantee that biological diversity will be taken into account, consideration should be given to incorporating biodiversity criteria into existing or new screening criteria..
10. Types of existing screening mechanisms include:

- (a) Positive lists identifying projects requiring environmental impact assessment. A few countries use (or have used) negative lists, identifying those projects not subject to environmental impact assessment. These lists should be reassessed to evaluate their inclusion of biodiversity aspects;
- (b) Expert judgement (with or without a limited study, sometimes referred to as “initial environmental examination” or “preliminary environmental assessment”); and
- (c) A combination of a positive list and expert judgement; for a number of activities an environmental impact assessment is more appropriate, for others an expert judgement may be desirable to determine the need for an environmental impact assessment.

11. The result of screening can be that:

- (a) An environmental impact assessment is required,
- (b)
  - (i) A limited environmental study is sufficient because only limited environmental impacts are expected; the screening decision is based on a set of criteria with quantitative norms or threshold values;
  - (ii) There is still uncertainty whether an environmental impact assessment is required and an initial environmental examination has to be conducted to determine whether a project requires environmental impact assessment or not, and
- (c) The project does not require an environmental impact assessment.

12. How to use these guidelines?

- (a) Countries with a positive list identifying projects requiring environmental impact assessment should use, as appropriate, annexes I and II below for guidance on reconsidering their existing positive list with respect to biological diversity considerations. By assessing the possible impacts of categories of activities on biological diversity the existing list can be adjusted, if required;
- (b) In countries where screening is based on expert judgement, experience has shown that professionals make screening decisions, often using “mini environmental impact assessment” to come to this decision. These guidelines, its annexes and other guidelines such as the information document submitted by the International Association for Impact Assessment (IAIA) help provide these professionals with the means to come to a motivated, transparent and consistent screening decision. Furthermore, the expert teams should include professionals with biodiversity expertise;
- (c) In countries where screening is based on a combination of a positive list and expert judgement, country-specific thematic or sector guidelines, often including quantitative norms or thresholds, facilitate the responsible people to make a well-

founded and defensible decision. For biodiversity, thematic guidelines could be developed, <sup>3/</sup> sector guidelines need to be reviewed on biodiversity considerations.

### The screening criteria

13. Screening criteria may relate to: (i) categories of activities, including thresholds referring to magnitude of the activity and/or size of the intervention area, duration and frequency or to (ii) a magnitude of biophysical change that is caused by the activity, or to (iii) maps indicating areas important for biodiversity with special legal status or of high biodiversity value and endemism, species patterns, breeding sites, or areas with species of high genetic value.

*Ramsar: Projects with possible implications for a listed Ramsar site are an example of the third type of screening criterion given above. This should extend to sites selected according to any of the Ramsar criteria, and not just those relating to the biodiversity importance of the wetland.*

14. Determining norms or threshold values is partly a technical and partly a political process of which the outcome may vary for countries and for ecosystems. The technical process should at least provide a description of:
- (a) Categories of activities that may affect biological diversity and the direct and indirect biophysical changes likely to result from these activities, taking into account characteristics like: type or nature of activity, magnitude, extent/location, timing, duration, reversibility/irreversibility, likelihood, and significance; possibility of interaction with other activities or impacts;
  - (b) Area of influence. Knowing the biophysical changes that result from an activity, the expected area of influence of these changes can be modelled or predicted, including the probability of off-site effects;
  - (c) Biodiversity maps indicating ecosystems and/or land-use types and their use and non-use values (showing the use and non-use values of biodiversity).

*Ramsar: In addressing the likelihood of effects and their relevance and significance for Ramsar-related values, reference should be made to Ramsar guidance on ecological character and on risk assessment (see e.g. Resolution VII.10).*

15. The process of developing a national biodiversity strategy and action plan can generate valuable information such as conservation priorities and targets which can guide further development of environmental impact assessment screening criteria<sup>4/</sup> Annex II below presents a generic list of criteria, intended to be a practical reference for further in-country development of criteria.

*Ramsar: This also applies to the process for developing a national wetland policy (see Resolution VII.6).*

<sup>3/</sup> Some concrete targets are proposed in the note by the Executive Secretary on a proposal for a global strategy for plant conservation (UNEP/CBD/SBSTTA/7/10).

<sup>4/</sup> Summarized in the IAIA information document by Treweek, 2001, box 2.

### Pertinent questions for screening

16. Considering the objectives of the Convention on Biological Diversity, i.e., in particular, conservation, sustainable use and equitable sharing of benefits derived from biological diversity, fundamental questions need to be answered in an environment impact assessment study:
- (a) Does the intended activity affect the physical environment in such a manner or cause such biological losses that it influences the chance of extinction of cultivars, varieties, populations of species, or the chance of loss of habitats or ecosystems?
  - (b) Does the intended activity surpass the maximal sustainable yield, the carrying capacity of a habitat/ecosystem or the maximum and minimum <sup>5/</sup> allowable disturbance level of a resource, population, or ecosystem?
  - (c) Does the intended activity result in changes to the access to and rights over biological resources?
17. To facilitate the development of criteria, the questions above have been reformulated for the three levels of diversity, reproduced in annex I below.

*Ramsar: The objectives of the Ramsar Convention should be considered in the same way, i.e. promoting the conservation of wetlands, promoting the wise use of wetlands, and the implied objective of maintaining the ecological character of wetlands, as defined by Resolution VII.10. Questions (a) and (b) above remain relevant, but two additional questions should also be asked concerning wetlands:*

*(d) Does the intended activity cause an ~~impairment~~ or imbalance in any biological, physical or chemical components of the wetland ecosystem, or in their interactions, which maintain the wetland and its products, functions and attributes? (i.e. does it cause a change in ecological character as defined under the Convention), and*

*(e) Does the intended activity constitute a use which would be “unwise” in the sense of conflicting with the tenets of “wise use of wetlands” as defined under the Convention in e.g. Recommendation 3.3, Recommendation 4.10 and Resolution V.6?*

### (b) Scoping

18. Scoping narrows the focus of the broad issues found to be significant during the screening stage. It is used to derive terms of reference (sometimes referred to as guidelines) for environmental impact assessment. Scoping also enables the competent authority (or environmental impact assessment professionals in countries where scoping is voluntary):
- (a) To guide study teams on significant issues and alternatives to be assessed, clarify how they should be examined (methods of prediction and analysis, depth of analysis), and according to which guidelines and criteria;
  - (b) To provide an opportunity for stakeholders to have their interests taken into account in the environmental impact assessment;

---

<sup>5/</sup> For example, fire can be too frequent and too infrequent to sustain the integrity/health of a given ecosystem.

- (c) To ensure that the resulting environmental impact statement is useful to the decision maker and is understandable to the public.
19. During the scoping phase promising alternatives can be identified for in-depth consideration during the environmental impact assessment study.
20. The following sequence provides an example of iterative mechanism for scoping, impact assessment and consideration of mitigation measures, which should be carried out with the help of existing information and the available knowledge among stakeholders:
- (a) Describe the type of project, its nature, magnitude, location, timing, duration and frequency;
  - (b) Describe the expected biophysical changes in soil, water, air, flora and fauna;
  - (c) Describe biophysical changes that result from social change processes as a result of the proposed project;
  - (d) Determine the spatial and temporal scale of influence of each biophysical change;
  - (e) Describe ecosystems and land-use types potentially influenced by the biophysical changes identified;
  - (f) Determine for each ecosystem or land-use type if the biophysical changes affect one of the following components of biological diversity: the composition (what is there), the temporal/spatial structure (how are biodiversity components organised in time and space), or key processes (how is biodiversity created and/or maintained);
  - (g) Identify in consultation with stakeholders the current and potential use-functions, non-use functions and other longer-term less tangible benefits of biological diversity provided by the ecosystems or land-use types and determine the values these functions represent for society (see annex III for an indicative list of functions);
  - (h) Determine which of these functions will be significantly affected by the proposed project, taking into account mitigation measures;
  - (i) For each alternative, define mitigation and/or compensation measures to avoid, minimize or compensate the expected impacts;
  - (j) With the help of the biodiversity checklist on scoping (see annex IV below), determine which issues will provide information relevant to decision making and can realistically be studied;
  - (k) Provide information on the severity of impacts, i.e. apply weights to the expected impacts for the alternatives considered. Weigh expected impacts to a reference situation (baseline), which may be the existing situation, a historical situation, or an external reference situation.

*Ramsar: In the case of Ramsar sites, the “baseline” should relate to the site’s ecological character, as distinct from the attributes which cause it to qualify as internationally important. Hence the baseline should be the target condition (ecological character) described in management plan objectives. It will therefore not necessarily equate to the condition of the site described at the time of listing (or subsequent updating of the Ramsar Information Sheet) unless at such times the site happens to have achieved its optimal (target) condition, or if there is no better baseline available.*

- (l) Identify necessary surveys to gather comprehensive information about the biological diversity in the affected area where appropriate.
21. The expected impacts of the proposed activity, including identified alternatives, should be compared with the selected reference situation and with the autonomous development (what will happen with biodiversity over time if the project is not implemented). There should be awareness that doing nothing may in some cases also have significant effects on biological diversity, sometimes even worse than the impacts of the proposed activity (e.g. projects counteracting degradation processes).
  22. At present, evaluation criteria for biological diversity, especially at ecosystem level, are under-developed and need serious attention when developing in-country mechanisms to incorporate biodiversity in environmental impact assessment.
- (c) Impact analysis and assessment**
23. Environmental impact assessment should be an iterative process of assessing impacts, redesigning alternatives and comparison. The main tasks of impact analysis and assessment are:
    - (a) Refinement of the understanding of the nature of the potential impacts identified during screening and scoping and described in the terms of reference. This includes the identification of indirect and cumulative impacts, and of the likely causes of the impacts (impact analysis and assessment). Identification and description of relevant criteria for decision-making can be an essential element of this period;
    - (b) Review and redesign of alternatives; consideration of mitigation measures; planning of impact management; evaluation of impacts; and comparison of the alternatives; and
    - (c) Reporting of study results in a environmental impact statement.
  24. Assessing impacts usually involves a detailed analysis of their nature, magnitude, extent and effect, and a judgement of their significance, i.e., whether the impacts are acceptable to stakeholders, require mitigation, or are just unacceptable. Biodiversity information available is usually limited and descriptive and cannot be used as a basis for numerical predictions. There is a need to develop or compile biodiversity criteria for impact evaluation and to have measurable standards or objectives against which the significance of individual impacts can be evaluated. The priorities and targets set in the national biodiversity action plan and strategy process can provide guidance for developing these criteria. Tools will need to be developed to deal with uncertainty, including criteria on using risk assessment techniques, precautionary approach and adaptive management.

*Ramsar: In addressing the nature of effects and their relevance and significance for Ramsar-related values, reference should be made to Ramsar guidance on ecological character and on risk assessment (see e.g. Resolution VII.10).*

**(d) Consideration of mitigation measures**

25. If the evaluation process concludes that the impacts are significant, the next stage in the process is to propose mitigation ideally drawn together into an “environmental management plan”. The purpose of mitigation in environmental impact assessment is to look for better ways to implement project activities so that negative impacts of the activities are avoided or reduced to acceptable levels and the environmental benefits are enhanced, and to make sure that the public or individuals do not bear costs which are greater than the benefits which accrue to them. Remedial action can take several forms, i.e. avoidance (or prevention), mitigation (including restoration and rehabilitation of sites), and compensation (often associated with residual impacts after prevention and mitigation).

*Ramsar: In certain circumstances relating to Ramsar sites, when the consequences of impacts on the site include reduction or deletion of the site, the provision of compensation is governed by Article 4.2 of the Convention and the guidelines adopted under Resolution VIII.20 will apply.*

**(e) Reporting: the environmental impact statement (EIS)**

26. The environmental impact statement is designed to assist: (i) the proponent to plan, design and implement the proposal in a way that eliminates or minimizes the negative effect on the biophysical and socio-economic environments and maximizes the benefits to all parties in the most cost effective manner; (ii) the Government or responsible authority to decide whether a proposal should be approved and the terms and conditions that should be applied; and (iii) the public to understand the proposal and its impacts on the community and environment and provide an opportunity for comments on the proposed action for consideration by decision-makers. Some adverse impacts may be wide ranging and have effects beyond the limits of particular habitats/ecosystems or national boundaries. Therefore, environmental management plans and strategies contained in the environmental impact statement should consider regional and transboundary impacts, taking into account the ecosystem approach.

*Ramsar: Concerning transboundary impacts, Ramsar Parties should have regard to Article 5 of the Convention and the Guidelines for international cooperation under the Ramsar Convention on Wetlands (Resolution VII.19).*

**(f) Review**

27. The purpose of review of the environmental impact statement is to ensure that the information for decision-makers is sufficient, focused on the key issues, scientifically and technically accurate, and if the likely impacts are acceptable from an environmental viewpoint and the design complies with relevant standards and policies, or standards of good practice where official standards do not exist. The review should also consider whether all of the relevant impacts of a proposed activity have been identified and adequately addressed in the environmental impact assessment. To this end, biodiversity

specialists should be called upon for the review and information on official standards and/or standards for good practice to be compiled and disseminated.

28. Public involvement, including minority groups, is important in various stages of the process and particularly at this stage. The concerns and comments of all stakeholders are considered and included in the final report presented to decision-makers. The process establishes local ownership of the proposal and promotes a better understanding of relevant issues and concerns.

*Ramsar: For guidance on public involvement, refer to the Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands (Resolution VII.8) and the New Guidelines for management planning for Ramsar sites and other wetlands (Resolution VIII.14).*

29. Review should also guarantee that the information provided in the environmental impact statement is sufficient for a decision maker to determine whether the project is compliant with or contradictory to the objectives of the Convention on Biological Diversity.

*Ramsar: This paragraph should be applied mutatis mutandis to the Ramsar Convention.*

#### **(g) Decision-making**

30. Decision-making takes place throughout the process of environmental impact assessment in an incremental way from the screening and scoping stages to decisions during data-collecting and analysis, and impact prediction to making choices between alternatives and mitigation measures and finally the decision between refusal or authorization of the project. Biodiversity issues should play a part in decision-making throughout. This final decision is essentially a political choice about whether or not the proposal is to proceed, and under what conditions. If rejected, the project can be redesigned and resubmitted. It is desirable that the proponent and the decision-making body are two different entities.
31. The precautionary approach should be applied in decision-making in cases of scientific uncertainty about risk of significant harm to biodiversity. As scientific certainty improves, decisions can be modified accordingly.

#### **(h) Monitoring and environmental auditing**

32. Monitoring and auditing are used to see what actually occurs after project implementation has started. Predicted impacts on biodiversity should be monitored, as should the effectiveness of mitigation measures proposed in the environmental impact assessment. Proper environmental management should ensure that anticipated impacts are maintained within predicted levels, and unanticipated impacts are managed before they become a problem and the expected benefits (or positive developments) are achieved as the project proceeds. The results of monitoring provide information for periodic review and alteration of environmental management plans, and for optimising environmental protection through good practice at all stages of the project. Biodiversity data generated by environmental impact assessment should be made accessible and useable by others and should be linked to biodiversity assessment processes being designed and carried out under the Convention on Biological Diversity.

33. An environmental audit is an independent examination and assessment of a project's (past) performance, is part of the evaluation of the environmental management plan and contributes to the enforcement of EIA approval decisions.

### **3. Incorporation of biodiversity considerations in strategic environmental assessments**

34. The guidelines proposed for the integration of biodiversity in environmental impact assessment are also applicable to strategic environmental assessment, taking into account that for the latter type of assessment, biological diversity concerns should be considered from the early stages of the drafting process, including when developing new legislative and regulatory frameworks (decision V/18, paras. 1(c) and 2 (a)), and at the decision-making and/or environmental planning levels (decision V/18, para. 2 (a)), and that strategic environmental assessments by their nature cover policies and programmes, a wider range of activities over a wider area.
35. Strategic environmental assessment, while not a new process, is not practised as widely as environmental impact assessment. As experience accumulates in countries, it may then be necessary to draw more specific guidelines for the incorporation of biodiversity in the process.

## **4. Ways and means**

### **(a) Capacity-building**

36. Any activity aimed at the incorporation of biodiversity considerations into national environmental impact assessment systems should be accompanied by appropriate capacity development activities. Expertise in taxonomy, <sup>a/</sup> conservation biology, ecology, and traditional knowledge is required as well as local expertise in methodologies, techniques and procedures. Environmental impact assessments should involve ecologists with extensive knowledge on the relevant ecosystem(s) in the assessment team.
37. It is also recommended to develop training workshops on biodiversity and environmental impact/strategic environmental assessment for both assessment practitioners and biodiversity specialists to build a common understanding of the issues. School and university curricula should be reviewed to ensure that they incorporate material on biodiversity conservation, sustainable development and environmental impact/strategic environmental assessment.
38. Biodiversity relevant data should be organized in regularly updated and accessible databases, making use of rosters of biodiversity experts.

### **(b) Legislative authority**

39. If environmental impact assessment and strategic environmental assessment procedures are incorporated into legislation, and the requirements for project/policy developers to find

---

<sup>a/</sup> See the Global Taxonomy Initiative and the proposed programme of work (decision V/9 of the Conference of the Parties and SBSTTA recommendation VI/6)

the most environmentally sound, efficient options that avoid, reduce or mitigate biodiversity and other adverse impacts are made explicit, this will prompt developers to, at a very early stage, use environmental impact assessment tools to improve the development process prior to the project consent stage or in some cases prior to screening procedures.

**(c) Participation**

40. Relevant stakeholders or their representatives, and in particular indigenous and local communities should be involved in the development of guidelines or recommendations for environmental impact assessments as well as throughout the assessment processes relevant to them, including decision-making.

*Ramsar: Concerning stakeholder participation, including local communities and indigenous peoples, refer here to the Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands, adopted under Resolution VII.8, and the New Guidelines for management planning for Ramsar sites and other wetlands (Resolution VIII.14).*

**(d) Incentives**

41. The possible link between impact assessment and incentive measures is pointed out in decision III/18 of the Conference of the Parties, on incentive measures. In paragraph 6 of that decision, the Conference of the Parties encouraged Parties to incorporate biological diversity considerations into impact assessments as a step in the design and implementation of incentive measures. The endorsement of the impact assessment process and its implementation within a legislative framework can act as an incentive, especially if applied at the policy level, to protect and, in certain cases even restore and rehabilitate biological diversity.<sup>7/</sup> Financial or other incentives can also be part of a negotiated approval package for a project.

**(e) Cooperation**

42. Regional collaboration is of particular importance, including for the development of criteria and indicators for the evaluation of impact and possibly criteria and indicators that can provide early warning of potential threats and adequately distinguish the effects of anthropogenic activities from natural processes, and the use of standardized methods of collection, assembly and exchange of information is needed to ensure regional compatibility and accessibility of data. Guidelines and sharing of information and experiences should be made available through *inter-alia*, the Convention's clearing-house mechanism.
43. As a follow-up to the implementation of decision IV/10 C of the Conference of the Parties, collaboration between this Convention and other biodiversity-related conventions, including in particular the Ramsar Convention and the Convention on Migratory Species, which have listed sites and binding agreements on certain species, and other relevant organizations and bodies will facilitate the development and implementation of any guidelines agreed upon for the integration of biodiversity-related issues in environmental impact assessment and strategic environmental assessment. Such a collaborative approach,

---

<sup>7/</sup> UNEP/CBD/COP/4/20 and UNEP/CBD/SBSTTA/4/10.

also embodied in resolution VII.16 of the Conference of the Parties to the Ramsar Convention (“The Ramsar Convention and impact assessment: strategic, environmental and social”), could lead to the development of an umbrella set of guidelines on impact assessment for biodiversity-related conventions.

44. Web-based resources such as the clearing-house mechanism of the Convention on Biological Diversity may help to raise awareness about best available methods and useful sources of information and experience, and should be developed and used for the provision and exchange of information on environmental impact assessment.
45. Communication between practitioners of environmental impact assessment and scientists working in the biodiversity domain is in urgent need of improvement and should be enhanced through workshops, case-study assessments. <sup>8/</sup>

---

<sup>8/</sup> See UNEP/CBD/COP/5/INF/34

## Appendix 1

## Questions pertinent to screening on biological diversity impacts

<i>Level of diversity</i>	<i>Biological diversity perspective</i>	
	<i>Conservation of biological diversity (Non-use values)</i>	<i>Sustainable use of biodiversity (Use values)</i>
Genetic diversity <sup>(1)</sup>	(I) Does the intended activity cause a local loss of varieties/cultivars/breeds of cultivated plants and / or domesticated animals and their relatives, genes or genomes of social, scientific and economic importance?	
Species diversity <sup>(2)</sup>	(II) Does the intended activity cause a direct or indirect loss of a population of a species?	(III) Does the intended activity affect the sustainable use of a population of a species?
Ecosystem diversity <sup>(2)</sup>	(IV) Does the intended activity lead to serious damage or total loss of (an) ecosystem(s) or land-use type(s), thus leading to a loss of ecosystem diversity (i.e. the loss of indirect use values and non-use values)?	(V) Does the intended activity affect the sustainable exploitation of (an) ecosystem(s) or land-use type(s) by humans in such manner that the exploitation becomes destructive or non-sustainable (i.e. the loss of direct use values)?

- (1) The potential loss of natural genetic diversity (genetic erosion) is extremely difficult to determine, and does not provide any practical clues for formal screening. The issue probably only comes up when dealing with highly threatened, legally protected species which are limited in numbers and / or have highly separated populations (rhinoceros, tigers, whales, etc.), or when complete ecosystems become separated and the risk of genetic erosion applies to many species (the reason to construct so-called eco-ducts across major line infrastructure). These issues are dealt with at species or ecosystem level.

*Ramsar: The Ramsar Convention does not currently directly address issues of genetic diversity.*

- (2) Species diversity: The level at which “population” is to be defined fully depends on the screening criteria used by a country. For example, in the process of obtaining a special status, the conservation status of species can be assessed within the boundaries of a country (for legal protection), or can be assessed globally (IUCN Red Lists). Similarly, the scale at which ecosystems are defined depends on the definition of criteria in a country.

*Ramsar: As a reference for the definition of populations, for waterbirds appropriate biogeographical populations are established in Wetlands International's Waterbird Population Estimates (3<sup>rd</sup> edition, 2002). Where a site under consideration regularly supports >1% of one or more waterbird populations, and additional question could be: does the intended activity threaten to cause direct or indirect loss of the international importance of waterbird populations?*

## Appendix 2

### The screening criteria

This is a suggested outline of a set of screening criteria, to be elaborated on country level. It only deals with biodiversity criteria and thus is an add-on to already existing screening criteria.

#### Category A: Environmental impact assessment mandatory:

**Only in the case criteria can be based on formal legal backing, such as:**

- National legislation, for example in case of impact on protected species and protected areas;
- International conventions such as CITES, the Convention on Biological Diversity, Ramsar Convention on Wetlands, etc.;
- Directives from supranational bodies, such as the European Union directive 92/43/EEC of 21 May 1992 on conservation of natural habitats and of wild fauna and flora and directive 79/409/EEC on the conservation of wild birds

#### Indicative list of activities for which an environmental impact assessment could be mandatory:

- (a) **At the genetic level** (relates to screening question I in annex I above):
- Directly or indirectly cause a local loss of legally protected varieties/cultivars/breeds of cultivated plants and / or domesticated animals and their relatives, genes or genomes of social, scientific and economic importance e.g. by introducing living modified organisms that can transfer transgenes to legally protected varieties/cultivars/breeds of cultivated plants and / or domesticated animals and their relatives
- (b) **At species level** (relates to screening question II and III in annex I above):
- Directly affect legally protected species, for example by extractive, polluting or other disturbing activities;
  - Indirectly affect legally protected species, for example by reducing its habitat, altering its habitat in such a manner that its survival is threatened, introducing predators, competitors or parasites of protected species, alien species or GMOs;
  - Directly or indirectly affect all of the above for cases which are important in respect of e.g. stop-over areas for migratory birds, breeding grounds of migratory fish, commercial trade in species protected by CITES.
  - Directly or indirectly affect non-legally protected, threatened species.
- (c) **At ecosystem level** (screening questions IV and V in annex I above):
- Are located in legally protected areas ;
  - Are located in the vicinity of legally protected areas;
  - Have direct influence on legally protected areas, for example by emissions into the

area, diversion of surface water that flows through the area, extraction of groundwater in a shared aquifer, disturbance by noise or lights, pollution through air.

**Category B: The need for, or the level of environmental impact assessment, is to be determined:**

In cases where there is no legal basis to require an environmental impact assessment, but one can suspect that the proposed activity may have a significant impact on biological diversity, or that a limited study is needed to solve uncertainties or design limited mitigation measures. This category covers the frequently referred to but difficult to use concept of “sensitive areas”. As long as so-called sensitive areas do not have any legal protected status it is difficult to use the concept in practice, so a more practical alternative is provided.

The following categories of criteria point towards possible impacts on biological diversity, and further attention is thus required:

- (a) **Activities in, or in the vicinity of, or with influence on areas with legal status having a probable link to biological diversity but not legally protecting biological diversity** (*relates to all five screening questions in annex I above*). For example: a Ramsar site has the official recognition of having internationally important wetland values, but this recognition does not automatically imply legal protection of biological diversity in these wetlands). Other examples include areas allocated to local and indigenous communities, extractive reserves, landscape preservation areas, sites covered by international treaties or conventions for preservation of natural and / or cultural heritage such as the UNESCO Biosphere reserves and World Heritage Sites;
- (b) **Impacts on biological diversity possible or likely, but the environmental impact assessment is not necessarily triggered by law:**
  - (i) **At the genetic level:**
    - Replacing agricultural, forestry or fishery varieties or breeds by new varieties, including the introduction of living modified organisms (LMOs) (*screening questions I and II*).
  - (ii) **At the species level:**
    - All introductions of non-indigenous species (*questions II and III*);
    - All activities which directly or indirectly affect sensitive or threatened species if or in case these species are not yet protected (good reference for threatened species is provided by the IUCN Red Lists); sensitive species may be endemic, umbrella species, species at the edge of their range, or with restricted distributions, rapidly declining species (*question II*). Particular attention should be given to species which are important in local livelihoods and cultures;
    - All extractive activities related to the direct exploitation of species (fisheries, forestry, hunting, collecting of plants (including living botanical

and zoological resources), etc.) (*question III*)

- All activities leading to reproductive isolation of populations of species (such as line infrastructure) (*question II*)

(iii) **At the ecosystem level:**

- All extractive activities related to the use of resources on which biological diversity depends (exploitation of surface and groundwater, open pit mining of soil components such as clay, sand, gravel, etc.) (*questions IV and V*);
- All activities involving the clearing or flooding of land (*questions IV and V*);
- All activities leading to pollution of the environment (*questions IV and V*);
- Activities leading to the displacement of people (*questions IV and V*);
- All activities leading to reproductive isolation of ecosystems (*question IV*);
- All activities that significantly affect ecosystem functions that represent values for society (see annex III below for a list of functions provided by nature). Some of these functions depend on relatively neglected taxa;
- All activities in areas of known importance for biological diversity (*questions IV and V*), such as areas containing high diversity (hot spots), large numbers of endemic or threatened species, or wilderness; required by migratory species; of social, economic, cultural or scientific importance; or which are representative, unique (e.g. where rare or sensitive species occur) or associated with key evolutionary or other biological processes.

**Category C: no environmental impact assessment required**

Activities which are not covered by one of the categories A or B, or are designated as category C after initial environmental examination.

The generic nature of these guidelines does not allow for the positive identification of types of activities or areas where environmental impact assessment from a biodiversity perspective is not needed. At country level, however, it will be possible to indicate geographical areas where biological diversity considerations do not play a role of importance and, conversely, areas where they do play an important role (biodiversity-sensitive areas).

## Appendix 3

**Indicative list (non-exhaustive) of examples of functions of the natural environment that are directly (flora and fauna) or indirectly (services provided by ecosystems such as water supply) derived from biological diversity.**

### Production functions

#### Natural production

- Timber production
- Firewood production
- Production of harvestable grasses (construction & artisanal use)
- Naturally produced fodder & manure
- Harvestable peat
- Secondary (minor) products
- Harvestable bush meat (food)
- Fish & shellfish productivity
- Drinking water supply
- Supply of water for irrigation and industry
- Water supply for hydroelectricity
- Supply of surface water for other landscapes
- Supply of ground water for other landscapes

#### Nature-based human production

- Crop productivity
- Tree plantations productivity
- Managed forest productivity
- Rangeland /livestock productivity
- Aquaculture productivity (freshwater)
- Mariculture productivity (brackish/saltwater)

### Carrying functions

- Suitability for constructions
- Suitability for indigenous settlement
- Suitability for rural settlement
- Suitability for urban settlement
- Suitability for industry
- Suitability for infrastructure
- Suitability for transport infrastructure
- Suitability for shipping / navigation
- Suitability for road transport
- Suitability for rail transport
- Suitability for air transport
- Suitability for power distribution
- Suitability for use of pipelines
- Suitability for leisure and tourism activities
- Suitability for nature conservation

### Processing and regulation functions

#### Land-based processing and regulation functions

- Decomposition of organic material (land based)
- Natural desalinisation of soils
- Development / prevention of acid sulphate soils
- Biological control mechanisms
- Seasonal cleansing of soils
- Soil water storage capacity
- Coastal protection against floods
- Coastal stabilisation (against accretion / erosion)
- Soil protection

#### Water related processing and regulation functions

- Water filtering function
- Dilution of pollutants function
- Discharge of pollutants function
- Flushing / cleansing function
- Bio-chemical/physical purification of water
- Storage for pollutants function
- Flow regulation for flood control
- River base flow regulation
- Water storage capacity
- Ground water recharge capacity
- Regulation of water balance
- Sedimentation / retention capacity
- Protection against water erosion
- Protection against wave action
- Prevention of saline groundwater intrusion
- Prevention of saline surface-water intrusion
- Transmission of diseases

#### Air-related processing and regulation functions

- Filtering of air
- Carry off by air to other areas
- Photo-chemical air processing (smog)
- Wind breaks
- Transmission of diseases
- Carbon sequestration

**Biodiversity-related regulation functions**

- Maintenance of genetic, species and ecosystem composition
- Maintenance of horizontal and vertical spatial structure, and of temporal structure
- Maintenance of key processes for structuring or maintaining biological diversity
- Maintenance of pollinator services

• **Signification functions**

- Cultural/religious/scientific/landscape functions

Appendix 4

**Biodiversity checklist on scoping for the identification of the impacts of proposed projects on components of biodiversity (Not exhaustive).**

COMPONENTS OF BIOLOGICAL DIVERSITY					
		<i>Composition</i>	<i>Structure (temporal)</i>	<i>Structure (spatial: horizontal and vertical)</i>	
LEVELS OF BIOLOGICAL DIVERSITY	Genetic diversity	Minimal viable population (avoid destruction by inbreeding / gene erosion) Local cultivars. Living modified organisms.	Cycles with high and low genetic diversity within a population.	Dispersal of natural genetic variability Dispersal of agricultural cultivars.	K E b M I
	Species diversity	Species composition, genera, families etc, rarity / abundance, endemism / exotics Population size and trends Known key species (essential role) Conservation status	Seasonal, lunar, tidal, diurnal rhythms (migration, breeding, flowering, leaf development, etc.) Reproductive rate, fertility, mortality, growth rate. Reproductive strategy.	Minimal areas for species to survive. Essential areas (stepping stones) for migrating species. Niche requirements within ecosystem (substrate preference, layer within ecosystem) Relative or absolute isolation	R p I E
	Ecosystem diversity	Types and surface area of ecosystems Uniqueness / abundance Succession stage, existing disturbances and trends (=autonomous development)	Adaptations to / dependency <i>on</i> regular rhythms: seasonal Adaptations to / dependency of <i>on</i> irregular events: droughts, floods, frost, fire, wind Succession (rate)	Spatial relations between landscape elements (local and remote) Spatial distribution (continuous or discontinuous / patchy); Minimal area for ecosystem to survive. Vertical structure (layered, horizons, stratified).	S in th ec