CONVENTION ON WETLANDS (Ramsar, Iran, 1971)
CONVENTION SUR LES ZONES HUMIDES (Ramsar, Iran, 1971)
CONVENCION SOBRE LOS HUMEDALES (Ramsar, Irán, 1971)

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Technical Session / Séance Technique / Sesión Técnica

A

Reports / Résumés / Informes

Papers / Exposés / Presentaciones

(in their original language only / dans la langue d'origine uniquement / solo en el idioma original)

Summary Report of Technical Session A

"Wise Use of Wetlands, National Wetland Policies, and Other National Policies Affecting Wetlands"

Chair: Nadra Nathai-Gyan (Trinidad and Tobago)
Vice Chair: Sergei Tveritinov (Russian Federation)
Coordinator: Clayton Rubec (Canada)
Secretariat: Tom Kabii (Ramsar Bureau)

Keynote Presentations

"The Status of National Wetland Policy Development in Ramsar Nations," Clayton Rubec, Canadian Wildlife Service
"The Status of Implementation of National Wetland Policies," Paul Mafabi, Ministry of Natural Resources, Uganda
"The Impact of Sectoral Policies on the Elaboration of an Action Plan for Wetlands in France," Gilbert Simon, Direction de la Nature et des Paysages, Ministère de l'Environnement, France
"The Role of Private Sector Wetland Experts in Dutch Conservation Efforts," Gerard Boere, Ministry of Agriculture, Nature Management and Fisheries, the Netherlands
"Human Population Growth, Land-Use Planning, and Wise Wetland Management," Allan Heydorn, WWF-South Africa
"Towards a Policy and Regulations for Jamaica's Wetlands," Carla Gordon, Natural Resources Conservation Authority, Jamaica
"Economic Valuation and its Role in Wise Use of Wetlands," Mike Acreman, IUCN, Institute of Hydrology, UK
"Environmental Impact Assessment: Towards Guidelines for Adoption under the Ramsar Convention," David Pritchard, BirdLife International (UK)

Discussion of Draft Recommendation 6.9 on National Wetland Policies

1. It was noted that National Wetland Policy should be part of national development strategies with multisectoral integration, rather than separate policies less well integrated into the policies of other sectors. A separate National Wetland Policy is not always necessary, but might be included in other national policies, as for example on biodiversity.

Discussion of Draft Recommendation 6.8 on land-use planning and coastal zones

2. Concern was expressed about the difficulty of coordinating all of the official bodies that can make decisions in land-use planning; the Conference was urged to think of legal means to consolidate authorities. A number of Contracting Parties submitted amendments to the wording, concerning the 6-meter stipulation, the addition of a catchment/watershed orientation as well as freshwater wetlands and roosting areas, and inshore marine and intertidal areas as well as landward areas.

3. It was noted that South African law still permits mining inside Ramsar sites, but there is legislation pending in Parliament that would make provision for the Convention to form part of the law of South Africa. The South African delegation has been asked to submit a recommendation encouraging the Government of South Africa to push forward this pending legislation. A statement from the Conference would be helpful.

Discussion of Draft Recommendation 6.10 on economic valuation of wetlands

4. It was cautioned that there will always be the danger that only what can be counted will be counted, and that economic valuation is not a panacea for decision-makers. The multi-disciplinary nature of the analysis should be emphasized, training in techniques should be strengthened, and the use of existing groups instead of creation of a new one should be assured.

5. There was considerable discussion about less economically quantifiable factors, such as psychological aspects and amenity, aesthetic, spiritual, cultural and other intrinsic values, and some sense of a need for a methodology with a built-in recognition of wide margins of error. The fear was expressed that just as "wise use" can provide a loop hole for unwise use, so economic valuation might create loopholes, too. Monetizing techniques can be a two-edged sword, since developers operating in developing countries can often easily pay the costs. Several speakers called for wider consultation with NGOs

Persistent Toxins

6. Austria expressed its concern for persistent toxins in wetlands and stated its intention of introducing a draft recommendation on that subject. Iceland encouraged that action.

Discussion of Draft Recommendation 6.2 on Environmental Impact Assessment.

7. It was noted that the Contracting Parties have a variety of EIA laws already, and the text should be amended to invite input of existing material. The UK supported the draft recommendation and invited co-sponsors, and Australia, noting that it has considerable experience in this matter, recorded its willingness to contribute to this process. It wished to add wording that would leave the option that it might not be necessary for the STRP to do the work itself.

8. It was observed that experts carrying out EIAs sometimes compromise professional ethics by being at the service of transnational developers, so that EIAs became a tool against conservation rather than for it. There was considerable concern about potential abuse of the EIA process. One must be wary of EIAs with restricted terms of reference, and it was noted that EIAs of single sites are often misleading without attention to networks of sites. Some felt that discussion of international standards is premature given the lack of resources in many countries. It would be important to draw attention, too, to threats from farther away outside the catchment area.

9. The need was suggested for a "rapid ecological evaluation" manual for wetlands and Ramsar sites to study sites threatened by adverse change, supplementary to EIAs.

Rapporteur: Dwight Peck

Abstracts

"Status of National Wetland Policy Development in Ramsar Nations" (abstract)

Clayton Rubec, Canadian Wildlife Service

1. Problems encountered and lessons learned in implementing national wetland policies and possible ways of avoiding problems will be examined. A report on the status of wetland policy development and implementation will be presented for each Ramsar region plus an overall global summary. A detailed examination of the Africa Region will be highlighted. Examples of draft or final wetland policies from nations in several Ramsar regions will be examined.

2. A Recommendation on a "Framework for national wetland policy development and implementation" will be presented.

"Implementation of National Wetland Policies: Opportunities and Challenges" (abstract)

Paul Mafabi, Ministry of Natural Resources, Uganda

1. Article 3.1 of the Convention on Wetlands stipulates that "the Contracting Parties shall formulate and implement their planning so as to promote the conservation of wetlands included in the List, and as far as possible the **wise use** of wetlands in their territory".

2. The 3rd and 4th Meetings of the Conference of the Contracting Parties defined the concept of Wise use and identified the fomulation and implementation of wetland policies as one of the key actions aimed at achieving wise use. Resolution 5.6 of the Kushiro Conference called on Contracting Parties to implement the applicable provisions of the "additional guidance" for the implementation of the wise use concept.

3. Although the formulation of National Wetlands Policies is central to wise use of wetlands and is gaining popularity, not many Contracting Parties have evolved comprehensive wetland policies and only a few are in the process of implementing such policies.

4. This paper examines some of the factors likely to influence the formulation and subsequent implementation of wetland policies and makes recommendations towards a framework for national policy development and implementation.

5. The Uganda policy formulation and implementation process is described while an analysis of the situation regarding National Wetlands Policies in Africa is presented and discussed.

6. The paper also discusses some of the issues to be considered when developing a national wetlands policy, such as: political will, bottom-up approach and vice-versa, consultations, inter-sectoral and holistic approaches as well as socio-economic considerations.

7. The paper also discusses some of the issues to be considered when developing a national wetlands policy, and finally looks at some of the challenges likely to be faced in the future, regarding the formulation and implementation of National Wetland Policies.

"The Impact of Sectoral Policies on the Elaboration of an Action Plan for Wetlands in France" (abstract)

Gilbert Simon, Direction de la Nature et des Paysages, Ministère de l'Environnement, France

1. In 1991, the Government of France decided to initiate a major evaluation of public policies with regard to wetlands. This independent study was carried out over three years through March 1994. It examined the ecological status of 78 wetlands of international importance, in particular the negative impacts of sectoral policies. The role of land use agencies using a landscape approach was examined in detail in one region and one department of the nation. The final report of this study lists the effects of each sectoral policy on each wetland site and provides an overall synthesis. Subsequently, in March 1995 the Government of France adopted an ambitious national Wetland Action Plan.

2. Major aspects of the study shed light on the role of agriculture intensification, notably agricultural subsidies (through European agricultural policy), land improvements and farm consolidation, drainage, forestry plantations of poplar and conifers, intensive aquaculture, construction of roads, railways and other infrastructure, urbanization, port activities, hydroelectric facilities, gravel extraction, water regulation and riverbed management, reservoirs, recreation, and fishing and hunting.

3. Wetlands have had a poor image, leading to their ecological and economical values being under-appreciated. This fact and the many legal, financial and budgetary factors leading to their destruction are brought to light in this study. The paper points out that only a highly deliberate policy by appropriate authorities, focused on wetland values and importance, in concert with elimination of the many ongoing mechanisms that encourage wetland destruction and implementation of costly policies

for wetland restoration which have difficulty in implementing thus far, could perhaps stop the past cycle of wetland degradation in France.

"Human Population Growth, Land-Use Planning and Wise Wetland Management: a Challenge for the Future" (abstract)

Allan E. F. Heydorn, WWF South Africa

1. The world's human population growth is outstripping the resources required for the maintenance of quality of life, and in many parts it is threatening survival. Water is central in maintaining the production cycles of the resources which support life. The conservation and wise use of wetlands is therefore of cardinal importance to the conservation of water resources throughout the world.

2. Excessive and uncoordinated water demands, as well as inadequacies in strategic regional land use planning, are issues of international concern in the conservation of wetlands. These issues have been elaborated upon by two contrete case studies from South Africa on the basis of which a resolution pertaining to the importance of inclusion of wetlands in land-use planning is proposed for adoption by the Ramsar Conference of the Parties.

3. Of the two case studies one is situated at St. Lucia on the East Coast. Lake St. Lucia is the largest coastal lake and wetland system on the African Continent. The threat is posed by the bid of an international mining consortium to extract heavy minerals on a large scale from the dune cordon separating the lake system from the sea. This is also the site of the Greater St. Lucia Wetland Park. The other case study is situated at Saldanha on the West Coast where development of a steel mill and associated industries is posing a major threat to the Saldanha/Langebaan aquatic and wetland system. Saldanha/Langebaan is the largest coastal inlet on the South African coastline. It is also the site of the West Coastal National Park.

4. Overall strategic land-use planning, against which environmental impact assessments can be evaluated, have proved to be inadequate at Saldenha and St. Lucia. Insufficient attention was also paid to the massive water requirements of the industries concerned, with serious implications for rivers, ground water flows and the maintenance of wetland functions. The South African Government realised these inadequacies and therefore requested the assistance of the Ramsar Bureau, which provided advice to the decision-taking processes for industrial development at St. Lucia and Saldanha.

5. The paper ends with the presentation of the draft for a resolution on land-use planning in coastal regions, as well as with recommendations for the declaration of the lower reaches of the Berg River – a source of groundwater flows feeding the Saldanha/ Langebaan System – as a Ramsar site. There is a further recommendation that both the Berg River Estuary and the Saldanha/Langebaan System be entered in the Montreux Record in order to enhance the conservation and wise-use of these wetland systems.

"Economic Valuation Of Wetlands and its Role in Wise Use" (abstract)

M. C. Acreman, Institute of Hydrology, Wallingford, UK

1. Today, most planning and development decisions are made at least partly on economic grounds and hence the goods and services provided by wetlands must be given a quantitative value if wetland conservation is to be chosen over alternative uses of the land itself or the water which feeds the wetland. For many products, such as fish or timber, there is a world market which allows easy calculation of worth of the wetland. The value of wetland functions, such as water quality improvement, may be calculated from the cost of building a treatment works to perform the same processes. However, it is much more difficult to value biodiversity or the aesthetic beauty of wetlands as no market exists. Another major hurdle is that developing countries face significant problems in

appropriating the global benefits of wetland conservation, such as biological diversity. Consequently, means of appropriation such as debt-for-nature swaps must be strengthened and added to.

2. Although a number of economic valuation studies of wetlands have been undertaken around the world and economists have developed methodologies for valuing more intangible aspects of the environment, such as amenity or aesthetic beauty, no one has synthesized from this literature a common approach to show its overall usefulness to wetland conservation and management worldwide. To address this issue, Ramsar, with financial support from the UK Department of the Environment, has commissioned a book to provide guidance to policy makers and planners on the potential for economic valuation of wetlands. The book gives details of the various techniques, guidance on planning and conducting a study and how to put the result into a wider decision making framework. To demonstrate the use of various valuation methods in the field, six examples of wetland valuation studies are given from different types of wetlands, using a range of valuation methods and covering diverse geographical areas. These are the Hadejia-Nguru floodplain in northern Nigeria; prairie wetlands in North America; the Norfolk broads and Scottish flow country in the UK; nitrogen abatement using Swedish wetlands; coastal wetlands in SE USA; and mangrove conservation in Indonesia.

3. Recommendations for future actions are also given highlighting the need to: undertake site specific economic valuation studies; ensure inter-disciplinary collaboration in the studies; provide training and institutional capacity building of policy makers, planners, wetland managers and economics; undertake research on economic valuation theory and practice; and establish networks for exchange of ideas and experience of applying valuation methods.

"Environmental Impact Assessment: Towards Guidelines for Adoption under the Ramsar Convention" (abstract)

D. E. Pritchard, BirdLife International

1. A huge industry has grown up around techniques for formal assessment of the likely environmental consequences of proposed developments, as an aid to decision-making. Reference to such processes is increasingly built in to national and international policy and law, as an assumed component of sustainable development. Practice varies widely throughout the world, however, and to date there has been no attempt to codify globally-adoptable principles or standards which would serve the aim of "wise use" of wetlands.

2. Discussion of this at the International Conference on Wetlands and Development in Selangor, Malaysia in October 1995, concluded that EIA offers much to wise use and conservation of wetlands, but is currently inconsistent and deficient in its application. It tends to be insufficiently integrated, endorsed, long-term, open and informed. Cost is often cited as a constraint, but in reality this is often a failure to evaluate costs fully enough. The costs of poor EIA can be substantial. There is certainly a need to improve technical skills. However, even excellent EIA will have little or no influence unless high level policy gives significant weight to environmental values. Peer-review, working with the grain of local communities, monitoring, audit and review should all be provided for. All this would be aided by international guidelines on standards, which could usefully be adopted under the Ramsar Convention. More holistic Environmental Management Systems (EMS) or Integrated Environmental Management (IEM) concepts may have important roles to play.

3. An extensive technical literature on EIA, including practical guidance, already exists. Many individual countries and international agencies already operate effective EIA systems. However, global consistency of standards and approaches, as well as facilitating exchange of experience about good practice, can help to prevent damaging activities being "exported" to wherever they receive least scrutiny, and can help to level out competitive disadvantages of regulation.

4. Analysis of existing texts adopted by the Conference of the Parties, particularly concerning guidance on applying the "wise use" concept, shows a measure of common understanding already on some of

the key tenets of EIA, although this has not been crystallised in one place. A summary will be presented, referring also to the Convention's Strategic Plan and the conclusions of recent regional meetings.

5. Suggested guidelines suitable for adoption by the Parties will also be presented for discussion. Recommended principles of good practice would address: to what EIA should apply; in what circumstances it is appropriate; how EIA systems should be put in place; when the EIA should be performed; who should be involved, and how; what description of the environment is required; what potential impacts should be assessed; how potential impacts should be evaluated, how avoidance, reduction, mitigation and compensation for impacts should be addressed; and how results should be used.

Rapport Résumé de la Séance Technique A

"Utilisation rationnelle des zones humides, politiques nationales pour les zones humides et autres politiques nationales affectant les zones humides"

Présidence: Nadra Nathai-Gyan (Trinité-et-Tobago)
Vice-présidence: Sergei Tveritinov (Fédération de Russie)
Coordination: Clayton Rubec (Canada)
Secrétariat: Tom Kabii (Bureau Ramsar)

Exposés liminaires

"Etat d'avancement de l'élaboration des politiques relatives aux zones humides par les pays Ramsar," Clayton Rubec, Service Canadien de la Faune

"Mise en œuvre de politiques nationales pour les zones humides," Paul Mafabi, Ministère des Ressources naturelles, Ouganda

"L'impact des politiques sectorielles sur l'élaboration des plans d'action pour les zones humides en France: premières étapes," Gilbert Simon, Direction de la Nature et des Paysages, Ministère de l'Environnement, France

"Le rôle des experts en zones humides du secteur privé dans les efforts de conservation aux Pays-Bas," Gerard Boere, Ministère de l'Agriculture, de la Gestion de la nature et de la Pêche, Pays-Bas

"Croissance démographique, aménagement du territoire et gestion rationnelle des zones humides: un défi pour l'avenir," Allan Heydorn, WWF-Afrique du Sud

"Vers l'établissement d'une politique sur les zones humides en Jamaïque," Carla Gordon, Natural Resources Conservation Authority, Jamaïque

"L'Évaluation économique et son rôle dans l'Utilisation Rationelle des zones humides," Mike Acreman, Institute of Hydrology, R.-U.

"Etudes d'impact sur l'environnement: vers l'établissement de lignes directrices pouvant être adoptées dans le cadre de la Convention de Ramsar," David Pritchard, BirdLife International (R.-U.)

Discussion concernant le Projet de recommandation 6.9 sur les politiques nationales pour les zones humides

1. Les politiques nationales pour les zones humides doivent faire partie intégrante de stratégies nationales de développement à caractère intersectoriel, intégrées aux politiques des autres secteurs. Une Politique nationale pour les zones humides n'est pas forcément nécessaire en soi: elle peut faire partie d'une autre politique nationale, par exemple sur la diversité biologique.

Discussion du Projet de recommandation 6.8 sur les plans d'occupation des sols et les zones côtières

2. Des préoccupations sont exprimées concernant la difficulté de coordonner tous les organismes officiels susceptibles de prendre des décisions sur les plans d'occupation des sols; la Conférence est priée de réfléchir à des moyens juridiques pour coordonner ces différentes autorités. Plusieurs Parties contractantes proposent des amendements au libellé, concernant les 6 mètres de profondeur, demandant de mentionner l'approche au niveau du bassin versant, les zones humides d'eau douce et les sites de perchage, les zones marines littorales, intertidales et en retrait du littoral.

3. Le droit sud-africain autorise encore l'exploitation minière à l'intérieur des sites Ramsar, mais une nouvelle législation est devant le Parlement qui prévoie l'inscription de la Convention dans la législation sud-africaine. La délégation sud-africaine est priée de soumettre une recommandation encourageant le Gouvernement de son pays à activer le processus. Une déclaration émanant de la Conférence serait utile à cet égard.

Discussion du Projet de recommandation 6.10 sur l'évaluation économique des zones humides

4. L'évaluation économique n'est pas la panacée car les décideurs seront toujours enclins à ne tenir compte que de ce qui est quantifiable. Il convient de souligner la nature pluridisciplinaire de l'évaluation, d'améliorer les techniques et de faire appel aux groupes existants au lieu d'en créer un nouveau.

5. Un long débat a lieu sur les facteurs les plus difficiles à chiffrer, notamment les aspects psychologiques et les valeurs intrinsèques: récréatives, esthétiques, spirituelles et culturelles, par exemple. Le débat porte aussi sur l'importance d'une méthodologie prévoyant une marge d'erreur importante. D'aucun craignent que l'évaluation économique n'ouvre des brèches, au même titre que "l'utilisation rationnelle» peut servir de prétexte à une utilisation incontrôlée. Les techniques d'évaluation monétaire peuvent être à double tranchant, car les acteurs du développement dans les pays en développement ont souvent de quoi payer. Plusieurs orateurs demandent d'autres consultations avec les ONG.

Substances toxiques persistantes

6. L'Autriche se déclare préoccupée par la présence de substances toxiques persistantes dans les zones humides et annonce qu'elle va présenter un projet de Recommandation à ce sujet. L'Islande lui apporte son soutien.

Discussion du Projet de recommandation 6.2 sur les études d'impact sur l'environnement

7. Les Parties contractantes disposent déjà d'un large éventail de lois sur les EIE et le texte devrait être amendé pour encourager l'utilisation des instruments existants. Le Royaume-Uni appuie le projet de recommandation et invite d'autres participants à en faire autant; l'Australie, soulignant son expérience considérable en la matière, répond favorablement à cette invitation. Elle souhaite modifier le texte afin qu'il n'en ressorte pas que la tâche incombera nécessairement au GEST.

8. Les experts qui effectuent les EIE travaillent parfois au mépris de l'éthique professionnelle en étant au service d'entités multinationales, de sorte que, au lieu de servir la conservation, les EIE la trahissent. Abuser de la procédure d'EIE est dangereux. Il y a lieu de se méfier des EIE dont le cahier des charges est trop limité et ce serait une erreur que de considérer une EIE exécutée dans un site particulier comme pouvant s'appliquer à des ensembles de sites. La discussion sur les normes internationales est jugée prématurée étant donné que de nombreux pays manquent de ressources. Il importe d'attirer l'attention sur les menaces venant de zones éloignées du bassin versant.

9. En plus des EIE, il faudrait disposer d'un manuel "d'évaluation écologique rapide» pour les zones humides et les sites Ramsar, qui faciliterait les études de sites menacés par des changements.

Résumés

"Etat d'avancement de l'élaboration des politiques relatives aux zones humides par les Pays Ramsar" (résumé)

Clayton Rubec , Service Canadien de la Faune

1. Les problèmes rencontrés au cours de l'application de politiques nationales pour les zones humides, les leçons tirées de l'expérience et les moyens possibles d'éviter les problèmes seront examinés. Un rapport de situation sur l'élaboration et l'application de politiques pour les zones humides sera présenté

pour chaque région Ramsar, ainsi qu'un résumé général. La situation de l'Afrique sera spécialement traitée et l'on examinera des politiques pour les zones humides en projet ou terminées pour quelques pays de plusieurs régions Ramsar.

2. Une Recommandation sera présentée sur un Cadre d'élaboration et d'application de politiques nationales pour les zones humides.

"Mise en oeuvre de politiques nationales pour les zones humides" (résumé)

Paul Mafabi, Ministère des Ressources naturelles, Ouganda

1. L'article 3.1 de la Convention sur les zones humides stipule que «les Parties contractantes élaborent et appliquent leurs plans d'aménagement de façon à favoriser la conservation des zones humides inscrites sur la Liste et, autant que possible, l'utilisation rationnelle des zones humides de leur territoire».

2. La 3e et la 4e sessions de la Conférence des Parties contractantes ont défini le concept d'utilisation rationnelle et déterminé que l'élaboration et la mise en oeuvre de politiques pour les zones humides étaient au premier rang des mesures permettant de parvenir à l'utilisation rationnelle. La Résolution 5.6 de la Conférence de Kushiro demandait aux Parties contractantes d'appliquer les dispositions appropriées des «Orientations complémentaires pour l'application du concept d'utilisation rationnelle».

3. Bien que l'élaboration de politiques nationales pour les zones humides soit capitale pour l'utilisation rationnelle des zones humides et gagne en popularité, peu nombreuses sont les Parties contractantes qui ont mis au point des politiques complètes pour les zones humides et plus rares encore celles qui sont en train d'appliquer de telles politiques.

4. Le présent exposé examine certains des facteurs qui pourraient influencer l'élaboration et l'application ultérieure des politiques pour les zones humides et propose des recommandations relatives à un cadre d'élaboration et d'application de politiques nationales.

5. Le processus d'élaboration et d'application de la Politique ougandaise pour les zones humides est décrit, accompagné d'une analyse et d'une discussion sur la situation en Afrique en ce qui concerne les politiques nationales pour les zones humides.

6. Le document traite aussi de certaines des questions à considérer lors de l'élaboration d'une politique nationale pour les zones humides, à savoir: la volonté politique, une approche de la base au sommet et vice versa, les consultations, les démarches intersectorielles et globales et les questions socio-économiques.

7. Enfin, le document décrit certains des défis qu'il faudra relever, à l'avenir, dans le domaine de l'élaboration et de l'application de politiques nationales pour les zones humides.

"L'Impact des politiques sectorielles sur L'élaboration des plans d'action pour les zones humides en France" (résumé)

Gilbert Simon, Ministère de l'Environnement, France

1. En 1991, le Gouvernement français a décidé de lancer une importante évaluation des politiques publiques relatives aux zones humides. Cette étude indépendante a duré trois ans et s'est terminée en mars 1994. Elle a examiné le statut écologique de 78 zones humides d'importance internationale, notamment du point de vue des impacts défavorables des politiques sectorielles. Le rôle des organismes d'aménagement du territoire qui adoptent une approche au niveau du paysage a été examiné en détail dans une région et dans un département. Le rapport final de l'étude énumère les effets de chaque politique sectorielle sur chaque site de zone humide et présente une synthèse globale.

Ultérieurement, en mars 1995, le Gouvernement français a adopté un Plan d'action ambitieux pour les zones humides.

2. Les aspects principaux de l'étude mettent en lumière le rôle de l'intensification de l'agriculture et, en particulier, des subsides agricoles (versés dans le cadre de la politique agricole européenne) de la bonification des sols et du remembrement agricole, du drainage, des plantations de peupliers et de conifères, de l'aquaculture intensive, de la construction de routes, de voies ferrées et autres infrastructures, de l'urbanisation, des activités portuaires, des centrales hydro-électriques, des gravières, de la régulation de l'eau et de l'aménagement du lit des cours d'eau, des réservoirs, des activités récréatives, de la pêche et de la chasse.

3. Parce que les zones humides ont mauvaise réputation, leur intérêt écologique et économique n'a jamais été apprécié à sa juste valeur. Ce fait, de même que les nombreux facteurs juridiques, financiers et budgétaires qui entraînent leur destruction, est mis en évidence dans l'étude. Celle-ci souligne que seule une politique délibérée axée sur les valeurs et l'importance des zones humides, menée par les autorités compétentes, de concert avec l'élimination de nombreux mécanismes qui encouragent la destruction des zones humides et avec la mise en oeuvre de politiques coûteuses de restauration des zones humides qui, à ce jour, se sont révélées difficiles à appliquer, pourrait, éventuellement, mettre un terme au cycle passé de la dégradation des zones humides en France.

"Croissance démographique, aménagement du territoire et gestion rationnelle des zones humides: un défi pour l'avenir" (résumé)

Allan Heydorn, WWF-Afrique du Sud

1. Dans de nombreuses régions de la planète, la croissance démographique humaine est en train d'épuiser les ressources nécessaires pour le maintien de la qualité de la vie. Elle menace la survie. L'eau est un élément central du maintien de la production des cycles de ressources qui entretiennent la vie. La conservation et l'utilisation des zones humides sont donc d'importance primordiale pour la conservation des ressources hydrologiques du monde entier.

2. Une demande en eau excessive et non coordonnée, ainsi que les insuffisances des plans stratégiques régionaux d'occupation des sols sont des questions d'intérêt international dans l'optique de la conservation des zones humides. Ces questions ont été traitées dans le cadre de deux études de cas précises menées en Afrique du Sud et sur la base desquelles une résolution relative à l'importance de tenir compte des zones humides dans la planification du territoire est proposée pour adoption par la Conférence des Parties.

3. Une des deux études concerne St Lucia, sur la côte est. Le lac St Lucia est le plus vaste système lacustre et de zone humide côtier du continent africain. La menace provient d'un consortium minier international édifié pour extraire des minerais lourds à grande échelle dans le cordon dunaire qui sépare le système lacustre de la mer. C'est également le site du Grand Parc de zone humide St Lucia. L'autre étude de cas concerne Saldanha, sur la côte ouest, où la construction d'une aciérie et des industries connexes fait courir un risque majeur au système aquatique et de zone humide Saldanha/Langebaan. Saldanha/ Langebaan est la plus grande crique côtière sur le littoral sud-africain. C'est également le site du Parc national West Coastal.

4. La planification stratégique globale des sols par rapport à laquelle on peut évaluer les impacts sur l'environnement s'est révélée inappropriée pour Saldanha et St Lucia. Une attention insuffisante a également été accordée aux besoins en eau massifs des industries concernées avec toutes les répercussions graves que cela peut avoir sur les cours d'eau, les eaux souterraines et le maintien des fonctions des zones humides. Le Gouvernement de l'Afrique du Sud a réalisé toutes ces lacunes et a donc demandé l'aide du Bureau Ramsar qui a apporté un avis dans le processus décisionnel à propos de la mise en valeur industrielle à St Lucia et Saldanha.

5. Le document se termine sur la présentation d'un projet de résolution sur les plans d'occupation des sols dans les régions côtières ainsi que sur des recommandations d'inscription du cours inférieur du fleuve Berg – source d'eau souterraine qui alimente le système Saldanha/Langebaan – en tant que site Ramsar. Il existe une autre recommandation visant à inscrire l'estuaire du fleuve Berg et le système Saldanha/ Langebaan au Registre de Montreux afin d'améliorer la conservation et l'utilisation rationnelle de ces systèmes de zones humides.

"L'Évaluation économique et son rôle dans l'Utilisation Rationelle des zones humides" (résumé)

Mike Acreman, Institute of Hydrology, R.-U.

1. Aujourd'hui, la plupart des décisions de planification et de développement se prennent, au moins en partie, pour des raisons économiques; il faut donc attribuer une valeur quantitative aux biens et services fournis par les zones humides si l'on veut que la conservation soit choisie plutôt que d'autres formes d'utilisation des terres ou de l'eau qui alimente la zone humide. Pour beaucoup de produits, tels que le poisson ou le bois d'oeuvre, il existe un marché mondial qui permet un calcul facile de la valeur de la zone humide. Une fonction telle que l'amélioration de la qualité de l'eau, doit être calculée d'après les frais de construction d'un ouvrage de traitement qui pourrait accomplir la même fonction. Toutefois, il est beaucoup plus difficile d'évaluer la diversité biologique ou la beauté des zones humides car pour cela, il n'y a pas de marché. Une autre épine est que les pays en développement ont beaucoup de mal à récupérer les avantages mondiaux de la conservation des zones humides et, par exemple, de la diversité biologique. En conséquence, des moyens d'appropriation tels que les accords de conversion de la dette en investissement écologique doivent être renforcés et comptabilisés.

2. Certes, beaucoup d'études d'évaluation économique des zones humides ont été entreprises dans le monde entier et les économistes ont mis au point des méthodes d'évaluation d'aspects moins tangibles de l'environnement tels que la beauté du milieu et son agrément, mais nul n'a synthétisé, à partir de cette littérature, une approche commune permettant de démontrer son utilité globale pour la conservation et la gestion des zones humides dans le monde entier. C'est pour traiter cette question que Ramsar, avec l'aide financière du Département britannique de l'environnement, a commandité un ouvrage destiné à offrir des orientations aux décideurs et aux planificateurs sur les moyens possibles d'évaluer les zones humides d'un point de vue économique. Cet ouvrage décrit différentes techniques, donne des lignes directrices sur la planification et la réalisation d'une étude ainsi que sur la manière d'intégrer le résultat dans un cadre décisionnel plus général. Pour démontrer l'utilisation des diverses méthodes d'évaluation sur le terrain, six exemples sont donnés dans différents types de zones humides, couvrant diverses zones géographiques, à l'aide de toute une gamme de méthodes d'évaluation. Il s'agit de la plaine d'inondation Hadejia-Nguru, au nord du Nigéria; des zones humides des prairies en Amérique du Nord; des Norfolk Broads et Scottish flow country au Royaume-Uni; de la réduction de l'azote dans les zones humides suédoises; des zones humides côtières dans le sud-est des Etats-Unis et de la conservation des mangroves en Indonésie.

3. Des recommandations sur les mesures à prendre à l'avenir sont également proposées et mettent en relief la nécessité: d'entreprendre des études d'évaluation économique spécifiques à certains sites; de garantir une collaboration pluridisciplinaire dans le cadre des études; d'assurer la formation et de renforcer la capacité institutionnelle des décideurs, planificateurs, administrateurs des zones humides et économistes; d'entreprendre la recherche sur la théorie et la pratique de l'évaluation économique; et d'établir des réseaux pour l'échange d'idées et d'expériences en matière d'application des méthodes d'évaluation.

"Etudes d'Impact sur l'Environnement: vers l'établissement de lignes directrices pouvant être adoptées dans le cadre de la Convention de Ramsar" (résumé)

David Pritchard, BirdLife International, R.-U.

1. A partir des techniques d'évaluation des conséquences éventuelles pour l'environnement de projets de développement, une vaste industrie a vu le jour afin de venir en aide aux décideurs. Des références à ces processus sont de plus en plus fréquemment intégrées aux politiques et lois internationales et nationales comme composantes supposées du développement durable. La pratique varie énormément selon les régions et, à ce jour, rien n'a été fait en vue de codifier des principes ou des normes qui puissent être adoptables à l'échelle mondiale et servir les objectifs de «l'utilisation rationnelle» des zones humides.

2. La Conférence internationale sur les zones humides et le développement qui a eu lieu à Selangor, Malaisie, en octobre 1995 a discuté de cette question et a conclu que les EIE pourraient être très utiles à l'utilisation rationnelle et à la conservation des zones humides mais sont actuellement incohérentes dans leur application et présentent des lacunes. Elles tendent à ne pas être suffisamment intégrées, approuvées, longues, ouvertes et informées. Leur coût est souvent cité comme une contrainte mais, en réalité, c'est souvent parce que l'on n'arrive pas à évaluer les coûts de façon assez exhaustive. Les coûts des mauvaises EIE peuvent être considérables. Il est certainement nécessaire d'améliorer les compétences techniques. Toutefois, même d'excellentes EIE auront peu d'influence – voire pas du tout – à moins que les valeurs environnementales ne bénéficient d'un appui à un niveau élevé. Il faudrait prévoir l'évaluation par un groupe d'experts, la collaboration avec les communautés locales, la surveillance continue, l'audit et l'évaluation. Tout cela avec l'aide de lignes directrices internationales sur les normes qui pourraient être adoptées utilement dans le cadre de la Convention de Ramsar. Des systèmes de gestion de l'environnement plus complets ou des concepts de gestion intégrée de l'environnement (GIE) ont peut-être des rôles importants à jouer.

3. Il existe déjà une littérature technique importante sur les EIE qui contient des orientations pratiques. Beaucoup de pays et d'organisations internationales ont déjà des systèmes d'EIE qui fonctionnement efficacement. Toutefois, la cohérence des normes et des démarches dans le monde entier ainsi que l'échange d'expérience sur les pratiques peuvent aider à empêcher "l'exportation" d'activités dommageables vers des régions où la surveillance est moins stricte et peuvent aider à compenser les inconvénients de la réglementation pour la concurrence.

4. L'analyse des textes qui ont été adoptés par la Conférence des Parties, notamment en ce qui concerne les orientations sur l'application du concept d'«utilisation rationnelle» montre qu'il y a une certaine interprétation commune de certains des points essentiels des EIE bien que cela ne se soit pas cristallisé en un même lieu. Un résumé sera présenté qui fera référence au Plan stratégique de la Convention et aux conclusions des récentes réunions régionales.

5. Des lignes directrices appropriées, pouvant être adoptées par les Parties, seront également présentées pour examen. Les principes de bonne pratique recommandés devraient traiter les point suivants: à quoi s'appliquent les EIE; les circonstances dans lesquelles une EIE s'impose; comment mettre en place des systèmes d'EIE; quand mener une EIE; qui devrait y participer et comment; quelle description de l'environnement est nécessaire; quels impacts potentiels doivent être évalués; comment ces impacts potentiels devraient-ils être évalués, comment éviter, réduire, atténuer et compenser les impacts; et comment utiliser les résultats.

Informe Resumido de la Sesión Técnica A

"Uso Racional de los Humedales, Políticas Nacionales para los Humedales y otras Políticas Nacionales que afectan a los Humedales"

Presidenta: Nadra Nathai-Gyan (Trinidad y Tabago)
Vicepresidente: Sergei Tveritinov (Federación de Rusia)
Coordinador: Clayton Rubec (Canadá)
Secretaría: Tom Kabii (Oficina de Ramsar)

Presentaciones principales

"Estado de Desarrollo de las Políticas Nacionales de Humedales en Países Ramsar," Clayton Rubec, Servicio de la Naturaleza del Canadá

"Aplicación de las Políticas Nacionales de Humedales," Paul Mafabi, Ministerio de Recursos Naturales, Uganda

"El Impacto de las Políticas Sectoriales en la Elaboración de un Plan de Acción para los Humedales en Francia," Gilbert Simon, Direction de la Nature et des Paysages, Ministère de l'Environnement, Francia

"El Papel de los Expertos en Humedales del Sector Privado en las Actividades de Conservación de la Naturaleza que se llevan a cabo en Holanda," Gerard Boere, Ministerio de Agricultura, Naturaleza y Pesca, Países Bajos

"Crecimiento Poblacional Humano, Planificación del Uso del Suelo, y Manejo Racional de Humedales," Allan Heydon, WWF Sudáfrica

"Desarrollo de una Política de Humedales en Jamaica," Carla Gordon, Departamento de Conservación de los Recursos Naturales, Jamaica

"Evaluación Económica y su Papel en el Uso Racional de Humedales," Mike Acreman, Instituto de Hidrología, Reino Unido

"Evaluación del Impacto Ambiental: Elaboración de Directrices para la Aprobación de Proyectos por parte de la Convención de Ramsar," David Pritchard, BirdLife International (Reino Unido)

Debate del proyecto de Recomendación 6.9, sobre políticas nacionales de humedales

1. Se señaló que las políticas nacionales de humedales debían integrarse en las estrategias nacionales de desarrollo y tener un planteamiento multisectorial, en lugar de ser unas políticas independientes, menos integradas con las políticas que se aplican en otros sectores. No siempre es necesaria una política nacional de humedales independiente, sino que puede formar parte de otras políticas nacionales, por ejemplo, la aplicada en la esfera de la biodiversidad.

Debate del proyecto de Recomendación 6.8, sobre planificación del uso de la tierra y zonas costeras

2. Se manifestó preocupación por la dificultad que planteaba la coordinación de todos los órganos oficiales que pueden intervenir y adoptar decisiones en la planificación del uso de la tierra; se instó a la Conferencia a pensar en las posibilidades jurídicas de refundir las distintas autoridades responsables. Una serie de Partes Contratantes presentaron enmiendas al texto, referentes a la prescripción de los 6 metros, la aceptación de un planteamiento basado en las cuencas así como en los humedales de agua dulce y las áreas de cría, las áreas marinas interiores y zonas intermareas, así como las áreas de tierra firme.

3. Se señaló que la legislación sudafricana permite todavía explotaciones mineras dentro de sitios Ramsar, pero que está pendiente de aprobación por el Parlamento una legislación que prevé que la Convención entre a formar parte del ordenamiento jurídico de Sudáfrica. Se pidió a la delegación de Sudáfrica que

presentara una recomendación en la que se alentara a su Gobierno a acelerar la aprobación de esta legislación. Sería útil una declaración de la Conferencia.

Debate del proyecto de Recomendación 6.10, sobre valoración económica de los humedales

4. Se advirtió que siempre se corre el peligro de que sólo se cuente lo que puede ser contado y se indicó que la valoración económica no es una panacea para los responsables de las decisiones. Debe subrayarse el carácter multidisciplinar del análisis, debe promoverse la formación técnica y debe conseguirse que se utilicen los grupos ya existentes, en lugar de crear uno nuevo.

5. Se produjo un debate considerable sobre los factores que económicamente son menos cuantificables, por ejemplo, los aspectos psicológicos y los valores de ocio, estéticos, espirituales, culturales y de otro tipo, y sobre la necesidad de una metodología que parta del supuesto de la existencia de unos márgenes de error amplios. Se manifestó el temor de que, lo mismo que las lagunas del "uso racional" pueden dar lugar a un uso irracional, la valoración económica tenga también sus propias lagunas. Las técnicas de monetización pueden ser un arma de doble filo ya que muchas veces los empresarios que actúan en países en desarrollo pueden pagar los costos fácilmente. Varios oradores pidieron que se abrieran nuevas consultas con las ONG.

Persistencia de toxinas

6. Austria manifestó su preocupación por la persistencia de toxinas en los humedales y manifestó su intención de introducir un proyecto de recomendación al respecto. Islandia aplaudió esta medida.

Debate del proyecto de Recomendación 6.2, sobre evaluación del impacto ambiental

7. Se indicó que muchas Partes Contratantes tenían ya distintas leyes referentes a la valoración del impacto ambiental y que debía modificarse el texto del proyecto de Recomendación para pedir que se aportara información sobre el texto de las leyes en vigor. El Reino Unido apoyó el proyecto de Recomendación e invitó a que se presentaran otros copatrocinadores, y Australia, tras señalar que tenía una amplia experiencia en la cuestión, hizo constar en acta su deseo de contribuir a este proceso. Añadió que quería modificar la redacción del texto para abrir la posibilidad de que no sea necesario que el Grupo de Examen Científico y Técnico haga todo el trabajo sin ayudas.

8. Se observó que los expertos encargados de las evaluaciones del impacto ambiental a veces transigen con su ética profesional poniéndose al servicio de empresarios transnacionales, de forma que las evaluaciones se convierten en un instrumento contrario a la conservación de la naturaleza en lugar de protegerla. Se manifestó una preocupación considerable por el abuso potencial del mecanismo de las evaluaciones del impacto ambiental. Hay que desconfiar de las evaluaciones que se hayan hecho con un mandato restringido y se indicó que las evaluaciones del impacto ambiental de sitios aislados muchas veces inducen a error si no se presta atención a su posible pertenencia a una red de sitios. Algunos opinaron que es prematuro iniciar un debate sobre las normas internacionales debido a que muchos países carecen de recursos. También se indicó que era importante señalar las amenazas que proceden de áreas muy alejadas de la cuenca.

9. Se sugirió que era necesario elaborar un manual de "evaluación ecológica rápida" de los humedales y sitios Ramsar que permita estudiar los sitios amenazados por cambios negativos, de una forma complementaria con las evaluaciones del impacto ambiental.

Resúmenes

"Estado de Desarrollo de la Políticas Nacionales de Humedales en Países Ramsar" (resumen)

Clayton Rubec, Servicio de la Naturaleza del Canadá

1. Se examinarán los problemas con que se ha tropezado y las experiencias adquiridas al aplicar políticas nacionales de humedales, así como las posibles formas de evitar los problemas. Se presentará un informe sobre la situación de cada una de las regiones de Ramsar en lo que respecta a la elaboración y aplicación de políticas de humedales, seguido de un resumen mundial. Se prestará especial atención al examen detallado de la región de Africa. Se analizarán los proyectos de políticas de humedales o las políticas de humedales adoptadas en naciones situadas en las diversas regiones Ramsar.

2. Se presentará una recomendación sobre el establecimiento de un marco para la elaboración y aplicación de políticas nacionales de humedales.

"Aplicacion de las Politicas Nacionales de Humedales" (resumen)

Paul Mafabi, Ministerio de Recursos Naturales, Uganda

1. El artículo 3.1 de la Convención de Humedales estipula que "las Partes Contratantes deberán elaborar y aplicar su planificación de forma que favorezca la conservación de los humedales incluidos en la Lista y, en la medida de lo posible, el uso racional de los humedales de su territorio".

2. En las reuniones tercera y cuarta de la Conferencia de las Partes Contratantes se definió el concepto de uso racional y se subrayó que la formulación y aplicación de políticas de humedales es una de las principales medidas que pueden adoptarse para lograr un uso racional de los mismos. La Resolución 5.6 de la Conferencia de Kushiro pide a las Partes Contratantes que den cumplimiento a las disposiciones aplicables de las "Orientaciones adicionales para la aplicación del concepto de uso racional".

3. Aunque la formulación de políticas nacionales de humedales sea una medida fundamental para el uso racional de los mismos y sea cada vez más popular, no son muchas las Partes Contratantes que han elaborado una política global de humedales y claramente son pocas las que la aplican.

4. En este documento se examinan algunos de los factores que pueden influir en la formulación y posterior aplicación de una política de humedales y se formulan recomendaciones para definir el marco de desarrollo y aplicación de una política nacional.

5. Se describe la formulación y aplicación de una política de humedales en Uganda y se presenta y debate un análisis de la situación de las políticas nacionales de humedales en Africa.

6. También se examinan en este documento algunas cuestiones que deben tenerse en cuenta al elaborar una política nacional de humedales, por ejemplo: voluntad política, previsiones verticales, en un sentido y otro, consultas, planteamientos intersectoriales y holísticos y consideraciones socioeconómicas.

7. Por último, se examinan en el documento algunos de los problemas que habrán de resolverse en el futuro para poder formular y aplicar políticas nacionales de humedales.

"El Impacto de las Políticas Sectoriales en la Elaboración de un Plan de Acción para los Humedales en Francia" (resumen)

Gilbert Simon, Ministère de l'Environnement, Francia

1. En 1991, el Gobierno de Francia decidió iniciar una amplia evaluación de las políticas oficiales en relación con los humedales. Este estudio independiente, cuya realización requirió tres años, acabó en marzo de 1995. En él se examinaba la situación ecológica de 78 humedales de importancia internacional y, en particular, los impactos negativos de las políticas sectoriales. Se analizó detenidamente la función de los organismos que se ocupaban del uso de la tierra con un enfoque basado en la conservación del paisaje en una región y un departamento de la nación. En el informe

final del estudio se enumeran los efectos de cada una de las políticas sectoriales en cada humedal y se hace una síntesis global. Posteriormente, en marzo de 1995, el Gobierno de Francia adoptó un ambicioso plan nacional de acción para los humedales.

2. En las principales partes del estudio se aclara la función de la intensificación de la explotación agrícola y en especial de las subvenciones a la agricultura (a través de la política agrícola europea), el mejoramiento de tierras y la concentración parcelaria, la desecación, las plantaciones de álamos y coníferas, la acuicultura intensiva, la construcción de carreteras, ferrocarriles y otros elementos de infraestructura, la urbanización, las actividades portuarias, las instalaciones hidroeléctricas, la extracción de grava, la ordenación de las aguas y de los cauces fluviales, los reservorios, las actividades recreativas y la pesca y caza.

3. La deficiente apreciación de los humedales ha llevado a su infravaloración desde el punto de vista ecológico y económico. El estudio pone de relieve ese hecho, así como los múltiples factores jurídicos, financieros y presupuestarios que llevan a la destrucción de humedales. El estudio indica que sólo una política decidida de las autoridades competentes, en la que se atienda principalmente al valor y la importancia de los humedales, unida a la eliminación de los numerosos mecanismos que actualmente propician la destrucción de humedales y costosas políticas de restauración cuya aplicación ha resultado hasta ahora difícil, podrían detener la pasada fase de degradación de los humedales en Francia.

"Crecimiento Poblacional Humano, Planificación del Uso del Suelo, y Manejo Racional de Humedales: un Reto para el Futuro" (resumen)

Allan Heydorn, WWF Sudáfrica

1. El crecimiento demográfico mundial está haciendo insuficientes los recursos que se precisan para mantener la calidad de vida y, en muchas partes del mundo, está poniendo en peligro la supervivencia. El agua es un elemento central para mantener los ciclos de producción de los recursos que sustentan la vida. En consecuencia, la conservación y el uso racional de los humedales reviste una importancia capital para la conservación de los recursos hídricos en todo el mundo.

2. La demanda excesiva y no coordinada de agua y las insuficiencias de la planificación regional estratégica del uso de la tierra son cuestiones que plantean problemas de alcance internacional en la esfera de la conservación de los humedales. Dos estudios monográficos concretos, realizados en Sudáfrica y sobre la base de los cuales se propone para su adopción por la Conferencia de las Partes de Ramsar una resolución relativa a la importancia de la inclusión de los humedales en la planificación del uso de la tierra, aclaran con más detalle esas cuestiones.

3. El primero de esos dos estudios monográficos se refiere a St. Lucia, en la costa oriental. El lago de St. Lucia es el mayor lago costero y sistema de humedales del continente africano. Está amenazado por el intento de un consorcio minero internacional de extraer en gran escala minerales pesados del cordón de dunas que separa el sistema lacustre del mar. En el lago de St. Lucia se encuentra también el sitio de Greater St. Lucia Wetland Park. El otro estudio monográfico se refiere a Saldanha, en la costa occidental, en donde el establecimiento de una acería y de las explotaciones industriales conexas está planteando una grave amenaza para el sistema acuático y de humedales Saldanha/Langebaan. Saldanha/Langebaan es la mayor cala de la costa sudafricana. En ella está situado también el West Coastal National Park.

4. En Saldanha y St. Lucia, la planificación estratégica global del uso de la tierra como referencia para las evaluaciones del impacto ambiental ha sido insuficiente. Tampoco se ha prestado suficiente atención a las enormes necesidades de agua de las industrias en cuestión, que tienen graves consecuencias para los ríos, el flujo de aguas subterráneas y la preservación de las funciones de los humedales. El Gobierno sudafricano, consciente de esas deficiencias, solicitó la asistencia de la Oficina de Ramsar, que proporcionó asesoramiento en los procesos de adopción de decisiones en relación con el desarrollo industrial en St. Lucia y Saldanha.

5. Al final del documento se presenta un proyecto de resolución sobre planificación del uso de la tierra en las regiones costeras, así como recomendaciones para que los tramos rectos del curso inferior del Berg River – una fuente de corrientes de aguas subterráneas que alimentan el sistema Saldanha/Langebaan – sea declarado sitio Ramsar. En otra recomendación se propone que el Estuario del Berg River y el sistema Saldanha/Langebaan sean incluidos en el Registro de Montreux con el fin de potenciar la conservación y el uso racional de esos sistemas de humedales.

"Evaluación Económica y su Papel en el Uso Racional de Humedales" (resumen)

Mike Acreman, Instituto de Hidrología, Reino Unido

1. Actualmente, la mayoría de las decisiones de planificación y desarrollo se adoptan, al menos en parte, por razones económicas, lo que hace imperativo asignar a los bienes y servicios proporcionados por los humedales un valor cuantitativo si se quiere dar preferencia a la conservación de los humedales sobre otros usos posibles de la propia tierra o del agua que sustenta al humedal. En el caso de gran número de productos, como el pescado o la madera, hay un mercado mundial que permite calcular fácilmente el valor del humedal. El valor de determinadas funciones de los humedales, como la mejora de la calidad del agua, puede calcularse tomando como base el costo de las obras de tratamiento que serían necesarias para realizar el mismo proceso. En cambio, resulta mucho más difícil valorar la diversidad biológica o la belleza estética de los humedales, al no existir ningún mercado de esos bienes. Otro importante obstáculo es el hecho de que los países en desarrollo tropiezan con importantes problemas para hacer suyos los beneficios mundiales de la conservación de los humedales, como la diversidad biológica. En consecuencia, es necesario reforzar e incorporar sistemas de apropiación como el canje de "deuda por naturaleza".

2. Aunque en todo el mundo se han realizado diversos estudios de valoración económica de los humedales, y los economistas han elaborado metodologías para evaluar los aspectos más intangibles del medio ambiente, como la posibilidad de disfrutar de un medio agradable o la belleza estética, no se ha sintetizado a partir de esas obras un enfoque común que haya demostrado su utilidad global para la conservación y la gestión de los humedales a escala mundial. Con el fin de abordar esa cuestión, Ramsar, con ayuda financiera del Departamento del Medio Ambiente del Reino Unido, ha encargado la elaboración de una obra que brinde a los responsables políticos y a los planificadores orientaciones sobre las posibilidades de realizar una valoración económica de los humedales. La obra facilita detalles sobre diversas técnicas y da orientaciones sobre la planificación y la realización de estudios, así como sobre la forma de incorporar los resultados a un marco general de adopción de decisiones. Para aclarar la utilización de los diversos métodos de valoración de forma práctica, se ofrecen seis ejemplos de estudios de valoración de humedales, correspondientes a humedales de distintos tipos, en los que se ha utilizado una serie de métodos de valoración diferentes y que se refieren a distintas zonas geográficas. Se trata de la llanura aluvial de Hadeija-Nguru en Nigeria Septentrional, los humedales de la pradera en América del Norte, la región húmeda de Norforlk Broads y de Escocia en el Reino Unido; la reducción del nivel de nitrógeno mediante la utilización de los humedales en Suecia; los humedales costeros en los Estados Unidos y la conservación de manglares en Indonesia.

3. Se formulan además recomendaciones para futuras acciones, en las que se subraya la necesidad de: realizar estudios de valoración económica de sitios concretos; conseguir una colaboración interdisciplinaria en los estudios; promover la capacitación y la creación de capacidad institucional de los responsables políticos, los planificadores, los encargados de la gestión de los humedales y los economistas; realizar investigaciones sobre la teoría y la práctica de la valoración económica; y establecer redes para el intercambio de ideas y de experiencias en lo que respecta a la aplicación de métodos de valoración.

"Evaluacion del Impacto Ambiental: Elaboración de Directrices para la Aprobación de Proyectos por parte de la Convención de Ramsar" (resumen)

David Pritchard, BirdLife International, Reino Unido

1. En torno a las técnicas utilizadas en los procesos de evaluación formal de las probables consecuencias ambientales de los proyectos de desarrollo, como instrumento auxiliar para la adopción de decisiones, se ha desarrollado un enorme sector de actividad. En las políticas y en la legislación nacionales e internacionales se encuentran cada vez más referencias expresas a esos procesos, como supuesto componente del desarrollo sostenible. En cambio, las prácticas difieren sensiblemente en todo el mundo, y hasta la fecha no ha habido ningún intento de codificar principios o normas susceptibles de adopción a escala mundial y que puedan ser útiles para alcanzar el objetivo del "uso racional" de los humedales.

2. En los debates que se mantuvieron al respecto en la Conferencia Internacional sobre los Humedales y el Desarrollo, celebrada en Selangor, Malasia, en octubre de 1995, se llegó a la conclusión de que, aunque la EIA puede hacer importantes aportaciones al uso racional y a la conservación de los humedales, adolece actualmente de falta de coherencia y de una aplicación deficiente. La EIA suele presentar insuficiencias en lo que respecta a su integración, al apoyo de que goza, a sus posibilidades a largo plazo, a su apertura y a la disponibilidad de la información necesaria. Se suele hacer referencia a la limitación que entrañan los costos, pero en realidad esa limitación consiste con frecuencia en la inexistencia de una evaluación cabal de los costos. Los costos de una EIA deficiente pueden ser considerables, y no cabe duda de que es necesario mejorar la calidad técnica, pero incluso una EIA excelente tendrá escasa o ninguna influencia si la política de alto nivel no da un peso importante a los valores ambientales. Es necesario prever el examen al mismo nivel, la colaboración con las comunidades locales, la supervisión, la verificación y la revisión. Para ello pueden ser útiles directrices internacionales sobre las normas, que sería conveniente que fueran adoptadas en el marco de la Convención de Ramsar. Una concepción más holística de los sistemas de gestión ambiental o el concepto de gestión ambiental integrada pueden desempeñar un importante papel a este respecto.

3. Se cuenta ya con gran número de obras técnicas sobre la EIA, incluidas orientaciones prácticas. Muchos países e instituciones internacionales aplican ya sistemas efectivos de EIA. Con todo, la coherencia universal de las normas y enfoques y la promoción del intercambio de experiencias sobre buenas prácticas pueden contribuir a impedir la "exportación" de actividades causantes de daño a los lugares en que son objeto de un examen menos riguroso y a reducir las desventajas competitivas de la regulación.

4. El análisis de los textos ya adoptados por la Conferencia de las Partes, especialmente en lo que respecta a las directrices sobre la aplicación del concepto de "uso racional" pone de manifiesto un cierto grado de coincidencia sobre algunos de los postulados fundamentales de la EIA, aunque esa coincidencia no haya cristalizado en un texto concreto. Se presentará un resumen, en el que se hace también referencia al Plan Estratégico de la Convención y a las conclusiones de recientes reuniones regionales.

5. Se presentarán también para su examen directrices que se propone que sean adoptadas por las Partes. Los principios recomendados de buena práctica abarcarían los siguientes aspectos: a qué debe aplicarse la EIA; en qué circunstancias resulta apropiada; cómo pueden establecerse sistemas de EIA; en qué momento debe realizarse la EIA; quiénes deben participar en ella, y cómo; qué tipo de descripción del entorno se requiere; cuáles son los impactos potenciales que deben ser evaluados; cómo deben evaluarse los impactos potenciales y cómo pueden analizarse los medios de evitar, reducir, atenuar y compensar esos impactos; y cómo deben utilizarse los resultados de la evaluación.

PAPERS / EXPOSES / PRESENTACIONES

(in their original language only / dans la langue d'origine uniquement / solo en el idioma original)

"Status of National Wetland Policy Development in Ramsar Nations"

Clayton D. A. Rubec
Canadian Wildlife Service, Environment Canada

One of the obligations that Contracting Parties accept in acceding to the Ramsar Convention is consideration of the formulation of national policies that promote wetland conservation. In the few national examples completed to date, this has been observed potentially to involve a lengthy and complex process. Political, interjurisidictional and financial constraints hinder the formulation of such policies, in addition to social and economic factors that continue to contribute to wetland loss while the policy process is underway.

With this in mind, the Conferences of the Contracting Parties to the Ramsar Convention have recommended that:

> *It is desirable that all Contracting Parties work towards the formulation of comprehensive national [wetland] policies in the long term and that such policies be formulated in whatever manner is appropriate to their national institutions.*

One of the recommended actions under the Guidelines for the Implementation of the Wise Use Concept developed by the Ramsar Convention is for Contracting Parties to formulate national wetland policies as an important step toward facilitating conservation and wise use of wetlands. In 1993, the 5th Meeting of the Conference of the Contracting Parties, held in Japan, emphasized the need for Parties to get on with the implementation of these Guidelines in a systematic manner at local, national and international levels.

This paper provides a brief overview of the status of the development and implementation of national wetland policies and national wetland strategies or plans in the nations that are Contracting Parties to the Ramsar Convention. This information was compiled for presentation at the 6th Meeting of the Conference of the Contracting Parties in Brisbane, Australia, in March 1996.

The consideration of environmental impact assessment, financial institutions, land use and regional planning, and economic valuation of wetlands in developing these national wetland policies is the theme of Technical Session A at the 1996 Meeting of the Conference of the Contracting Parties in Australia. One of the proposed products of this session is a Conference Recommendation on "A Framework for National Wetland Policy Development and Implementation"

Background on the Wise Use Guidelines for wetland policy development

The original text of the Ramsar Convention developed in 1971 (Article 3.1) stipulates that "The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List [of Wetlands of International Importance] and, as far as possible, the wise use of

wetlands in their territory." The "wise use", it was noted, applies not only to Ramsar listed sites, but to all wetlands in the territory of the Contracting Party.

A definition of wise use as "sustainable utilization for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem", and initial Guidelines on the Wise Use of Wetlands were adopted for the first time at the 3rd Meeting of the Conference of the Contracting Parties in Canada in 1987. Recommendation 3.3 calls on the Contracting Parties to use this definition of wise use and the guidelines included in the annex to that recommendation.

At the 4th Meeting of the Conference of the Contracting Parties, held in Switzerland in 1990, the Parties adopted the "Guidelines for the Implementation of the Wise Use Concept" as Recommendation 4.10. This meeting reconfirmed that the wise use concept extends to all phases of wetland conservation including:

- national wetland policy development;
- improvement of institutional and government organizational arrangements;
- review of existing and future legislation and other national policies affecting wetlands;
- development of awareness and knowledge of wetland functions and values;
- inventory and economic valuation of wetlands for setting site management priorities; and
- establishment of actions on a site-specific basis such as legal protection mechanisms and habitat restoration.

Review of the status of wetland policies by Ramsar region

An overview is presented below on the status of national wetland policy development within the seven Ramsar Regions by the 92 nations that are Ramsar Convention Contracting Parties. The seven Ramsar regions are:

North America	3 nations
Neotropics	15 nations
Eastern Europe	14 nations
Western Europe	20 nations
Asia	15 nations
Oceania	3 nations
Africa	22 nations

This overview is based upon the information derived from regional reports prepared for the September 1995 Meeting of the Ramsar Standing Committee and the National Reports prepared for the March 1996 Ramsar Conference in Australia. Information on the status of implementation of the Wise Use Guidelines in each nation was subsequently summarized by Ramsar Bureau staff and included in the respective Ramsar regional reports prepared for the March 1996 Conference. These regional reports, circulated in February 1996 to Contracting Parties in advance of the Australia Conference, are the source documents for the analysis presented here. Hence, Tables 1 to 6 presented here are based on the summary information in these regional reports without referral to the original National Reports.

Any omissions or errors included here are due to the limitations in the available summary information plus the short time available to the author to prepare this material. The Ramsar regional reports constitute seven Information Documents of the 6th Meeting of the Conference of the Contracting Parties (INFO 6.7, 6.8, 6.9, 6.10, 6.11, 6.12 and 6.13).

The following data by Ramsar Contracting Party and region was compiled and is presented in Tables 1 to 6 at the end of this paper:

- Contracting Party: Name of the national state;
- Policy Initiated/When: This records whether a national wetland policy is completed (yes or no) and the date; if "under consideration, "under development" or in "draft" this is stated. If the status of a national policy is not known it is listed in the table as a blank (---).

- National Wetland Plan/Strategy: Where a national wetland strategy or plan of some kind has been initiated in advance of, instead of, or in addition to a national wetland policy, this is noted as "yes" or "in draft" and the date. Otherwise, where no information is available, a blank (---) is included.
- Mechanisms: The mechanisms in use or proposed by the Contracting Party to implement national wetland strategies or plans are listed in abbreviated format in this section of the tables.

Regional overviews

North America: Information on the three Ramsar nations in the North America Ramsar Region is summarized in Table 1. All three of these states have national wetland policies: *in place* (Canada, United States) or *under consideration* (Mexico). All three of these states also indicate they have a national wetland plan or strategy: *in place* (Canada, United States), or *in draft* (Mexico).

Mechanisms in use in North America include Federal and Provincial Wetland Policies, Federal and State Programs, Federal and State Wetland Protection Legislation, a Continental Multilateral Waterfowl Habitat Management Program, and National Wetland Action Plans.

Neotropics: Information on the 15 current Ramsar nations in the Neotropics Ramsar Region (which includes South America, Central America and the Caribbean) is summarized in Table 2. Only two of these states have national wetland policies: *in draft* (Trinidad and Tobago), or *under development* (Peru). However, nine of these states indicate they have a national wetland plan or strategy: *in place* (Costa Rica, Ecuador, Guatemala, Panama, Uruguay, and Venezuela), *in draft* (Peru, Trinidad and Tobago), or *under consideration* (Bolivia).

Mechanisms in use in the Neotropics Region include a Nature Conservation Strategy, National Wetland Conservation Legislation, Mangrove Protection Legislation, Protected Areas Legislation, Environmental Impact Assessment and Habitat Conservation Legislation, National Wetland Program and Strategy, National Policy on Protected Areas, Sectoral Legislation, and inclusion of Wise Use in the Constitution.

Eastern Europe: Information on the 14 current Ramsar nations in the Eastern European Ramsar Region is summarized in Table 3. Four of these states have national wetland policies: *in draft* (Slovenia), *under consideration* (Armenia), or *proposed* (Czech Republic, Slovak Republic). Ten of these states indicate they have a national wetland plan or strategy: *in place* (Bulgaria, Estonia, Latvia, and Slovenia), *in draft* (Hungary, Poland), under development (Armenia, Lithuania, Slovak Republic), or *under consideration* (Russian Federation).

Mechanisms in use in Eastern Europe include a National Wetland Action Plan, National Wetland Conservation Strategy, Nature Conservation Act, Environmental Policy Plan, National Environmental Protection Strategy, National Wetland Management Plan, Federal Wetland Strategy, Nature Conservation Strategy, and Nature Protection Legislation.

Western Europe: Information on the 20 current Ramsar nations in the Western European Ramsar Region is summarized in Table 4. Two of these states have national wetland policies: *in place* (Iceland, which appears to have established, in 1978, the world's first wetland policy), or *under development* (Austria). However, 16 of Western Europe's 20 Ramsar states indicate they have a national wetland plan or strategy: *in place* (Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, The Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey, and the United Kingdom).

In this region, mechanisms in use include a National Nature Plan, Nature Protection Act, Conservation Policy, Protection and Restoration Plan, Bog Conservation Program, National Wetland Plan, National Mire Conservation Plan, Landscape Protection Act, National Environmental Action Plan, Nature Policy Plan, National Water Plan, site-specific legislation, sectoral policies, and various federal/state programs.

Asia: Information on the 15 current Ramsar nations in Asia Ramsar Region is summarized in Table 5. Five of these states have national wetland policies: *under development* (Indonesia, Malaysia, Thailand), *under consideration* (Cambodia), or *proposed* (Pakistan). Five of these Asian states indicate they have a national wetland plan or strategy: *in place* (China, India, Malaysia) or *in draft* (Philippines, Sri Lanka).

Mechanisms in use in Asia include a Wetland Protection Action Plan, National Wetland Action Plan, National Wetland Conservation Strategy, and site specific management plans.

Oceania: Information on the three current Ramsar nations in the Oceania Ramsar Region is also summarized in Table 5. Only one of these states has a national wetland policy *in draft* (Australia). Two of these states also indicate they have a national wetland plan or strategy: *in place* (New Zealand), or *in draft* (Australia).

Mechanisms in use in the Oceania Region include a Commonwealth (Federal) Wetland Policy.

Africa: Information on the 22 current Ramsar nations in the Africa Ramsar Region is summarized in Table 6. Nine of these states indicate they have national wetland policies: *in place* (Senegal, Uganda), *in draft* (South Africa, Zambia), *under development* (Burkina Faso, Kenya), *under consideration* (Tunisia), or *proposed* (Egypt, Togo). Ten of these states also indicate they have a national wetland plan or strategy: *in place* (Guinea- Bissau, Morocco, Namibia), *under development* (South Africa), *under consideration* (Ghana), or *proposed* (Algeria, Burkina Faso, Gabon, Kenya, Niger).

Mechanisms in use in the Africa Region include a National Environmental Policy, National Environmental Strategy, National Conservation Strategy, National Biodiversity Strategy, Forestry Legislation, Agricultural and Forestry Sectoral Policies, Nature Conservation Policy, National Land Use Policy, and Rural Code Legislation.

Global summary

As of March 1996, a total of 26 of the 92 Ramsar Contracting Parties indicate they are engaged in development or implementation of national wetland policies. These are distributed as follows by the seven Ramsar Regions: North America (3), Neotropics (2), Eastern Europe (4), Western Europe (2), Asia (5), Oceania (1), and Africa (9).

Only ten Ramsar Contracting Parties have reported that wetland policies have been: adopted (Canada, Iceland, Senegal, Uganda, the United States of America) or are in draft form (Australia, Slovenia, South Africa, Trinidad and Tobago, Zambia). An additional 16 nations indicate that a national wetland policy is under development, under consideration or proposed. Several nations currently considering Ramsar Convention accession, such as Jamaica, also have national wetland policies in draft form. Regrettably, some 66 Ramsar nations have not yet indicated national wetland policy is planned in any fashion.

It is apparent, however, that the majority of Ramsar nations have initiated or are considering putting other national wetland conservation measures in place instead of, in addition to, or perhaps in advance of development of national wetland policies. Some 55 out of the 92 Ramsar Contracting Parties report they have national wetland strategies or plans: adopted (35), under development or in draft form (12), or proposed (8).

These 55 nations with national wetland strategies or plans underway are distributed by Ramsar Regions as follows: North America (three out of the three Contracting Parties), Neotropics (nine out of current 15 Contracting Parties), Eastern Europe (10 out of the current 14 Contracting Parties, Western Europe (16 of current 20 Contracting Parties), Asia (five out of the current 15 Contracting Parties), Oceania (two out of current three Contracting Parties), and Africa (10 out of the current 22 Contracting Parties).

Next steps

Draft Recommendation 6.9, entitled "A Framework for National Wetland Policy Development and Implementation"", is to be considered at the 1996 Meeting of the Conference of the Contracting Parties. It is hoped that the Framework Report proposed in this Recommendation will serve to create a valuable source document for the majority of Ramsar nations not yet involved in, or in the process of, considering national wetland policy.

While no specific format is yet established, the author envisages the following would be included in this Framework Report:

- specific examples of existing nationally-adopted wetland policies drawn from nations with different political and governmental institutions and with significantly different wetland types and issues facing wetland conservation.
- an outline of major elements and sections for the text of a national wetland policy and consideration and guidance for writing such a policy, including creating a package of policy source materials.
- information on the nature and value of governmental and public consultation processes that can contribute to the successful completion of the policy.
- information and guidance drawn from national and sub-national examples of wetland policies now being implemented.

The production of this Framework Report, it is proposed, will be supported by interested Contracting Parties through financial and staff time contributions. The Ramsar Bureau will act as the project facilitator and the final document, it is envisaged, would be a partnership publication led by the Ramsar Bureau. It is hoped this project can be completed within two years of the Australia Conference.

Source documents

The following documents were circulated for review at the 6th Meeting of the Conference of the Contracting Parties, March 19-27, 1996, in Brisbane, Australia. They are the main source materials for this paper.

INFO 6.7 *Overview of the Implementation of the Convention in the Africa Region.* 19 pages and Addendum.
INFO 6.8 *Overview of the Implementation of the Convention in the Asia Region.* 14 pages.
INFO 6.9 *Overview of the Implementation of the Convention in the Eastern Europe Region.* 23 pages.
INFO 6.10 *Overview of the Implementation of the Convention in the Neotropical Region.* 17 pages.
INFO 6.11 *Overview of the Implementation of the Convention in the North American Region.* 4 pages.
INFO 6.12 *Overview of the Implementation of the Convention in the Oceania Region.* 8 pages.
INFO 6.13 *Overview of the Implementation of the Convention in the Western Europe Region.* 36 pages.
REC. 6.9 *Recommendation on a Framework for National Wetland Policy Development and Implementation.*

The following Regional Reports tabled at the 16th Meeting of the Ramsar Standing Committee September 11-14, 1995, in Brisbane, Australia, were also used as source documents for this paper.

North America Regional Report. 5 p.
Africa Regional Report. 7 p.
Asia Regional Report. 7 p.

Table 1: Wetland Policy in North America

Contracting Party	Policy Initiated/When?	National Wetland Plan/Strategy	Mechanisms
Canada	Yes/1991	Yes	Fed./Prov. Policies/Programs
Mexico	Under consideration	Yes/Draft	National Action Plan
United States	Yes	Yes	Fed./State Leg./Programs

Source: 1996 National Reports and 1995 Regional Report

Table 2: Wetland Policy in the Neotropical Region

Contracting Party	Policy Initiated/When?	National Wetland Plan/Strategy	Mechanisms
Argentina	No	No	Wise Use in Constitution
Bolivia	No	Under consideration	National Conservation Strategy

Brazil	---	---	
Chile	No	No	
Costa Rica	No	Yes	National Conservation Wetland Legislation
Ecuador	No	Yes	Mangrove Legislation
Guatemala	No	Yes	Protected Areas Legislation
Honduras	---	---	
Panama	No	Yes 1994/95	EIA/Habitat Conservation Legislation
Paraguay	---	---	
Peru	Under development	Draft	National Wetland Program/Strategy
Suriname	---	---	
Trinidad and Tobago	Draft 1996	Draft 1996	
Uruguay	No	Yes/1994	Sectoral Legislation
Venezuela	No	Yes	National Policy on Protected Areas

Source: 1996 National Reports and 1995 Regional Report

Table 3: Wetland Policy in Eastern Europe

Contracting Party	Policy Initiated/When?	National Wetland Plan/Strategy	Mechanisms
Armenia	Under consideration	Under development	---
Bulgaria	No	Yes/1993	National Wetland Action Plan
Croatia	---	---	
Czech Republic	Proposed/1996	---	---
Estonia	No	Yes/1996	National Wetland Conservation Strategy
Hungary	No	Yes/draft 1995	Nature Conservation Act
Latvia	No	Yes/1995	Environmental Policy Plan
Lithuania	No	Under development	National Environmental Protection Strategy
Poland	No	Draft/1995	National Wetland Management Plan
Romania	---	---	
Russian Federation	No	Under consideration /1994	Federal Wetland Strategy
Slovak Republic	Proposed/1996	Under development	---
Slovenia	Draft/1995	Yes	Nature Conservation Strategy
Yugoslavia			
(Serbia/ Montenegro)	No	No	Nature Protection Legislation

Source: 1996 National Reports

Table 4: Wetland Policy in Western Europe

Contracting Party	Policy Initiated/When?	National Wetland Plan/Strategy	Mechanisms
Austria	Yes/1995	Yes/1995	Federal/State Approach
Belgium	No	Yes/1994	Nature Plan
Denmark	No	Yes/1992	Nature Protection Act
Finland	No	Yes	Conservation Policy
France	No	Yes/1995	Protection/Restoration Plan
Germany	No	Yes/1991	Lubeck Principles
Greece	--	--	
Iceland	Yes/1978	Yes	Site-Specific Legislation
Ireland	---	Yes	Bog Conservation Program
Italy	No	Yes/1995	National Wetland Plan
Liechtenstein	---	---	
Malta	---	---	
Netherlands	No	Yes/1990	Nature Policy Plan
Norway	No	Yes	Planning/Sectoral Policies
Portugal	No	Yes	National Water Plan
Spain	---	---	
Sweden	No	Yes	National Mire Plan
Switzerland	No	Yes/1995	Landscape Protection Act
Turkey	No	Yes	National Environmental Action Plan
United Kingdom	No	Yes	Sectoral Planning/Policies

Source: 1996 National Reports

Table 5: Wetland Policy in Asia/Oceania

Contracting Party	Policy Initiated/When?	National Wetland Plan/Strategy	Mechanisms
Armenia	---	---	
Bangladesh	---	---	

Cambodia	Under consideration	No	
China	No	Yes/1994	Wetland Protection Action Plan
India	No	Yes	Action Plan/Management Plans
Indonesia	Under development	---	
Iran	---	---	
Japan	No	---	
Jordan	---	---	
Malaysia	Under development	Yes/1995	
Nepal	No	---	
Pakistan	Proposed	---	
Philippines	No	Draft/1995	National Wetland Action Plan
Sri Lanka	No	Draft/1995	National Wetland Conservation Strategy
Thailand	Under development	---	
Australia	Yes/Draft 1996	Draft 1996	Federal Wetland Policy
New Zealand	No	Yes	
Papua New Guinea	No	---	

Source: 1996 National Reports and 1995 Regional Report

Table 6: Wetland Policy in Africa

Contracting Party	Policy Initiated/When?	National Wetland Plan/Strategy	Mechanisms
Algeria	No	Proposed	National Environment Policy
Burkina Faso	Under development	Proposed	Forestry Legislation
Chad	No	No	
The Comoros	No	---	
Egypt	Proposed	---	National Conservation Strategy
Gabon	No	Proposed	National Biodiversity Strategy
Ghana	No	Under consideration	
Guinea	---	---	
Guinea-Bissau	No	Yes	Agricultural/Forestry Sectoral Policy
Kenya	Under development	Proposed	
Mali	No	No	
Mauritania	---	---	
Morocco	No	Yes	National Conservation Policy
Namibia	No	Yes	National Land Use Policy
Niger	No	Proposed	Rural Code
Senegal	Yes	---	
South Africa	Draft/1995	Under development	
Togo	Proposed/1996	---	
Tunisia	Under consideration	---	
Uganda	Yes/1995	---	
Zaire	No	No	National Environment Strategy
Zambia	Draft/1995	---	

Source: 1996 National Reports and 1995 Regional Report

"Implementation of National Wetlands Policies: Opportunities and Challenges"

Paul Mafabi
Ministry of Natural Resources, Uganda

The concept of wise use of wetlands as contained in Article 3.1 of the Convention on Wetlands stipulates that "the Contracting Parties shall formulate and implement their planning so as to promote the conservation of wetlands included in the List, and as far as possible the **wise use** of wetlands in their territory".

Although the initial focus of the Convention was on conservation of wetlands especially as waterfowl habitats, we now recognize that wetland conservation is not just about birds but about human survival and welfare as well as wildlife survival. Therefore, we now have to answer tough questions such as:

- are wetlands more important than industries?
- whose interests are we fighting for?
- how about a person who builds a house in a wetland as the only means of survival?
- what is the minimum distance from the edge of a wetland that should be allowed for development to take place?
- how much rice can be grown before a wetland changes its ecological character?
- what about those wetlands which are privately owned. Should we be concerned with their conservation and management?

The answers to these questions are indeed difficult, but they are not insoluble.

What is a wetlands policy ?

There is perhaps no conventional definition of a wetland policy since the concept is new. However, the following serve to describe what a wetlands policy is or should be.

- A consensus, because it involves consultations with several stakeholders and user groups. Each of these groups have their interest, but a policy should provide a compromise among these interests;
- A process, because it takes time to develop a policy and involves several coordinated activities. As a process it is continuous because as more information is gathered the policy needs to be updated;
- A tool for action, as it provides strategies for implementing certain actions;
- A commitment to wetland conservation, because the policy is agreed and adopted at the highest political level;
- A framework that embraces several interests and mechanism for management of diverse wetland resources;
- A guide to wetland resource management, as it spells out objectives, principles and strategies as well as providing management guidelines.
- It is thinking globally and acting locally, because wetland conservation is a global concern whereas the action to protect wetlands has to be taken at the local level with local support.

More importantly, however, I think a policy is a document that contains proposals transformed into principles and strategies.

Why National Wetlands Policies ?

There have been several arguments as to whether a country should develop a national wetlands policy separate from an environmental policy. There are even further arguments that perhaps the existing policies on some aspects of the environment, such as water, land, etc., are adequate. The experience in Uganda is that clearly these are not adequate.

Traditionally wetlands provide a number of benefits and services to local communities as well as to society as a whole. Wetlands also offer global benefits such acting a refugia to migratory birds as well as carbon sequestration. Despite the above-mentioned benefits, wetlands in the past were thought of "wastelands" and

therefore of no socio-economic value. This attitude has led to a situation where wetland exploitation has been so intense and so wanton, resulting in several problems.

With a rising human population in many parts of Africa and elsewhere, the pressure upon natural resources is great. In particular, as a result of many years of trying to increase agricultural production, only a fraction of the once extensive forests remains while the hilltops are now subjected to intensive cultivation and livestock rearing.

Over the past few years, the pressure exerted on existing cultivated land shifted from uplands to lowland areas. Much of this pressure has been concentrated upon wetlands, especially swamps and flood plains. The main problems facing wetlands are:

- Drainage for agriculture, settlement, etc.;
- Unsustainable conversion to agricultural lands;
- Over-harvesting of wetland materials; and
- Pollution through dumping, mineral spills, etc.

The above problems lead to a number of consequences, including: water loss, reduced run-off control, soil deterioration, traditional use loss, restricted ownership of the resource, reduced economic flexibility, crop pest risks and health problems. These vary in magnitude depending on the rate of wetland modification and other factors.

Nevertheless, many of these problems have been realized and often some of the benefits are realized after only wetlands have been lost irreversibly. This calls for urgent action. Such action includes the formulation of national wetland policies. The following are some of the issues associated with the above problems:

Socio-economic issues

Socio-economic issues revolve around tenure and distribution of benefits. Their economic potential arises from the fact that they are a vital water resource and can also have high productivity if properly managed. However, there is rising concern about the long-term viability of the present use of wetlands, the extent to which rural communities benefit from the new utilization and the nature and consequences of the environmental impacts of wetland drainage. Specifically, there is concern that:

- drainage is only a short-term solution to increased agricultural production and may, by disrupting vital ecological processes, make it difficult to develop long-term solutions;

- the economic benefits from wetland drainage have in many instances accrued only to a relatively small number of wealthy individuals, while removing the option of multiple use of these wetlands by the rural communities in times of need;

- the drainage of wetlands has led to disruption of water supply of towns or villages, to reduced quality of water in others, and to changes in the micro-climate of some valleys, decreasing humidity and raising ambient temperatures.

However, it is important to note that the fertility in a wetland, if drained, is not permanent, because it depends on the amount of previous accumulation of decaying organic matter regulated by the original flow of water and fertility of the catchment area, among others.

Even if a wetland's soil is fertile, it will not remain so if drained because wetland soils are formed under peculiar chemical conditions of the waterlogged environment. Under drained conditions, the soils turn acidic, making plant growth difficult or impossible. Also, the drying out of the soils accelerates decomposition to yield a dust or very shrunken soil layers.

Land tenure issues

Since most wetlands are common property resources, their ownership is not clearly defined. Recent trends involve individual ownership in some cases and leases in others. This has resulted in restricted ownership of the wetlands resource, denying the wider community the option of using wetlands at times of great need (during excessive droughts, and when they have to leave their uplands to fallow). Private ownership also raises the question of imposing restrictions on use of such wetlands.

Distribution of wetland benefits

Wetlands provide a number of benefits at the local (community), national and global levels. Previously benefits accrued to a wider community through harvesting of material or the moderation of micro-climates. However, with modifications, benefits are now restricted to a few individuals at the community level. Some of the national and global benefits, such as carbon sequestration, have diminished or been lost all together.

Reduced economic flexibility

Although benefits accruing from wetlands are high in the first few years, they tend to decline very rapidly thereafter. The reasons for this are not very clear, but it is probably due to water borne dependency of wetlands, and fertility is dependent upon an inflow if organic matter and sediment or on retaining a high water table. Reducing the diversity of productive activity limits the options for adjusting to new economic conditions when they occur later on.

The answers to the above questions necessitate making a decision, especially at a political level. This means wetland conservation and management is about making decisions, and for us as advocates of wetland conservation, these can be very hard decisions indeed.

In summary the following are some of the reasons why there is a need to formulate separate national wetland policies:

- Present policies are sectoral and inflexible and do not give wetlands adequate coverage. Some of the policies either directly or indirectly lead to wetland modification;
- Many of the policies and laws are obsolete and no longer suited for the changed circumstances.
- Wetlands are a multi-sectoral resource. One resource with many interests. A policy is therefore necessary to harmonize the various interests.
- Wetlands are an ecological entity and not wastelands as is often perceived. They have important functions and values that need to be protected and conserved. Some of the functions are inter-related to other aspects of the environment.
- There is an inter-relationship between various components of wetlands.
- The process of making a wetlands policy creates vital awareness about wetlands and gives them a new lease of life.
- Developing national wetland policies offers no new commitments. If anything it helps to mobilize the communities and empower them to manage their wetland resources.

Progress towards formulation of national wetland policies

A lot of progress has so far been made regarding formulation of national wetland policies. Actions range from adoption of separate wetlands policies to integration of wetland concerns and issues in land use planning or environmental plans and biodiversity strategies. As far as Africa is concerned, details of policy formulation is given in Box 2.

The process of policy formulation can be very elaborate and laborious. However, using Uganda as an example, the following key processes can be described. Refer to figure in transparency.

Process of formulating national wetland policies – the Ugandan Experience

There are various ways through which national wetland policies can be developed. These largely depend on the local circumstances prevailing in each country. It is important to note that a formulation has to involve a

process approach. An example of such approach is given in Box 3. The main elements of such a process include:

- Awareness
- Consultations with relevant stakeholders
- Review of policies and legislation relevant to wetland management
- Endorsement and approval by cabinet or parliament
- Formulation of an implementation strategy and action plan

Opportunities for implementing national wetland policies

Although formulation of national wetland policies has been slow, it is recognized that many Contracting Parties are moving towards formulation and implementation of such policies either separately or as part of national environmental or biodiversity strategies. A number of activities already exist and others are planned which could provide an opportunity for implementing national wetland policies. These include:

Political will. Political will is necessary to guide natural resource use through the resolution of conflicts and ensure a fair distribution of benefits. This therefore provides an opportunity for influencing decisions at national, district and local levels.

Traditional values. Wetlands provide a number of benefits contrary to the belief that they are wastelands. Wetland resources have traditionally been utilized by the people as building materials, crafts and furniture, hunting and fishing. The biggest problem, however, is that some of the traditional benefits from wetlands do not carry a high monetary value compared to introduced ones. Nevertheless the potential is high and remains largely untapped. For example, fish farming, natural fish stocks and crafts are some of the activities which could provide high returns if properly managed. There are also possibilities for livestock grazing, wildlife management. Other options include fish with rice, ducks with fish, etc.

Sectoral policies. Some sectoral policies, such as water, fisheries, offer an opportunity for implementing wetland policy because of the conservation and sustainable use principles of such resources.

Awareness. As the public becomes aware of the values and functions of wetlands they begin to appreciate the need for their wise usage. The impact of wetland modification often affects the less advantaged groups.

Challenges for implementation

A number factors are likely to influence the successful formulation and implementation of national wetland polices. These include:

- valuation systems
- fragility of wetland soils
- population growth (3.4% p.a.)
- inter-sectoral inconsistencies
- economic policies and marketing
- management capacity
- poverty
- lack of awareness
- lack of appropriate technology
- sustenance of political will
- inadequate and inappropriate technical expertise
- lack of financial resources
- influence of sectoral policies, including policy fatigue

The formulation of National Wetlands Policies is central to the wise use of wetlands. This is borne from the fact that wetlands resources are or will be used in the future and, unlike other ecosystems, their use needs to

be regulated in order to assure that they provide benefits for the present and future generations. This concept of wise use involves, among other things, formulating national wetland policies. Although the concept is gaining popularity, not many Contracting Parties have put it in practice, and the few countries that have formulated wetland policies in the process of implementing.

Valuation of wetlands. What value is attached to wetlands? First, there has been a traditional lack of recognition of wetlands as beneficial except as wastelands. In previous times when there was enough and easily cultivatable land, the extra work required to exploit waterlogged areas was too great to bother with. This has led to the second general problem that the exploitations have often been unbalanced, excessive, and inappropriate for the location.

It is important to appreciate that the problems do not arise because of development as such, but because of development which does not take all the requirements of a community into consideration, and is therefore distorted in its aims.

Community perceptions. Community willingness and perceptions. Does the policy create new commitments for the community or not? Do communities see the policy as an impediment to development or as a mechanism for rural development.

Macro-economic factors. The collapse of traditional cash crops, leading to encroachment on wetlands for rice production. There is also the issue of structural adjustment programme (SAP) policies and their impact on wetlands – in particular, the devaluation of currencies and associated issues.

Sectoral policies. Inter-sectoral consistencies, perceptions and interests. How do different sectors perceive wetlands? Agriculture sees them as potential land for agriculture, Fisheries sees them as an area where more fish could be produced. The conservationist sees them as areas with important biological resources which should be conserved for the present and future.

Marginalization. Policy is bound to be marginalized because of lack of monetary value for wetlands. There is a need for clear policy rationale. Policy was developed to resolve conflicts resulting from the many sectoral interests. Many skeptics believe that wetlands are "wastelands" or that common property resources cannot be managed. Perhaps the solution lies in the development of sustainable demonstration activities, showing that the reality is different, which will encourage the acceptance of the policy, especially at the community level.

Institutional issues. One of the biggest issues related to implementation of the wetlands policy is the institutional arrangements. There are fundamental questions such as:

- To whom do wetlands belong at present?
- To whom should wetlands belong?
- How can common property resources best be managed?

The experience in Uganda, as I believe in many other countries, is that natural resources are managed as sectors or boxes. For example, forests are managed by Forest Departments, Water is managed by Water Departments. Wetlands, on the other hand, contain some resources whose management responsibility falls under some of the sectors.

This raises another question of resources, benefits and responsibilities. Responsibility will be guaranteed if the benefits from given resources accrue to the one responsible.

There are many initiatives aimed at developing environment action plans. These include, among others, National Environment Action Plans, National Conservation Strategies, Green Plans, Water Action Plans. But a fundamental question is how far these arrangements address the formulation and implementation of wetland policies. A further question could be what is the appropriate institutional arrangement for wetland management at the national, district, local levels.

Cost of implementation. The cost of implementing national wetland policies is one of the other factors likely to influence the implementation process. Most developing countries are grappling with the problems of poverty, and may not be in a position to commit financial resources for implementation of a wetlands policy. But who should bear the cost of implementation? Government, developers, the local community, or the global community? Since wetlands provide benefits to individuals, societies, nations and the entire world.

A recent meeting in Kampala and Cotonou raised fundamental questions about the values of wetlands. Developed wetlands provide some of the badly-needed revenue to local councils and food to local communities. Therefore, what should be the priority: foods or the environment? The answer to these issues requires government support, commitment and willingness to formulate and implement wetlands policies. External support is inevitable in some cases but to what extent, especially with increasing donor fatigue.

Political support. The availability of political support or the lack of it could greatly influence the formulation and implementation of national wetland policies. Policies are normally developed in response to conflicts, and such conflicts usually remain after the policy has been adopted. There is therefore for harmonization of policies and conflict resolution mechanisms to be put in place.

Management Capacity. Wetlands are dynamic, interdependent, relatively inaccessible resources. They are common property resources and multi-resource systems. A systems approach is necessary to integrate social, economic and resource functions. There is also need for improvement of knowledge of wetland for planning and management purposes.

Externalities. Rate of wetland conversion is high at a local level. There is a tendency to take percentages and to imagine that the impact of wetland loss is not so great. Many wetlands may be destroyed before the policy is effective. Changes agricultural sectors are likely to influence success of implementation.

Natural disasters such as drought, wars – These are inevitable, but could have a big influence on the implementation of wetlands policies. In Uganda, some parts were predominantly livestock grazing areas with bye-laws for the protection of wetlands as grazing areas. However, following civil strife and cattle rustling, these communities were forced to turn to rice cultivation in wetlands as an alternative income generating activity.

Policy fatigue. There are many policies which have been developed or being developed, resulting in what can be described as "policy fatigue". This may make the formulation of a national wetland policy to be viewed as a bother and therefore to be avoided.

Recommendations

The main recommendation is contained in draft Recommendation 6.9 submitted by Canada and Uganda. However, below are some of the specific recommendations:

1) There is need for better understanding of the wetland systems through research;
2) Awareness of wetland values, functions and the need for their wise use;
3) Formulation of wise use policies and the necessary legislation to back up implementation of such policies;
4) Developments should be based on clear EIAs.

Conclusion

For many years, wetlands have been regarded as "wastelands". However, in their natural state, wetlands provide a variety of benefits. These benefits are in jeopardy due to poor management practices. Therefore, there is a need to put in place clear mechanisms for the conservation and management of wetlands. Great strides have been made in developing and implementing national wetland policies. Yet wetlands continue to be degraded for various reasons, including lack of adequate or comprehensive polices. Viable implementation mechanisms to be put in place at the national, district and local levels. But more importantly, there should be no complacency as the task ahead is even greater than we are imagining.

Further reading

Government of Uganda 1995. National Policy for the Conservation and Management of Wetlands Resources. Ministry of Natural Resources

Government of Uganda. 1994. State of the Environment Report for Uganda. Ministry of Natural Resources.

"The Role of Private Sector Wetland Experts in Dutch Conservation Efforts"

Dr. Gerard C. Boere
Ministry of Agriculture Nature Management and Fisheries, Directorate for Nature Management, Division of International Affairs, the Netherlands

"Wetlands" is the general term for a large variety of wet habitats with mainly a high productivity and biodiversity. Worldwide, wetlands are threatened by almost all kinds of human activities, with agriculture and industrial developments as major threats.

Dutch society in general has in many aspects always been involved in wetlands on a national and international level. Nationally, the Netherlands has almost 100 wetlands of international importance within its boundaries (of which 18 of the most important ones have been designated as Ramsar sites and more designations are under way), and many millions of waterbirds (waders, geese, swans, ducks) migrate through or winter in the Netherlands.

Moreover, the continuous battle against the water in keeping the feet dry in the Netherlands has also led to the development of a wide range of expertise in managing wetlands, rivers and coastal areas and the ability to change wetland areas completely on an extremely large scale. The huge floodings of the big rivers in February 1995, with about half a million people having to be evacuated from the central part of the Netherlands, made it very clear again that the Netherlands needs all these skills in order to protect its country and its people.

At present the government, corporate world, scientific institutes, consultants, and NGOs are and have been intensively involved in wetlands worldwide in a way which could be characterized as the **"Dutch Wetlands Paradox."**

It means that on one hand the Netherlands is very active in wetlands conservation, both in the framework of preserving biodiversity via the Programme for International Nature Conservation (PIN) as well as by providing development assistance in order to have a sustainable use of wetlands via the Dutch Development Agency (DGIS). Supporting the activities of the Ramsar Convention has always been an important element in this respect.

On the other hand, Dutch companies, consultants, etc., are involved in large projects regarding wetlands, which in this definition also includes harbour development activities, coastal physical planning, and large constructions such as dams, bridges, etc. These activities altogether in many cases influence wetlands values in a negative way or even destroy them.

On several occasions, the Dutch Government has been criticized in international fora, including the Ramsar Regional Meetings and Conferences of the Parties, about this "wetlands paradox". The problem has been recognized by the Dutch Government when formulating the National Nature Policy Plan, which was approved by the Parliament in 1990. There the policy was formulated to try to achieve conservation and wise use of wetlands within the Netherlands and abroad in the following way:

In relation to wetland activities (polders, harbours, dredging projects, dams, etc.) of Dutch-related agencies, companies, consultants, etc., "the Dutch Government will stimulate that within such projects ecological interests will be taken into account". This is, to be honest, easier to be written than to be implemented.

This brief introduction provides information on a project, which has recently been started by the Ministry of Agriculture, Nature Management and Fisheries in order to address the problem of the "Dutch Wetlands Paradox" with other ministries, the corporate world, NGOs, and consultants.

The Netherlands and wetlands abroad – some data

WWF-the Netherlands, in its annual meeting in November 1993, called upon the Netherlands Government to implement the above-mentioned paragraph of the National Nature Policy Plan. It was the start of preparatory work by the National Reference Center for Nature Management (IKC-N, which is part of the Directorate for Nature Management) to provide background information on the present policies and involvement of the Dutch society with wetlands in its broadest sense.

The results of this study were published in 1995 (IKCN report nr. 78, in Dutch). It describes the present policies and involvement in wetlands and, at the same time, formulates very preliminary suggestions to develop a greening policy for Dutch companies, consultants, etc., involved in wetlands activities worldwide.

In general the Dutch Government's policy on wetlands conservation includes the following most important elements:

National level:

- carry out conservation and management of existing wetlands
- integrate wetlands in the national ecological network
- give priority to wetland restoration and the development of new wetlands (Note: this is well under way with thousands of hectares of mainly grassland being turned into wetlands)

International level:

- support wetland conservation and wise use of wetlands worldwide; this includes river systems and coastal areas, not only inland wetlands such as marshes and lakes)
- closely cooperate with the Ramsar Convention, the Bonn Convention, the Biodiversity Convention, the EU, UNEP, IUCN, Wetlands International and other international organizations and support their activities on wetlands if appropriate
- support waterbird conservation on a flyway level, including wetlands as their habitats, in the framework of the African Eurasian Waterbird Agreement and flyways related with the AEWA

The IKC-N study report made clear that with the Netherlands as a basis, a wide range of agencies, companies and NGOs are active in wetlands and wetland-related issues in the broadest sense and worldwide. To mention a few areas of activities as an illustration:

<u>Research, education and training:</u>

- Almost all universities, but also research institutes of ministries and the Academy of Sciences, are involved in wetland projects. It involves several thousands of people and budgets up to several tens of millions DFL.
- Over 200 international training courses are given, many of them having wetlands-related problems as part of the training; however, only two courses are entirely devoted to wetlands conservation and management. This includes the International Course on Wetlands Management in Lelystad.

<u>Consultancies:</u>

- The Dutch consultancy activities and firms are among the largest in the world. In this field there at least 23 firms with more than 100 staff, and the annual budget for the total sector is estimated to be about two billion DFL, involving about 60,000 staff in total. The ten largest firms are working together in NEDECO which, as a consultancy consortium, is the fifth of the world.
- About one-third of all projects have a relation with wetlands.

Infrastructure, dredging, constructing:

- Worldwide Dutch dredging firms are top market leaders.
- Total annual cash flow is about 6-7 billion DFL.
- Jobs for ten of thousands of people are involved.

Altogether this is a major economic activity for the Netherlands, with a large spin-off. It is therefore due to need for maintaining this international top position that policy makers in the Ministry of Economic Affairs and the Ministry of Foreign Affairs are not very keen in putting restrictions on these activities to meet certain ecological criteria. In fact, several international conventions on free trade and free market enterprise forbid certain restrictions and do not give national governments much power to interfere with the free market principles. If the Netherlands Government should nonetheless put certain criteria to wetlands-related activities, it is the general feeling that Dutch companies will lose part of their market position to countries where such restrictions are not imposed on such activities. Given the enormous economic interests involved, it is very understandable that the Dutch Government has to act carefully and in a clear way.

However, on the other side, it is already very obvious that international agencies, but also national agencies providing for instance support via funds for developing countries, are more and more interested in setting environmental criteria to their support. I will touch upon this element below.

The Netherlands and wetlands abroad: some financial implications

In the previous section, a summary has been given of the economic value of wetlands-related activities by Dutch agencies, companies, etc., and the general policy aspects which are presently being implemented. If we look at some more detail in the financial figures on the involvement of the Dutch Government in this process, the following information is available.

Conservation-oriented:

- Within the programme for international nature conservation, support to wetland conservation projects is about 3-4 million DFL over the past four years. This covers a wide range of projects in many countries. Details can be found in the Dutch National Report to the Conference of the Parties to the Ramsar Convention (Brisbane 1996).
- The Development Agency (DGIS) has, in the same period, spent about 60 million DFL on wetland-related projects; ranging from the development of National Wetlands Policies (Uganda) to rural development projects and the establishment of national parks, for instance in West Africa.

Less conservation-oriented:

- Via the multilateral money flow (World Bank, GEF, FAO), some hundreds of million DFL have been spent on wetland-related project with mainly a strong infrastructural component.
- More on a distance, but still involving much Dutch money, is the support by EU (within EU) on projects including wetlands. This is about 18-20 billion ECU. Via the Lome Treaty, the EU spends about 1.5-2 billion ECU on wetland-related projects in countries outside the EU.

I mentioned already the many billions of DFL money flow via the consultants, dredging and construction firms, etc. Part of that money originates from the above-mentioned cash flows of the larger institutions, but certainly also as a result of direct contacts between national governments and the Dutch corporate sector.

The conclusion must be that, in general, but also in relation to money/cash flow in which the Dutch Government is directly or indirectly involved, wetland-related activities are of major importance for the Dutch economy, both in- and outside the country.

However, if one looks at the extent to which the Dutch Government is in a position to set conditions to all these activities, it is only a small percentage that can really be influenced without interfering with the basic principles of the free market economy as supported by the Dutch Government.

It is our opinion that, in fact, in probably not more than 10% of all wetland and wetland-related projects in which the Dutch corporate world, consultancies, etc., are involved, the Dutch Government is in a position to undertake concrete actions in order to assure a ecologically sound implementation of wetland-related projects, e.g. their conservation and sustainable use based on the principles as agreed by the more than 90 countries that are Parties to the Ramsar Convention.

In more than 90% of all cases, the Dutch Government has no legal power to interfere with the free market activities. In almost all cases, it would even lead to direct interventions with the national policies and sovereign rights of other countries. This is, of course, not at all possible or advisable to do. This conclusion is of the utmost importance: it must be made clear that, while criticism of the Dutch Government will be respected and treated with much attention, actually the Dutch Government is not in a position to change the situation. On the basis of the data collected, it must be clear that in spite of the good will of the Dutch Government, it has only very limited possibilities to influence the "Dutch Wetland Paradox" towards a more conservation-oriented balance.

The Netherlands and wetlands abroad: long-term goals

Although it was concluded in the previous section that the Dutch Government has little or no tools to directly influence a better wetlands conservation policy of Dutch-based companies and consultants, it does not mean that nothing can be done to improve the situation. On the contrary, it should stimulate a number of concerted actions aiming at influencing the corporate world towards a better use of their knowledge and expertise in wetlands conservation and management in general.

That in fact is the long-term goal of the project **"the Netherlands and Wetlands abroad"**. A first priority is to consult with all Dutch partners, ministries, corporations, consultancies, etc., and try to find a common base for further discussions on wetland conservation. It is of course also of major importance that all Dutch Government institutions involved in wetlands and wetland-related activities should develop and accept a common policy to "the Netherlands and wetlands abroad". This process is underway, and in autumn 1996 a workshop will be held to finalize such a common policy together with the corporate world and setting long term goals for wetlands.

The following elements could also be part of such a long-term goal initiated by the Dutch Government and supported by the private sector:

- continue to provide support to conserve remaining wetlands within the country and abroad, with priority to integrated conservation and management of the flyway area of the African Eurasian Waterbird Agreement;
- develop new wetlands where this appropriate and use the widely available Dutch technical expertise to achieve this in a cost-effective and sustainable way. Many wetlands, if properly managed, are as productive as the best agricultural fields, providing a wide range of living conditions for flora and fauna. The development of new wetlands could also be an integrated part of the development of large infrastructural projects (airport, harbours, etc.). With a little energy and a very limited amount of money, it is often possible to create new wetlands at places where they did not exist, thus compensating for the worldwide lost of wetlands over the past decades;
- restore degraded wetlands worldwide. Again in this field, the enormous technical knowledge and expertise from the Dutch corporate and scientific world can be used to achieve this aspect;
- provide the relevant technology and expertise to manage existing protected wetlands against negative influences from outside (water pollution, drainage of water, water level control, flood protection activities, etc.);
- monitor the developments in the field of wetland conservation and management.

It is very obvious that setting these long-term targets in principle would not negatively influence the Dutch economic interests in wetlands, both ecological and technical. This because for most of targets, due already to the present state of degradation of wetlands worldwide, the widely available Dutch technical expertise is vital to achieve good results.

It could very well be that if Dutch companies, consultants, etc., are "greening their expertise and technology", they will not lose markets, but probably gain markets. This statement is based on what is actually happening: more and more national funding agencies for certain, but also the multilateral funding agencies, are setting environmental criteria and conditions to the projects which will be funded.

This is an ongoing process also stimulated by the Convention on Biodiversity which provides for an article in which countries are requested not to undertake or fund activities which can damage the biodiversity of the country where such activities are undertaken.

This is a two way process, as so many countries which are signatories to the Ramsar and Biodiversity Conventions are providing contracts to Dutch companies and consultants. It is therefore important that from both sides activities are undertaken to achieve the long-term targets as formulated above.

The Netherlands and wetlands abroad: possible institutional developments

As mentioned before, this project has just been started and the study-report, as published by the IKC-N has been distributed widely among other ministries and the whole corporate world. Many comments have been received and, as mentioned, some further workshops will be organized jointly with government agencies, scientific institutes, companies and consultants to explore the possibilities of working together to achieve the long-term goals as formulated above. The administrative form in which long-term cooperation between the Dutch Government and the corporate world/public sector could be established is open for discussions. So far various models have to explored, such as:

- Letter of intent
- Agreement/Memorandum
- Code of Conduct
- Covenant
- National legislation

The latter two are almost certainly not possible without interfering too much with the free market rules. Codes of Conducts in fact exist within several of the larger corporations or are part of the organized world of consultants and engineers. For instance, the ONRI (Dutch Association of Consultancies) has its own Code of Conduct, including aspects of environmentally/ecologically sound implementation of projects. A similar code of conduct exists with the EFCA (European Federation of Engineers and Consultancy Associations) and the FIDIC (Federation Internationalis des Ingenieurs Conseilleurs.

It is certainly worthwhile to try to achieve a Memorandum with the public sector in this field, aiming at a full implementation of the Ramsar Guidelines on Wise-use and the Ramsar Guidelines on the Management of Wetlands in general. The Ramsar Convention and its Bureau will certainly be involved in the future development of this project and can significantly contribute to the final long-term goals to be achieved.

"Human Population Growth, Land-Use Planning and Wise Wetland Management: a Challenge for the Future"

Allan E. F. Heydorn
WWF – South Africa

We will soon be entering the 21st century and the human population in many countries will be facing head conflicts and decisions of critical importance to survival. At global level, the increase in the world's overall human population was 88 million/annum in 1987. In 1995 this figure had risen to 91 million/annum. In South Africa, at a current growth rate of 2% per annum, it can be expected that the human population will double from 40 million in 1995 to 80 million by the year 2025 (Anon, 1995).

We are therefore reaching a stage at which, in many parts of the world, the human population is outstripping the resources required, first, for maintenance of quality of life and, thereafter, for survival. The resources are primarily water, food, energy and living space. Closely associated with these are the need for jobs, industry and the infrastructure without which modern society cannot operate.

Of central and cardinal importance is water, for without water no life is possible and no human requirements can be met. In all countries of the world, protection of the mechanisms and processes governing the natural water cycle, must therefore be at the very highest level of priority in overall land-use planning and management. Nowhere is the setting of this priority more important than in Africa, where arid and semi-arid conditions prevail over such vast tracts of land.

Wetlands are of core significance in the processes governing the water cycle, and this underscores the importance of the task of the Convention on Wetlands of International Importance - Ramsar. Tom Kabii, in the Foreword to the Proceedings of the African Regional Meeting, held in Nakuru, Kenya from 29 August to 1 September 1994 (Ramsar, 1995) summarizes the nature and importance of wetlands in Africa as follows:

> Africa has diverse wetland types which support large and diverse numbers of animal and plant species. They are a source of livelihood to large human populations for supply of water, for domestic and industrial uses, drinking sites for animals, and provision of material for firewood and construction.

Kabii therefore summarizes in succinct but powerful form the key role of wetlands in ecological processes, in maintenance of biological diversity and in meeting basic human needs. A stronger motivation for the incorporation of wetland protection in overall land-use planning and management procedures can hardly be given.

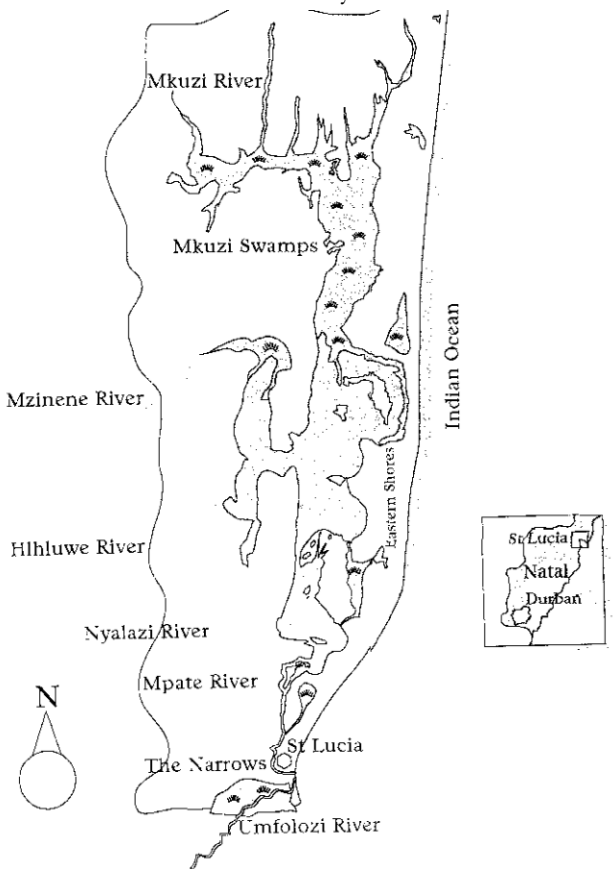
However, recognition of this need also poses a dilemma in countries in which there are strong demands for job creation and which are being rapidly industrialized. South Africa is frequently described as the industrial powerhouse of Africa. Perceptions of job availability through industry attract thousands of immigrants from other parts of Africa – legal and illegal. South Africa's own population is burgeoning. The need for protecting the natural resource base, especially water, is clearly recognized by government, industry and many private individuals. But without jobs, people go hungry and the pressure for development is therefore great and increasing.

Conflicting demands create a dilemma for land-use planning and the execution of policy. To illustrate this point, emphasis will be given in this paper to coastal wetlands which are of importance not only to terrestrial ecosystems, but also to the marine environment, with which they interact. The controversies revolving around the quest for industrial development in the immediate vicinity of two of South Africa's major coastal wetland systems, illustrate the point. Both are described by Heydorn (1996).

TWO CASE STUDIES

A) South African East Coast (Kwazulu/Natal): Mining for Heavy Minerals in the Dune Environment of St Lucia, in Relation to Nature Conservation, Tourism and the Needs of the Local Population

St Lucia is the largest estuarine system in Africa (Begg, 1978) and without doubt the most important in Kwazulu/Natal, as it comprises approximately 80% of the total estuarine area of that province. The mouth of the system is situated 240 kilometres to the north of Durban. The system has an area of between 300 and 350 km^2 depending on water levels, is about 65 km long, has a maximum width of 22 km and a depth of 1 - 2,5 m. The main portion of the lake system is connected with the sea via a 12 km long winding channel known as "The Narrows" (see map). Tidal exchange takes place through this channel. Evaporation is high in this region and water input from five rivers feeding the system is exceedingly important to prevent salinities from rising to levels lethal to aquatic organisms. The vulnerability of the system to high salinities has increased considerably since 1952 when the largest river, the Mfolozi, feeding the estuary from the south, was given a separate opening to the sea. This became necessary when the silt load of the river reached such high levels due to degradation of its catchment and floodplains, that the mouth of the entire St Lucia System became choked and blocked resulting in massive mortality of organisms in the system (Report, Dept. of Water Affairs, 1966). There have been several instances of mass mortalities in the foodweb of St Lucia as a result of high salinities, for example in 1969/70 when salinity of the northern lakes rose to three times that of seawater. Plankton, juvenile and adult marine fish, prawns, crocodiles and hippopotami were affected (Begg, 1978). The birdlife occurring at St Lucia is exceptionally diverse and of such international importance that this aquatic system has been given recognition as a Wetland of International Importance in terms of the Ramsar Convention (Cowan, 1995a).



St Lucia and its environment are managed by the Natal Parks Board as the Greater St Lucia Wetland Park and are graphically described by Taylor (1991). In terms of conservation and tourism, St Lucia represents one of the most important natural environments in southern Africa. Application has been made for World Heritage Site status.

Unique features of St Lucia are the swamp and sponge areas along the eastern shores of the lake system. These swamps are fed by seepage of fresh water from the dune cordon separating the lake from the sea and are of immense importance at times of drought and high salinities. When salinities in the main body of the lake rise excessively, the peripheral waters remain fresher as a result of seepage from these sponges. This enables aquatic organisms to survive even when salinity in the main body of water has risen excessively. If this seepage mechanism is disrupted, the ability of aquatic organisms to withstand the fluctuating salinities in the system will diminish with serious consequences not just for the St Lucia ecosystem, but also for marine life and bird populations (Wallace and Van der Elst, 1975). The vulnerability of the waters of St Lucia to salinization has been increased by plantations of pine and eucalyptus trees covering a large proportion of the lake's surrounding areas, which absorb much of the groundwater and hence seepage which previously reached the lake system.

Against this background it will be understood why there has been public opposition to attempts by the company, Richards Bay Minerals (RBM), an affiliate of Tisand (Pty) Ltd (major offshore shareholder: RTZ group), to exploit heavy minerals in the dunes to the east of Lake St Lucia. The mining method, which is

being utilized further south on the coastal dunes of Kwazulu/Natal, entails the bulldozing of deep basins in the dunes, lining them with impervious dense material such as bentonite and filling them with water. The heavy minerals are extracted from the surrounding dune sand by cutter suction dredgers. Slurry is pumped to floating concentrator pumps, which separate the heavy minerals from the dune sand. Cowan (1995b) describes the St Lucia Lake System and the mining operation in greater detail, as does the Environmental Impact Assessment (EIA) commissioned by RBM and carried out by the CSIR (CSIR Environmental Service, 1993).

Richards Bay Minerals has an impressive record in the application of this mining technology and in revegetating dune sands subsequent to the mining. The latter entails reshaping the dunes and replanting with vegetation which resembles the original plant cover. Restoration of the original biological diversity is, of course, more difficult, but the method is appealing especially where pine or eucalyptus plantations are removed during mining and replaced with indigenous vegetation. This would be the case in some parts of the dunes to the east of St Lucia, where the mining is planned. Yet deep concerns remain for the following reasons:

- In spite of a considerable amount of geo-hydrological research in the dunes of St Lucia's eastern shores as reflected in the Environmental Impact Assessment (EIA) (CSIR, 1993) commissioned by Richards Bay Minerals, substantial doubt remains about the actual effects of disturbance of the dune stratification upon seepage mechanisms and hence fresh water replenishment of the lake system.

- There is concern about the ability of the already heavily exploited Mfolozi River to provide the immense amount of water (about 35 000 m^3/day) required by the mining. Water is already extracted from the river for mining operations to the south. The implications for the ecology of the river downstream of the extraction points, or for the dynamics of the mouth, have not been quantified. There is uncertainty about the consequences of such changes for human communities dependent upon the river.

- There is uncertainty about the influence of the infrastructure required for the mining (roads, heavy vehicle traffic, powerlines, etc) upon the town of St Lucia which is a regional tourist centre.

- It is known that test drillings have taken place in the entire dune cordon up to the Mozambique border. Richards Bay Minerals deny that they intend mining to the north of St Lucia, but there is great fear that this policy may change once the expensive infrastructure is in place and because this type of mining operation has the capability of slowly progressing along vast tracts of dunes.

- A pipeline through which the heavy mineral slurry is pumped to the railway system to the west of St Lucia would have to cross The Narrows, the only connection between the northern lakes of St Lucia and the sea. Substantial ecological risk may result, and this has not been quantified.

- There is great unhappiness about the inevitable visual impact of a massive mining operation upon the sense of place of this unique natural system. Its aesthetic and spiritual values to the tourist and person seeking St Lucia because of its wilderness qualities would be greatly diminished.

In the eyes of many, the needs and nature of mining are therefore incompatible with those of preservation of an aquatic system of inestimable importance. Threats to its biological diversity and aesthetic values are not acceptable, and St Lucia is regarded as an area which should be sacrosanct to incursions of heavy industry. This view was confirmed by the St Lucia Review Panel under the chairmanship of Judge R. N. Leon, which sat as part of the EIA procedure, and which advised on 10 December 1993 against mining at St Lucia.

In spite of this finding, the St Lucia mining bid remains a source of controversy. Jackson (1993) presents arguments in favour of mining and postulates, *inter alia,* that at this stage, only 1 400 ha are to be disturbed.

It is striking that the whole debate did not take place against the background of long-term strategic land-use planning for the entire region between the Mfolozi River and the Mozambique Border. This would have provided the only means for weighing up the advantages and disadvantages of mining against those of other facets of economic activity – agriculture, forestry, local crafts industries and, of course, nature conservation/ tourism. It is a pity that part of the expenditure of more than R5 million for the EIA could not have been used for the compilation of such an all-embracing development plan.

After weighing up the arguments for and against mining very carefully,in February 1996 the South African Government decided against mining on the Eastern Shores of St Lucia.

B) South African West Coast:
Development Of a Steel Mill and Associated Industries at Saldanha Bay, in the Proximity of Langebaan Lagoon and the West Coast National Park

In 1993 it became known that ISCOR, in collaboration with the South African Industrial Development Corporation (IDC), had applied for rezoning of land from agricultural to industrial use in the immediate vicinity of Saldanha Bay, for purposes of the erection of a steel mill and establishment of associated industries. The Saldanha Steel Project (SSP) would essentially process South African-produced iron ore from Sishen as well as imported pelletized ore. The associated industries would include a galvanizing plant, a cement factory, stainless steel and pipe production facilities and a range of engineering support services.

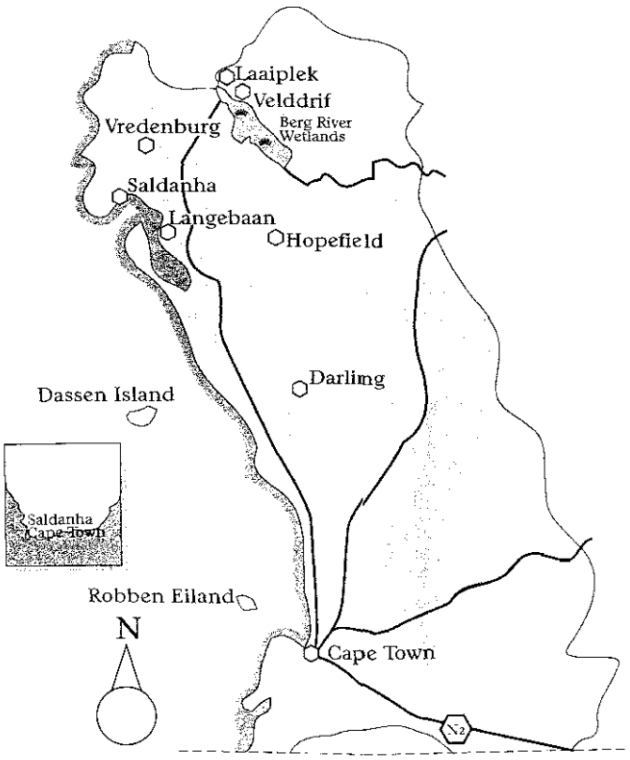
It is striking that, as at St Lucia, this heavy industrial development project has also been planned in the immediate vicinity of a major coastal aquatic system of international importance. The town Saldanha is situated a little more than 100 km north of Cape Town. The water body of the Saldanha/Langebaan Lagoon System is approximately 24 km long, depending on the state of the tide (see Figure 2). The overall water area comprises 13 100 ha, of which 5 600 ha fall in the southern portion under the jurisdiction of the National Parks Board (Langebaan Lagoon), and 7 500 ha in the northern portion (Saldanha Bay) which is controlled by PORTNET. The harbour and iron ore exporting quay are situated in this northern portion. The West Coast National Park incorporates the whole Langebaan Lagoon and is registered under the international conventions Ramsar (for wetlands) and Bonn (for migratory birds). South Africa is a signatory to both these conventions. The bird-nesting islands, Jutten, Malgas and Marcus situated in the northern Saldanha Bay portion, form part of the Ramsar site (Cowan, 1995a) and are managed by the National Parks Board.

In contrast to St Lucia, no rivers flow directly into the Saldanha/Langebaan Lagoon aquatic system. The salinity equilibrium is maintained by exceptionally strong tidal exchange on the one hand, and seepage of freshwater from peripheral swamps on the other. The swamps in turn are dependent on groundwater seepage for survival. Substantial volumes of groundwater occur in aquifers underlying this region between Saldanha/Langebaan and the lower reaches of the Berg River situated some 20 km to the north.

The swamps and adjacent tidal mudflats support a rich network of living organisms. Many of these organisms are preyed upon by wading birds when the mudflats are exposed at low tide and by marine fish when they are covered with water at high tide.

In 1993 the SSP commissioned the CSIR to carry out an Environmental Impact Assessment (EIA), the results of which were made public in 1994 (CSIR Environmental Services, 1994). The brief was project-specific and restricted to only the first phase of development of the proposed steel mill. It did not touch upon the potential impact of the overall industrial development envisaged. Public reaction to the EIA was wide-ranging. On the one hand, there was powerful pressure for the development, especially because there is much poverty amongst the people of Saldanha Bay, as a result of progressively declining yields by the marine commercial fisheries of the region. On the other, there was strong opposition for the following reasons:

Fig 2:
Locality map of Saldanha/Langebaan area in relation to Cape Town



- Conflict with the economically important tourism industry revolving around the West Coast National Park, Club Mykonos and Saldanha Bay, and as a destination for the international yachting fraternity. This tourist potential has by no means been exploited to the full, especially not by the town Saldanha itself.

- Conflict with the mariculture industry, which is strongly developed in Saldanha Bay. The culture of mussels and oysters from floating rafts currently employs some 1 500 people and the industry at Saldanha is expanding. This is important at a time when yields of marine commercial fisheries are declining.

- Fears that South Africa's international image will suffer if obligations in terms of the Ramsar Convention on Wetlands and the Bonn Convention on migratory birds are not honoured.

- Deep concern about the ability of the already heavily utilized Berg River to also provide the substantial amounts of water for this new industrial development node and the inevitable accompanying residential expansion. Groundwater replenishment along the lower reaches of the river is already a cause of great concern to farmers, as borehole water upon which farming is highly dependent is becoming increasingly brackish. If excessive water abstraction and storage in dams changes flow and flood patterns, there is also the danger that the river mouth will be blocked by marine sediments. The mouth is the only route which fishing trawlers can use to offload their catches at the canning factories of Laaiplek and Velddrif. The concern of the agricultural and fishing industries must therefore be taken seriously.

The controversy over this issue became so powerful that the Minister of Environment Affairs and Tourism appointed a Board of Investigation under the Chairmanship of retired Judge J. Steyn. The Board heard a wide range of evidence and recommended that the steel project should continue but at a site some 10 km further inland and subject to stringent measures aimed at reducing water requirements and ecological as well as aesthetic impacts (Report, Steyn *et al.*, 1995). In making its recommendations, the Board emphasized two principles: First, the right of industrialists to locate their operations on sites suitable for optimizing economic benefits. Secondly, the need for industry to live in harmony with the environment and other economically important activities dependent upon the environment. In the Saldanha region mariculture, pelagic fisheries and the tourist industry are particularly relevant. The need for strategic regional economic planning, taking into account the specific features and characteristics of the region, both terrestrial and marine, becomes evident.

Against the overall background sketched above, deep-going discussions took place between the Government, the steel industry, numerous organizations, including Ramsar, WWF-SA and the National Parks Board, as well as private individuals. These led to a compromise solution and the government gave approval for the steel mill to go ahead, subject to stringent conditions. This decision will be discussed in more detail below.

The role of the Ramsar Bureau at St Lucia and Saldanha/Langebaan

A) St Lucia. Notification in terms of Article 3.2 of the Ramsar Convention was given by South Africa in the 1989 National Report to the Bureau, that the ecological character of the St Lucia System was likely to change as a result of human interference revolving around the mining bid. Consequently, at the 4th Meeting of the Contracting Parties held in Montreux, grave concern was expressed about the potential impact of the mining and the South African Government was called upon to:

- prohibit any mining activity which will damage the ecological character of the site; and
- ensure that the St Lucia System is retained as a protected site because of its national and international conservation importance.

The site, along with 43 others, was entered onto the Montreux Record and thus became subject to the Monitoring Procedure according to Recommendation 4.7 (Cowan, 1995b). In 1991, the South African Minister of Environmental Affairs and Tourism invited the Bureau to send a monitoring mission to investigate the St Lucia situation. Consequently a three-person monitoring team, consisting of Mr M. Smart of the Ramsar Bureau, Dr S. Njuguna (wetland ecologist), and Dr V. Semeniuk (specialist dune ecologist) carried out an intensive investigation in April/May 1991. Their report was finally submitted and accepted during 1992 (Cowan, 1995b). At the 5th Meeting of the Conference of Contracting Parties held in Kushiro, deep concern at the potential impact of mining on the St Lucia System was re-confirmed and the Ramsar Convention called on the Government of South Africa to give serious consideration to the recommendations in the Monitoring Procedure Report No. 28, i.e. that the mining should not be allowed. It is difficult to refute therefore, in spite of the vehement denial of risk by Richards Bay Minerals, that the massive nature of the proposed mining operation, the danger of disruption of geohydrological dune seepage processes feeding the lake, coupled to excessive water demands and the inevitable impact of this heavy industrial activity upon the aesthetic values of this lake system, this mining operation is not compatible with maintenance of the integrity of St Lucia as a wetland of international importance. This is the fundamental reason for the recommendation also of the EIA Review Panel that mining should not be allowed, and for the public statement of WWF-SA opposing the mining operation. Ramsar contributed meaningfully to these conclusions, and to the final decision by the South African Government, that mining should not go ahead at St Lucia. Because of this negative decision, the South African Government has now requested that St Lucia be taken off the Montreux Record.

B) Saldanha/Langebaan. The situation at Saldanha/Langebaan is not as clear-cut as at St Lucia. As has been indicated above, the greatest concerns are about the availability of freshwater for the proposed steel mill and the associated industries and the dangers of groundwater and air pollution. If guarantees can be given that these problems can be overcome through technical modifications, and if the overall industrial development node can be shifted inland from the edge of the aquatic system, arguments in opposition to this development are considerably weakened. This is especially so if the industrial activity is seen to augment, rather than be of detriment to, existing economic activity in the region. It is therefore imperative that the validity of such guarantees is adequately tested, and it is in this context that the Government of the Western Cape and Saldanha Steel, who were trying to achieve the best compromise, sought the counsel of WWF-South Africa.

The view of WWF-SA was that, because of the international importance of the Saldanha/Langebaan System and its status as a registered site under the Ramsar Convention, no decision should be taken without direct consultation with the international Ramsar Bureau. This view was accepted. Consequently the Ramsar Bureau was invited to send a delegation to South Africa and Messrs M. Smart and T. Kabii made themselves available at very short notice for consultation.

Upon their arrival in South Africa on 4 November 1995, they were provided with all relevant background documentation, including the comprehensive report compiled by the Steyn Board of Investigation.

On 6 November they undertook a field trip to the entire Langebaan, Saldanha, Berg River region, using a helicopter. They were accompanied by Dr A. Heydorn of WWF-SA and Mr S. Yssel of the National Parks Board, who know the region intimately and provided relevant topographical, climatological, geological, palaeontological and botanical background information. Special attention was paid to the geological history of the region leading to the present configuration of two major wetland systems – those of the Lower Berg River and of Saldanha/Langebaan (see Figure 2), which appear to be linked by a system of underground water aquifers. The origin of these aquifer systems requires more elucidation, but there is strong evidence that this can be traced to a former exit into the sea of the Berg River via the present position of Langebaan Lagoon. The marshes of the southern portion of Langebaan Lagoon were visited on foot. Here the inflow of low-salinity seepage water, resulting in the dominance of freshwater marsh vegetation, was witnessed. It was confirmed that the present-day relationship between the lower Berg River, the Saldanha/Langebaan System and the aquifers is in urgent need of further study, as disruption of the seepage water-inflow mechanisms into Langebaan Lagoon could destroy the ecological integrity of the entire system.

In the days that followed, the Ramsar Bureau representatives were involved in intensive discussions with the provincial Ministers of Agriculture, Planning, Tourism, Finance and Nature Conservation. Saldanha Steel, the National Parks Board, WWF-SA, private landscape and architectural consultants and the National Department of Environmental Affairs and Tourism participated in these discussions. They led to development of a compromise entailing the shifting of the proposed steel mill two kilometres inland, creation of a four kilometre buffer strip between the mill and the waters of the bay, minimization of freshwater requirements through the use of air or seawater cooling, and imposition of strict environmental controls. Furthermore, all associated industries are to be developed inland of the site of the steel mill, and the Western Cape Government undertook that a Strategic Economic Development Plan for the entire region would be commissioned without delay.

These stringent conditions formed the basis of approval by the Cabinet of the Western Cape that the Saldanha Steel Project can go ahead.

Discussion

In fairness to Richards Bay Minerals, the question must be asked why the Ramsar Bureau was prepared to consider a compromise solution at Saldanha, but not at St Lucia. The answer can be related to three major considerations. First, at Saldanha alternative cooling methods can lead to substantial reductions in freshwater requirements. This is not possible at St Lucia, where the mining ponds must be filled. Secondly, at Saldanha it was possible to shift the location of the steel mill and associated industries away from the bay and to avoid substantial interference with groundwater flows, which would be virtually impossible at St Lucia. Thirdly, the proposed mining at St Lucia would fall within a designated Ramsar site. This is not the case at Saldanha. Nevertheless, it is essential that Saldanha/Langebaan be placed on the Montreux Record to ensure that in future Ramsar Management Guidance Procedures are applied to this system, which will inevitably be subjected to considerable stress by heavy industrial development in its immediate vicinity. As a matter of fact, both Ramsar and WWF carry heavy responsibility to ensure that the conditions under which the go-ahead for the steel mill and associated industries was given are strictly adhered to, because, in the event of the environment suffering damage, Ramsar and WWF will be regarded as part of the decision making process which lead to that damage. As far as the steel and associated industries are concerned, failure to adhere to the conditions under which the compromise was reached would not only damage their own integrity, but also South Africa's reputation as a signatory of international conventions. It is therefore of vital importance that the development of this industrial endeavour demonstrates that it is carried out in a highly responsible manner and that it is not to the detriment of other economic activities dependent upon an intact environment and of the inherent ecological and aesthetic values of the region. The whole project remains in the focus of national and international scrutiny.

Throughout the discussions about St Lucia and Saldanha/Langebaan in which the Ramsar Bureau and WWF-SA were involved, the emphasis has been on the protection of coastal processes and water resources without which the ecological integrity of these two major wetland systems cannot be maintained. These

considerations are also of great importance to communities dependent upon the limited amount of water, wetlands, and related terrestrial and marine resources for their well-being and livelihood. Equally important are economic considerations, for these are of national and international relevance.

Of particular relevance in the international context to the Saldanha situation is the controversy over the management of the Doñana National Park in southern Spain, which is also a Ramsar site. Here the use of underground water supplies for tourism and agriculture caused a serious drop in the water of an aquifer underlying both the park and surrounding area and eventually led to desiccation of the park itself. Furthermore, in a situation similar to that at St Lucia and Saldanha, Ramsar Contracting Parties made important recommendations, relevant to management of the Lower Danube Basin, at the meeting held in Kushiro, Japan, in June 1993.

This underlines the need for "wise use and the need for national wetland policies" (see Nakuru *Proceedings*, 1994, pp. 101-3). Ramsar defines the wise use of wetlands as "their sustainable utilization for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem. Sustainable utilization is defined *as* "human use of a wetland so that it may yield the greatest continuous benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations."

This approach is directly relevant to both case studies at St Lucia and Saldanha, and it will be equally relevant to the handling of future controversies, which will inevitably arise. Both St Lucia and Saldanha illustrate the importance of integrating the "wise use principle" into the wider concept of "Integrated Coastal Zone Management" because if the coastal aquatic systems suffer damage, this will impact negatively also upon the adjacent marine environments and their exploitable resources. In any coastal environment a holistic approach must therefore be followed in which strategic regional economic land-use planning incorporates the principles of wise use of wetlands and integrated coastal zone management. In this regard it is important to note that a Wetlands Conservation Bill, incorporating the above principles, is currently serving before the South African Parliament.

It should also be noted that, at a workshop and policy conference on Integrated Coastal Zone Management in East Africa (including the Island States) held in Tanzania in 1993, the need for countries to develop a coordinated approach to legislation which governs activities in and outside coastal zones, and with the potential of impacting negatively on coastal and marine wetlands, was identified. The St Lucia and Saldanha case studies underline the wisdom of this recommendation. At both, coordinated legislation and strategic land-use planning were inadequate, and unless these shortcomings are rectified, project-specific EIAs cannot be evaluated properly and delays in economic development and unsatisfactory decisions may be difficult to avoid.

The inference as far as the management and protection of wetlands is concerned is clear, as is the magnitude of international implications, and the Ramsar Convention at its meeting held in Brisbane in March 1996 gave serious attention to this matter. This led to unanimous acceptance of the following recommendation: [the text of Recommendation 6.8 is available elsewhere in these *Proceedings* and has been omitted here – ed.]

Concluding Comment

It was impressive witnessing at Brisbane the concern and collaborative work over 10 days of over a thousand people belonging to 91 Contracting Parties to Ramsar, 32 observer states, 12 government organizations, 94 non-governmental organizations and many individuals, in the interests of protection of the world's wetlands and their supporting systems, both terrestrial and marine. The fact that a Strategic Plan for the next five years, 25 resolutions, and 18 recommendations were accepted bears testimony to the intensity of this work. The challenge now is to implement the Plan, the resolutions, and the recommendations throughout the world so that positive feedback can be given at the next convention in three years time.

My sincere thanks go to the Ramsar Bureau for inviting me to present a keynote paper, for the superb organization of the conference and to WWF-SA for providing financial support.

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"Towards a Policy and Regulations for Jamaica's Wetlands"

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Until recently, Jamaica has lacked policies and regulations relating to specific ecosystems. The need for legislation for the control of coastal resources was identified in Jamaica's Country Environmental Profile (Government of Jamaica *et al.*, 1987). In addition, documents such as Jamaica's National Environmental Action Plan (1995) and the Natural Resources Conservation Authority's (NRCA) Corporate Plan (1995) recognized the need to develop policies and regulations relating to wetlands and beaches. Recent efforts to prepare a policy and regulations for wetlands were fueled by plans to develop a coastal zone management programme for Jamaica. Therefore, the draft wetland policy and regulations were not developed in a vacuum, but were viewed as an integral part of the larger coastal zone, with policies and regulations for coral reefs and beaches being developed almost simultaneously. In addition, mapping of existing coastal resources, including wetlands, seagrass beds, coral reefs and beaches has begun. The data collected will be incorporated into an established Geographical Information System and will be a vital tool for the management of coastal resources.

The draft wetland policy and regulations are incorporated in the document *Mangrove and Coastal Wetlands Protection Draft Policy and Regulation* (NRCA and Development of Environmental Management Organizations, 1995). This document was prepared by the NRCA's Coastal Zone Management Branch staff with the assistance of consultants from the Government of Jamaica/United States Agency for International Development's (USAID's) Development of Environmental Management Organizations (DEMO) Project. NRCA and DEMO identified major coastal zone management issues in Jamaica, priorities being the need to strengthen the legislative basis for coastal zone management, and to develop and adopt policies as well as regulations for wetlands, coral reefs, mariculture and beaches.

Jamaican legislation was reviewed by NRCA and DEMO and it was found that, although there were no regulations specifically referring to wetlands, existing laws can, and have, been used to provide them with some degree of protection. For example, under the Town and Country Planning Act (1958), Tree Preservation Orders allow for the protection of trees and woodlands, preventing the cutting down, topping, lopping or wilful destruction of trees without the consent of the local authority. The Natural Resources Conservation Authority Act (1991) provides for the designation of any area of land as a national park, any area of land or water as a protected area, and any area of land lying under tidal water and adjacent to such land or any area of water as a marine park. The Beach Control Act (1956) also allows for the declaration of any part of the foreshore and the floor of the sea as a protected area. Specific regulations such as the Natural Resources Conservation (Marine Parks) Regulations (1992) provide protection for wetlands within park boundaries. Reference is made to wetland protection in the Town Planning Department's *A Manual for Development* (1982), which states that alteration of wetlands should not be allowed for developmental purposes if it destroys or significantly impacts basic wetland functions. It also requires that a thorough ecological study be undertaken and costs and benefits compared before development proceeds. Although existing legislation provides opportunities for the protection of wetlands, actions taken in this regard have been, for the most part, piecemeal and *ad hoc*, lacking an appropriate policy framework.

The lack of a coherent policy and regulations specifically relating to wetlands has probably partially contributed to the degradation and destruction of wetlands, once estimated to cover approximately 2% of the island's surface area (Natural Resources Conservation Department and Traverse Group Incorporated, 1981). Wetlands have been, and continue to be, targeted for tourism, residential, industrial and agricultural development, their location within the much sought after, highly valued coastal zone making their fate even more precarious. In addition, wetlands have been chosen as disposal sites for solid waste and sewage effluent. The increasing appreciation of the value of wetlands as sources of food and as providing functions

such as flood control and water purification, as well as maintaining shoreline stability, has caused mounting concern about their future.

In order to develop a wetland policy and regulations, a decision was taken to focus on wetlands in a specific part of the island. Negril in western Jamaica was identified as one of the best candidates for a case study, due to factors such as the existence of the second largest wetland, the Negril Great Morass (approximately 2,289 ha), on the island, availability of information – the Morass being the subject of extensive studies due to consideration of peat mining in the 1980's – and the opportunity to examine interrelationships with other ecosystems, as well as the availability of funding for that site. Negril provided an opportunity to customize policy and regulations to the needs of a specific locale. Therefore, the *Mangrove and Coastal Wetlands Protection Draft Policy and Regulation* document (NRCA and DEMO, 1995) deals with the significance of wetlands in relation to Negril's economic future and threats to the resource and reviews the wetland component of the Negril Environmental Protection Plan for the proposed protected area. The document then presents draft policies and regulations, which, though specifically responsive to conditions in Negril, are generally applicable to the entire island. The policy seeks to encourage the multiple use of these ecosystems and the formation of partnerships with the private sector, local government and community groups in developing wetland management plans. The policy states that activities which threaten to diminish or destroy wetlands, such as alteration of the hydrological regime, filling and dredging, should be avoided.

Proposed regulations require that a permit be issued for activities which change hydrology, drainage, vegetation, topography or soil characteristics of wetlands and that a mitigation plan be developed and approved. NRCA will also review and certify any action involving the transfer of ownership or custody of Crown owned.wetlands. The regulations also seek to reduce sedimentation resulting from construction activities. It is proposed that incentives (for example, reduced land taxes) be provided to private individuals and developers implementing programmes to enhance or create wetlands. Draft regulations state that a performance bond will be required of developers seeking to implement projects which have the potential to damage wetlands.

The document has been circulated by the Coastal Zone Management Branch for review and comments within the NRCA and has been sent to selected individuals affiliated with other organizations. Following this initial review, the document will receive wider circulation targeting government and non-governmental organizations, agreement with these parties being essential to ensure a coordinated approach to mangrove and coastal wetland protection. It is being proposed that the policy take the form of a Green Paper, which is a draft statement of Government policy on a particular topic. The document will be submitted to Cabinet for approval, after which the draft policy will be circulated nationwide. The document will be discussed and comments solicited at a series of public fora held in parishes throughout the island. Following the revision of the document, and upon approval by Parliament and Cabinet, it becomes official policy. This approach, seeking the Government of Jamaica's stamp of approval, will have the advantage, it is hoped, of ensuring that government sanctions activities supporting, and prohibits those which may undermine, the policy. One important issue is the degree to which the public should be involved in the development of policies and regulations. It may be argued that one of the weaknesses of the process chosen is that it fails to allow for public participation at an earlier stage. This may have prolonged the already slow process, but it would have had the benefit of conferring ownership of the policies and regulations on Jamaican citizens.

In the short term, it is expected that existing legislation such as the Beach Control, Town and Country Planning, Fishing Industry and Wild Life Protection Acts will be amended to incorporate relevant provisions; however, in the long term, new coastal zone legislation will be developed. In order to implement the wetland policy and regulations, a definition of wetlands will have to be adopted, a permitting system and manual for the protection and restoration of wetlands developed, as well as the identification of critical wetland sites undertaken. The development of a policy and regulations will not resolve all issues and problems relating to wetlands in the island. However, they will provide the necessary legal basis, the foundation for the development of an effective wetland conservation programme for Jamaica.

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"Economic Valuation and its Role in Wise Use of Wetlands"

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The Ramsar Convention plays a key role in the conservation of wetlands worldwide through promotion of their *wise use*, which is the sustainable utilization of wetlands for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem. The Guidelines for the implementation of wise use state the need to determine the benefits and values of wetlands that include flood control, groundwater recharge, support for fisheries and wildlife and recreation. Implementation of wise use thus requires quantitative measures of these benefits and values so that objective decisions can be made concerning choices between different forms of wetland utilization. Most planning and development decisions are made, at least partly, on economic grounds, and so the goods and services provided by wetlands must be given an economic value, if wetland conservation is to be chosen over alternative uses of the land itself or the water that feeds the wetland. For many products, such as fish or timber, there is a world market that allows easy calculation of the worth of the wetland. The value of wetland functions may be calculated from the cost of providing an alternative technological solution to perform the same function, for example, building a treatment works to achieve water quality improvement. Clearly, it is much more difficult to value biodiversity or the aesthetic beauty of wetlands, as no market exists.

Who actually gains and loses from a decision over wetland use is a critical issue. Conserving a peat wetland may be in the public interest, but an individual with rights to cut peat for fuel would clearly suffer economic loss. In this case, compensation to the value of an alternative fuel source might be appropriate. Another major hurdle is that developing countries face significant problems in appropriating the global benefits of wetland conservation, such as biological diversity. Consequently, means of appropriation such as debt-for-nature swaps must be strengthened and added to.

This paper discusses the utility and deficiencies of economic valuation and proposes a framework for planing evaluation studies and for putting the results in a policy.

Why valuation?

Economic valuation is the attempt to assign quantitative values to the goods and services provided by environmental resources. The economic value of any good or service is generally measured in terms of what we are willing to pay for the commodity (less what it costs to supply it), whether or not we actually make any payment.

Economic valuation should not be confused with financial exploitation. The main objective of valuation in assisting wetland management decisions is to indicate the overall net gain to society, as measured by economic benefits, of the various competing uses of wetland resources. This is termed economic efficiency. Who actually benefits and who loses from a particular wetland use is not part of the efficiency criterion *per se* – building a hydropower dam may benefit people and industry in a nearby town, but it is the rural poor, who may have no electrification, who suffer if a wetland downstream of the dam is degraded. It is therefore often important that many proposed wetland investments or management policies are assessed not only in terms of their efficiency, but also their distributional implications. A full economic valuation would consider the value of the wetland to the local people.

Economic valuation is not a panacea for decision-makers making difficult choices concerning the management of wetland resources. Often there is insufficient information on important ecological and hydrological processes that underpin the various values generated by the wetlands, which is often the case for

many non-market environmental values. Under such circumstances, valuation cannot be expected to provide realistic estimates of economic values, without further investment of time, resources and effort in further scientific and economic research.

Some members of society may argue that certain wetland systems and the living resources they contain may have a "preeminent" value in themselves beyond what they can provide in terms of satisfying human preferences or needs. From this perspective, preserving wetland resources is a matter of moral obligation rather than efficient or even fair allocation. There may be other motivations for managing wetlands in particular ways, such as political considerations. Thus, economic values represent just one input into decision-making, alongside important other considerations. Economic valuation may help inform such management decisions, but only if decision-makers are aware of the overall objectives and limitations of valuation.

The economic values of wetlands

For economic purposes, a distinctions is made between *use* values and *non-use* values of wetlands. Typically, use values involve some human interaction with the resource, whereas non-use values refer to those current or future (potential) values that rely merely on its continued existence and are unrelated to use. Use values are grouped according to whether they are *direct* or *indirect*. The former refers to those uses that are most familiar, for example, harvesting of fish, collection of fuelwood and use of the wetlands for recreation (the table lists several others as well). Direct uses of wetlands could involve both commercial and noncommercial activities, such as recreation, with some of the latter activities often being important for the subsistence needs of local populations in developing countries or for sport and recreation in developed countries.

Classification of Total Economic Value for Wetlands

USE VALUES			NON-USE VALUES
Direct Use Value	**Indirect Use Value**	**Option and Quasi-Option Value**	**Existence Value**
- fish - agriculture - fuelwood - recreation - transport - wildlife harvesting -peat/energy	- nutrient retention - flood control - storm protection - groundwater recharge - external ecosystem support - micro-climatic stabilization - shoreline stabilization, etc.	- potential future uses (as per direct and indirect uses) - future value of information	- biodiversity - culture, heritage - bequest values

In contrast, various *regulatory ecological functions* of wetlands may have important indirect use values. Their values derive from supporting or protecting economic activities that have directly measurable values. For example, the storm protection and shoreline stabilization functions of a wetland may have indirect use value through reducing property damages, as do floodplains that recharge groundwater that supplies water to wells beyond the wetland.

A special category of value is *option value*, which arises because an individual may be uncertain about his or her future need for a resource and/or its availability in the wetland in the future. In contrast, however, there are individuals who do not currently and will never make use of a wetland, but nevertheless wish to see them preserved "in their own right". Such an "intrinsic" value is often referred to as *existence value*. It is a form of

non-use value that is extremely difficult to measure, as existence values involve subjective valuations by individuals unrelated to either their own or others' use, whether current or future. Nevertheless, people in North America and Europe, for example, give millions of dollars each year to conserve the Amazon rainforest or Amazonia, even though they may never visit these places.

An appraisal framework for wetland valuation

Ideally any study ought to lead to an economic valuation of all the benefits and costs associated with each wetland use option that is to be evaluated. However, given that data limitations often constrain the potential to value many environmental functions and resources, it will be necessary to adapt the assessment methodology in such circumstances to provide the best information possible to aid decision-making. Regardless of the assessment method selected, an interdisciplinary approach will be needed at virtually all stages in the assessment that should involve collaboration between economists, hydrologists and ecologists in particular.

The overall assessment framework for economic evaluation of wetlands involves three stages of analysis:

- *Stage 1* – Defining the problem and choosing the correct economic assessment approach.
- *Stage 2* -- Defining the scope and limits of the analysis and the information required for the chosen assessment approach.
- *Stage 3* – Defining data collection methods and valuation techniques required for the economic appraisal, including any analysis of distributional impacts.

The completion of all three stages of the analysis should yield an economic evaluation of the wetlands that will indicate to policy-makers whether that option should proceed or not. All wetland values assessed should reflect the true "willingness to pay" by society for their benefits. This will require determining the true economic value of benefits that are essentially non-marketed and adjusting the market prices of some wetland goods and services for distortions caused by government policies or market imperfections, such as subsidies. However, in some instances, data and resource constraints may limit the analysis to a *financial assessment*.

Stage one: defining the problem and assessment approach

The first stage in the evaluation process is to determine the overall objective or problem. Three broad categories of issues are of most relevance to the economic analysis of wetlands:

- *impact analysis* – an assessment of the damages inflicted on the wetland from a specific external environmental impact (e.g., oil spills on a coastal wetland)
- *partial valuation* – assessment of two or more *alternative wetland use options* (e.g., whether to divert water from the wetlands for other uses, or to convert/develop part of the wetlands at the expense of other uses)
- *total valuation* – assessment of the *total economic contributions*, or net benefits, to society of the wetland system (e.g., for national income accounting as part of developing national wetland policies, a key component in the wise use concept).

The advantage of such a framework is its flexibility. Data and analysis may be tailored to the specific needs of policy-makers. For example, there may be no need to value alternative land uses if the relevant issue is the external impact of a specific activity, such as discharge of a pollutant.

Stage two: defining the scope and limits of the valuation and information needs

After the appropriate economic assessment approach for the stated problem has been identified, the next step is to define the analysis and information needs required to conduct the assessment. First, the wetland area under consideration, the time scale of the analysis and the geographical and analytical boundaries of the system must be identified. These will obviously differ given the type of problem to be analyzed. For

example, an impact analysis of the effects on a wetland of changes in water quality and flow would have to include both activities in its "analytical" boundary and would have to consider a time horizon sufficient to cover the duration of the changes in the water flow regime and the impacts of deteriorating water quality. In contrast, any attempt to measure the total economic contribution of a particular wetland to the welfare of society as a whole would have an extremely wide analytical boundary, sufficient to cover all possible social values of the wetlands, as well as a very long time horizon, perhaps sufficiently long to include inter-generational implications.

Once the system and analytical boundaries are defined, further analysis is needed to determine the basic characteristics of the wetland being assessed. In an economic assessment, we are essentially concerned with "valuing" these characteristics. In ecology, a distinction is usually made between the regulatory environmental functions of an ecosystem (e.g., nutrient cycles, micro-climatic functions, energy flows, etc.) and its structural components (e.g., biomass, abiotic matter, species of flora and fauna, etc.). This distinction is useful from an economic perspective, as it corresponds to the standard categories of resource stocks or goods (e.g., the structural components) versus environmental flows or services (i.e., the ecological functions). In addition, ecosystems as a whole often have certain *attributes* (biological diversity, cultural uniqueness/heritage) that have economic value either because they induce certain economic *uses* or because they are valued in themselves.

The next step is to determine the type of value associated with each of the wetland system's structural components, functions and attributes. Earlier it was helpful to distinguish between *direct use* values (e.g., the values derived from direct use or interaction with a tropical wetland's resources and services); *indirect use* values (the indirect support and protection provided to economic activity and property by the tropical wetlands' natural functions, or regulatory "environmental" services); and *non-use* values (the values derived neither from current direct or indirect use of the tropical wetlands). This grouping should be used when translating the characteristics of the wetland into economic terms.

Stage three: defining data collection methods and valuation techniques required for the economic appraisal

The final stage involves carrying out the actual assessment itself. Priority should obviously be given to assessing those resources, functions and attributes with the highest ranking. However, resource constraints, e.g., time, finances and skills, will also affect which characteristics can be valued and with what degree of accuracy. For example, a resource, function or characteristic may initially be given a high ranking, but resource constraints may prevent its valuation.

Resource constraints will also determine which data collection methods are appropriate and their implementation. For example, suppose it is important to value the catchment protection function of a wetland area. If resource constraints are binding, it may first be necessary to determine what hydrological and ecological work has been previously conducted in the catchment that would assist the valuation. If information from previous studies is not sufficient, it may be necessary to conduct selective experimental studies of water flow and sedimentation rates in different parts of the catchment under varying degrees of wetlands cover. At some point, it may be necessary to employ geographical information systems (GIS) and other techniques to model the observed effects and the implications of disturbances to the catchment protection function.

Resource constraints and data collection options will influence the choice of *valuation techniques* to be selected. Some non-market values can be approximated through use of *surrogate market prices*. For example, the value of fuelwood can be estimated from the next best alternative or substitute good, such as kerosene or charcoal. Where there is no substitute, the *indirect opportunity cost* approach may be used, where the time spent collecting or harvesting is valued in terms of foregone rural wages – the opportunity cost of labour based on other employment.

The actual expenditures on directly-used wetland services (e.g., recreation/tourism, water transport) may not reflect individuals' willingness to pay for them since they may be non-marketed and therefore unpriced inputs. If this is the case, alternative methods of valuation may be required. For water transport, the value can be expressed in terms of the *cost of alternative/substitute means* of transport. For recreation/tourism, the

travel cost method may be applied, where the value of visiting wetland areas is derived from the cost of travel, including recognition of the opportunity costs of travel time. More often, the *contingent valuation method* (CVM) has been used to value recreation involving temperate wetlands. Contingent valuation is a survey technique using direct questioning of individuals while they are on-site or by mail to generate estimates of individuals' willingness to pay for something they value – in this case, it would be improved recreation opportunities or simply maintaining existing recreation opportunities. Alternatively, individuals might be asked how much compensation they would require if they no longer had access to the wetland for recreation. Despite its wide use, contingent valuation remains a controversial technique.

The values of wetland environmental functions arise indirectly through their support or protection of economic activity and property. Where economic production is being supported, the value of these functions can be measured in terms of the *value of changes in productivity* attributed to these functions operating normally. Where economic activity or property is being protected, the values can be expressed in terms of *preventive expenditures* that would be required if the functions were degraded or irrevocably disrupted, the *damage costs avoided* where these functions continue to function normally, the *costs of alternatives/substitutes* to replace these functions, or the relocation costs required if these functions were lost. For example, hurricane damages avoided by maintaining coastal wetland strips to reduce storm intensity inland.

Estimating non-use values is extremely difficult unless use is made of such techniques as contingent valuation (CVM). The general approach is similar to that described above for recreation, and involves ascertaining from the individual either how much he or she is willing to pay to ensure that the wetland attributes are preserved, or alternatively, how much he or she is willing to accept in compensation loss of some or all of these wetland attributes. In many applications of contingent valuation, practical difficulties with capturing pure non-use values have been encountered.

Any option value associated with preservation will also be difficult to assess and quantify. The general presumption is that the option values (including *quasi-option value*) attached to the majority of especially tropical wetlands may be very high, as they represent unique and irreplaceable natural assets that generate significant environmental benefits. Moreover, the full value of these benefits may not always be realized currently but may only become apparent as these wetlands are preserved over time. But precisely because option values arise out of the uncertainty over future unknown wetland benefits, they are extremely difficult to estimate.

A further consideration is whether current uses of a wetland are sustainable. Direct uses of a wetland area, such as harvesting for fish and timber, may significantly affect ecological relationships in the long term. Such tradeoffs between current direct uses and the long run sustainability of important environmental functions may not be readily apparent. Thus, some attention must be paid to determining the *sustainable yield* of wetland resources with regard to current direct uses. Where it is apparent that current harvesting or exploitation levels exceed the sustainable yield of wetland resources, this must be taken into account in the analysis. There are currently two approaches for doing this. The first would be to incorporate an *alternative sustainability scenario* in the evaluation and conduct a comparative analysis. If the comparative analysis reveals that the alternative sustainability scenario yields higher social returns than the current use scenario, then clearly the former is socially more optimal. The second approach would be to incorporate within a portfolio of projects at least one *environmentally compensating project* to ameliorate the environmental degradation generated by other projects, thus ensuring overall sustainability of natural systems.

Valuation in practice

To illustrate the role of economic valuation in wetland management decisions as well as the application of specific valuation techniques, results of six case studies are presented in Annex I. These cover a range of wetland types, geographical regions, policy problems and valuation techniques. From temperate regions, there are case studies from the prairie potholes of North America and peat bogs or mires of Northern Europe, as well as from the extensive marshlands of East Anglia in the UK. The subtropical coastal wetlands of the Southeastern United States (Louisiana) are also considered. Tropical floodplain and coastal mangrove wetlands are represented, from both Africa and Southeast Asia. Various policy problems and appraisal methodologies are also included. These range from assessments of whether to convert wetlands to alternative uses, involving partial analysis, to the valuation of particular wetland functions (e.g., nitrogen

abatement) as an element in a broader planning exercise. Efforts more closely resembling total valuation, in that an attempt is made to value *all* functions of a wetland, are also represented. One case study, an assessment of mangrove conversion in Indonesia, takes a more innovative approach to the policy problem at hand, in light of the poor data concerning links between the ecological and economic systems concerned. Finally, there is a selection of valuation techniques represented, beginning with the more straightforward use of market price data, together with information about changes in productivity stemming from modifications to a wetland area. More sophisticated techniques, such as the integrated modelling of hydrological and economic systems, are presented for the assessment of complex ecological functions, such as nitrogen abatement. Contingent valuation, which involves the direct measurement of willingness to pay values, is also well represented, particularly in the temperate wetlands case studies.

Some clear patterns emerge. Most temperate wetlands studies recognize recreation as an important wetland use and most often use contingent valuation to obtain a measure for its value. In contrast, tropical studies are more concerned with the production values or direct uses associated with wetlands and the predominant valuation technique is likely to be measuring the changes in the value of productivity. The indirect uses or ecological services provided by wetlands are important in both zones and a more complex valuation technique, as was used to value nitrogen abatement in Sweden, will often be required. Unfortunately, such techniques are data-hungry and are expensive to implement, and for these reasons there are still relatively few instances where indirect use values have been successfully quantified.

Guidance notes: planning and conducting a valuation study

When evaluating wetlands, it is not always sufficient to provide evidence from economic studies of other wetlands, given the problems in transferring results from one wetland type to another or from one region to another. Consequently, resources must often be devoted to undertaking valuation studies of the wetlands of interest.

Preparing to undertake a valuation study: the appraisal framework

As described above, when planning a valuation study, it is necessary to think through a number of aspects before commissioning work to begin. First, the problem must be defined and the appropriate assessment approach chosen which will produce results which will assist with its solution. If the problem is a specific external impact, such as effluents polluting a wetland, *impact analysis* will be appropriate. If the problem is one choice between wetland use options, including conversion of the wetland to residential land or diversion of water upstream of the wetland to intensive irrigation, then a *partial valuation* would be the correct approach. Sometimes the problem is more general. For example, developing a national conservation strategy, as part of implementation of the wise use concept, may require assessment of the total net benefits of the wetland system. In this case, a total valuation should be undertaken.

The second stage involves defining the scope and limits of the valuation and information needs. The valuation may involve just the wetland itself, the river basin, for example, if upstream diversions are planned. The time scale may be short, if the impact is likely to be temporary, or very long if, for example, climatic change needs to be considered in a preliminary scoping study. The environmental functions of the wetlands need to be determined along with an initial assessment of their uses. For an impact analysis, only those characteristics most affected by the impact need to be assessed, whereas for partial valuation the characteristics which are critical for evaluating the various options. In total valuation one might try to estimate all major values.

Stage three involves preparing for the analysis itself, including the preliminary choice of valuation technique(s). Here it important to consider the financial, data, time and skills implications. First the policy maker must review the budget available, as this will determine the number of staff that can be employed, which may range from environmental economic consultants to survey staff, and the data collection methods. Data availability will determine the appropriate level of effort. In some cases it may be feasible to conduct primary data collection (if time and the budget are sufficient). In others, an application of benefits transfer may be all that can be achieved. Time may be short if results are needed for a fixed date when a decision will be made. The required skills may not be readily available and expatriate experts may need to be brought in to advise on, or undertake, the study. It is also important also to consider the other issues which may be considered alongside the economic valuation results when a decision is being made. These might include social and political considerations.

Seven steps to planning a valuation study

1. **define the wetland area and specify the system boundary between this area and the surrounding region;**
2. **identify the components, functions and attributes of the wetland ecosystem and rank them in terms of importance (e.g., high, medium, low);**
3. **relate the components, functions and attributes to the type of use value (e.g., direct use, indirect use and non-use);**
4. **identify the information required to assess each form of use (or non-use) which is to be valued and how to obtain the data;**
5. **use this information to quantify economic values, where possible;**
6. **review development plans and development options for the area and estimate the opportunity costs of conservation;**
7. **choose the appropriate appraisal method, e.g., cost-benefit analysis (CBA).**

Conducting the valuation study

Once planning of the study has been completed, the economic analysis can begin. There are essentially seven steps to be undertaken. The approach requires a multi-disciplinary effort. The economic analysis is dependent on ecological and hydrological data on the wetland and a quantitative understanding of its functioning. The main task of the economist will be to quantify the direct, indirect and non-use values of the wetland goods and services and to incorporate this analysis in the calculation of costs and benefits of actions. This seven-step guide can be used to management of a valuation study through the production of Terms of Reference for experts.

Conclusions

By providing a means for measuring and comparing the various benefits of wetlands, economic valuation can be a powerful tool in the management of global wetland resources and is a central component to implementation of the Ramsar Convention's wise use concept, which is the sustainable utilization of wetlands for the benefit of mankind. The economic value of any benefit is measured in terms of what we are willing to pay for it. However, economic valuation is not a panacea for all decision,s and it represents just one input into the decision-making process, alongside important political, social or other considerations. Some people argue that certain wetlands have a preeminent value in themselves beyond what they can provide in terms of satisfying human preferences or needs. From this perspective preserving wetland resources is a matter of moral obligation rather than efficient or even fair allocation. There may be other motivations for managing wetlands in particular ways, such as political considerations. Thus, economic values represent just one input into decision-making, alongside important other considerations. Nevertheless, quantitative measures of the benefits are crucial to making objective decisions concerning choices between different forms of wetland utilisation.

Recommendations

1. Economic valuation studies of wetlands should be undertaken to make sound decisions on development options and to set regional and national policy.

2. Economists, ecologists, hydrologists, agronomists, engineers and other experts should work together as a multi-disciplinary team to tackle wetland valuation
3. Economists, planners and decision-makers should be trained in wetland valuation techniques as part of a broad-based environmental management courses.
4. Case studies should be undertaken throughout the world in different wetlands and different economic situations, and using different techniques, to ascertain which methods are applicable under which circumstances and to focus fundamental research where it is most needed.
5. Two networks should be established: (1) a network of researchers to exchange results and to discuss basic principles, and (2) a network of practitioners to exchange experience of applying methods in different wetland types, focusing on the practicalities of finding information, undertaking surveys and assessing the response to questionaries.

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Annex I: Summary Information for Wetland Valuation Case Studies

Case Study	Wetland Type	Location	Policy Issue	Approaches/ Techniques	Sample Values
Barbier et al. (1993)	tropical floodplain	Hadejia-Nguru wetlands, Nigeria	allocation of flood flows	partial valuation; loss of productivity, market prices	net present value of agriculture, forestry and fishing benefits; N109 (US$ 15)/10^3m^3; N381 (US$ 51)/ ha (1989/90 prices, 8% discount rate over 50 years)
Hammack and Brown (1974)	freshwater ponds	Central North America	optimal conversion (drainage) for agriculture	partial valuation; CVM, production function, bioeconomic modelling	value of additional (marginal) waterfowl; US$ 2.40 - 4.65 per bird, depending on pond cost (1968-69 prices)
Bateman et al. (1993) Hanley and Craig (1991)	saltwater marsh upland peat bog	Norfolk Broads, U.K. Scottish Flow Country	feasibility of restoration; preservation or conversion to forest plantation	total valuation;CVM partial valuation; CVM	annual recreation and amenity use values; £67 - 140 (US$ 118 - 247)/year/respondent (1991 prices); present value of preservation benefits; £16.79 (US$ 30)/respondent (1990 prices)
Gren (1995)	riverine wetlands	Gotland, Sweden	nitrogen abatement	partial valuation; CVM, production function, replacement cost	value of nitrogen abatement using wetlands; SEK 349 (US$ 59)/kg N reduction capacity (1990 prices)
Costanza et al. (1987)	semi-tropical coastal marsh	Louisiana, USA	gradual destruction	total valuation; market prices, damage/production function, CVM, TCM	net present value of commercial fishery, trapping, recreation and storm protection values; US$ 2,429/ac (1983 prices, 8% discount rate over infinite time horizon)
Ruitenbeek (1994)	mangroves	Bintuni Bay, Indonesia	conversion to pulp production	total valuation; modified production function, sensitivity analysis	no information

"Environmental Impact Assessment: Towards Guidelines for Adoption under the Ramsar Convention"

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Appended to this written version of the technical session presentation is a suggested set of guidelines on environmental impact assessment for wetlands, which have been drawn up following wide consultation and which provide a basis for further discussion. The presentation itself begins by concentrating on the policy objectives of the issue, and the question of who needs what kind of standards or guidelines on what, and how to meet the need.

Obviously an enormous amount of different types of environmental impact assessment work is done all around the world. Ideas are constantly evolving on how to make it more widespread and more effective. There are specialised professions, degree courses, international institutes, government departments and a whole legal and scientific discipline devoted purely to this issue. The question is what extra value can be added to that, in the context of the Ramsar Convention?

This paper examines what it may be useful and possible to set out in formal international sets of principles. The Convention would appear to be one of the most relevant platforms from which to take this issue forward in future, in relation to wetlands. Some of the more recent development of EIA concepts, which broaden it into more strategic or holistic forms of appraisal, are briefly touched upon. There are various international guidelines in existence already, and some of these are mentioned.

Aspects of the specific appended "good practice" suggestions will be highlighted in the oral presentation, and feedback on the document as a whole is invited. Comments are also invited on delegates' perceptions of what their priority needs are, for guidelines, information, research, advice, training, etc. Draft Recommendation 6.2, submitted by the United Kingdom, offers the Conference a means of identifying the future steps it wishes to take.

Definition of Environmental Impact Assessment

Because there is such a variety of approaches and experiences, it is worth beginning with a basic definition of what I mean by EIA, so that the terms used here are clear. I would define Environmental Impact Assessment as a process of predicting and evaluating the effects of an action or series of actions on the environment, then using the conclusions as a tool in planning and decision-making. Hence it is a process, not a product.

One of the aims is to prevent environmental degradation; but this is done in two parts. EIA is just the first part, and all it does is to give planners and decision-makers better information about the consequences which development actions could have on the environment. The second step, of making sure that weight is given to that information, and that decisions are taken in a direction which gives an environmentally favourable result, depends on having additional policies or laws which embody the aim of securing such results.

This means that measuring the effectiveness of EIA is really about how well informed decisions are. The end result of a well-informed decision might still be damage to the environment; so the amount of environmental damage cannot be used as an indicator of how good the EIA system is.

EIA is multidisciplinary, systematic and predictive; it is therefore different, for example, from the more retrospective process of environmental audit. It can play a rôle in checking conformity with regulations, as well as investigating physical impacts.

Internationally adopted principles

Obviously the risk in trying to codify any principles which will work in any country of the world, is that they will be so basic and general as not to make much of a difference, or at least not to be very exciting. A significant amount has already been adopted by governments internationally. In a regional context, there are, for example, the European Union's harmonized laws under a Directive dating from 1985; and the UN Economic Commission for Europe Convention, signed in 1991, on Environmental Assessment in a Transboundary Context, also known as the Espoo Convention.

At a global level, the Rio Summit Declaration in 1992 and Agenda 21 both encourage the use of EIA, in a fairly general way. The Convention on Biological Diversity is more specific. Article 14 of that Convention requires Contracting Parties to introduce appropriate procedures for EIA of proposals which might have effects on biological diversity.

The Conference of the Parties to the Ramsar Convention has adopted many texts over the years which have some bearing on this, mainly in the interpretation of the obligation to promote the wise use of wetlands. A complete analysis of all the references to aspects which are relevant to EIA was undertaken for the first time recently (Pritchard 1995a). This showed a significant body of thinking which is already agreed by all the Contracting Party governments, and which therefore provides a useful starting point. In summary, the main points of this are as follows:

- The obligation to promote conservation and wise use of wetlands, and to act when change is "likely", entails anticipation, and requires a means of predicting effects.
- Environmental impact assessment is a recognized field which should be applied to this objective, by being formally enshrined in policy and law.
- Equally, the body of thought evolved under the Convention on, for example, what constitutes wise use provides a frame of reference to aid judgements made in the course of EIA about environmental effects, where wetlands are concerned.
- Competent experts should be involved in the process.
- EIA should be undertaken early enough to act meaningfully on its results, including refusing authorization for damaging activities.
- The process should continue into project implementation stages, so that actual effects can be monitored and compared with predictions.
- EIA should not be restricted to individual projects, but should address the cumulative effects of several projects, and also strategic plans, programmes and policies.
- EIA should not be restricted merely to the site of the proposed development, or the defined wetland, but should address external (e.g., upstream/downstream) influences, and should have regard to interactions between all components of water systems at the catchment level.

All of these points, and a few others, have already been formally agreed as tenets of good practice by Contracting Parties, and there is therefore no need to re-invent such fundamental principles. They are however scattered throughout many different documents, so the fact that I have now brought them all together in a single (separate) paper is hopefully of some help.

Special regard to wetlands, in EIA systems

If what is described above constitutes special regard for what EIA can do under the Ramsar Convention, there is also the converse process of special regard being given in EIA systems to the particular interests of wetlands. So, for example, the stage which is usually termed "screening" (where decisions are taken about which types of activities should be subject to EIA, and the unimportant ones are filtered out) could use Ramsar site listing as a trigger or an indicator of particular environmental sensitivity which would make EIA always a mandatory requirement for activities which might affect a listed site. Some systems already do this.

In the stage termed "scoping", i.e. deciding which potential environmental effects should be analyzed, the system could require that when a wetland is involved, some aspects should be analyzed on a catchment basis, and thus there would probably be coverage of a wider area than would otherwise be the case.

These are fairly elementary points, but once they are officially recognized, much more sophisticated approaches can be built on to them.

Another possibility would be a provision whereby the local land zonation, decree, planning instrument or whatever it is that creates the wetland site listing, actually itself articulates a decision about the type of circumstances which would lead to an EIA being required, and about some of the elements of the scope of any such EIA. This could therefore be made specifically relevant to the particular site or the particular local area.

More advanced developments of EIA-type concepts

There is considerable interest, flagged by (among others) the Ramsar Scientific and Technical Review Panel, in some of the more sophisticated versions of EIA-type concepts which are now being used more often.

The first is usually given a title along the lines of Strategic Environmental Assessment (SEA), or Programmatic EIA. This is concerned with assessment not just of single projects, but of the cumulative effects of several projects, and the frameworks of programmes, plans and policies within which they are promoted (see, e.g., Therivel *et al* 1992). Policy appraisal for the environment is a similar type of idea, and "sustainability analysis" is also linked.

There is then a class of initiatives which include Environmental Management Systems or Integrated Environmental Management, where appraisal and management of the environmental implications of programmes or projects is a continuing process throughout their life-cycles. Applications of this have been mainly developed as corporate management tools for businesses, and the International Standards Organisation (ISO) is among those refining good practice standards (see, e.g., Hunt & Johnson 1995).

These processes can all potentially be combined and related to one another, to give a kind of hierarchical model, where different forms of environmental investigation, prediction, evaluation, auditing, reporting and adjustment are made at different levels in the system, feeding into each other in a consciously planned way which avoids duplication. Some components of this will be designed in the interests of efficient internal corporate management, while others will be designed to serve the goal of accountability and regulation of what is done in the public interest.

The need for common standards and guidance

I turn back now to "project" EIA, to examine why there might be a need for common standards and guidance. Obviously, pooling the best examples of practitioners' experience around the world is helpful. This however might well occur anyway, without having to adopt semi-legal codes to bring it about.

In the case of regional economic integration organizations such as the European Union, it is clearly in their interests to standardize laws on this subject, so that member countries do not suffer differential competitive disadvantages by operating under different rules.

More generally, systematic and consistent régimes for these processes help to create stable and reliable operating conditions over a wide area, and reduce bias and abuses of the system. Furthermore, it is undesirable to have environmentally damaging activities being encouraged to concentrate in those countries which have the weakest standards of environmental protection: and at least a basic minimum agreed common standard, and a view about good practice, would help to reduce this problem.

Here therefore, it is suggested, is a key rôle for Ramsar, not so much in pushing forward the frontiers of the best evolving practice, wherever that may be (although certainly it can make a contribution to that), but in seeking to raise the minimum standard as high as it can be agreed to go, throughout the whole geographical and political range of the Convention's influence.

What guidance already exists?

Although they do not cater entirely for the specific task which is being suggested here, there are existing sources of guidance which should be taken into account. The guidelines used by development assistance agencies such as the World Bank (e.g., IBRD 1991a, 1991b) have an important rôle to play, and there are publications from the Organization for Economic Cooperation and Development which are also relevant (e.g., OECD 1992, OECD *in press*). Last year the International Institute for Environment and Development (IIED) produced a valuable directory of 150 sets of national, international and sectoral guidelines (Roe *et al* 1995), and at least twice this number are known to exist (University of Manchester EIA Centre 1995b).

Other sources worth consulting are international comparative studies of the approaches which different countries take to issues such as formal screening and scoping, public participation, independent review, questioning alternatives, post-project monitoring and so on (e.g., CEC 1991; Turberfield 1995; Wood 1995). Individual country studies, of which there are many, can be revealing as well.

Discussion of EIA at Wetlands and Development Conference, Malaysia 1995

Issues similar to these were discussed in a workshop at the International Conference on Wetlands and Development in Selangor, Malaysia, on 8-14 October 1995 (Pritchard 1995b). The workshop welcomed the suggestion that global standards might be adopted under the Ramsar Convention, and in its conclusions stressed the following points:

- The nature of EIA should be adaptable to the needs in hand, but it is more than just a tool for securing consent. Its ownership, decision-making purpose and planned follow-through into guiding of operational management must always be explicit. The human environment should also be assessed.

- EIA processes are often given insufficient status in project planning, and are thus activated later than they should be, and finish earlier than they should. Baseline data may be seriously deficient or not properly drawn on. Value judgements can be camouflaged, are too subject to bias or fail to be addressed. "Quality control", for example by peer review, is poor in most places. Most EIA régimes are insufficiently strategic.

- Cost is often cited as a constraint. In reality, this is often a failure to evaluate costs and benefits fully enough: the costs of poor EIA can be substantial.

- There is certainly a need to improve technical skills. A greater constraint, however, is insufficient political will to put skills to use, and to make time for the process to function properly.

- A tendency to secrecy prevents knowledge being shared as much as it should be.

- EIA should be integrated in an appropriate form into all levels of decision-making, addressing strategic and cumulative issues.

- The process should focus on those key aspects which affect choices and give a framework for monitoring, rather than measuring everything that can be measured.

- High level policy has to give significant weight to environmental values; otherwise even excellent EIA will have little or no influence.

- International guidelines on standards should be officially adopted.

- Costs and benefits should be more completely and openly appraised, including opportunity costs, long-term remediation costs, and accounting for intangibles.

- Systems should be designed and operated in a way which consults and works with the grain of community interests.

- Peer-review procedures and NGO scrutiny should be welcomed as a check on accountability, scientific rigour and follow-through.

- EIA should itself define provisions for monitoring, audit, review, feedback and adjustment over appropriate post-decision timescales.

The final "Kuala Lumpur Statement", containing the conclusions of the conference overall, echoed some of these points.

The content of guidelines which might be adopted

In framing the suggestions for guidelines appended to this paper, the analysis of previous Convention texts, existing sources of other EIA guidance, the conclusions of the 1995 meeting in Malaysia, comments from the Ramsar Scientific & Technical Review Panel and from a range of other experts around the world have all been taken into account. Roughly 40 points of principle or good practice are presented under the following 10 headings:

- To what should EIA apply?
- In what circumstances is EIA appropriate?
- How should EIA systems be put in place?
- When should the EIA be performed?
- Who should be involved, and how?
- What description of the environment is required?
- What potential impacts should be assessed?
- How should potential impacts be evaluated?
- How should avoiding/reducing/mitigating/compensating for impacts be addressed?
- How should the results be used?

Action at the present meeting

A working group on wise use and listed sites at the Ramsar Asian Regional meeting in New Delhi, India, on 23-25 March 1995, among other conclusions requested the Bureau and the STRP to develop guidelines on EIA affecting wetlands for submission and adoption at the Brisbane Conference. The Pan-European Regional meeting in Varna, Bulgaria, on 8-11 May 1995, among other conclusions welcomed the suggestion that draft guidelines on EIA in wetlands might be presented to the 6th Meeting of the Conference of the Parties in Brisbane, without waiting for the 7th COP as had been suggested in the draft Strategic Plan. The draft of the latter presented to the Conference as DOC. 6.14 still envisages (under Operational Objective 2.5) the 7th COP in 1999 being the occasion at which a development of the "Additional Guidance on Wise Use" addressing this issue might be agreed.

There are clearly a number of points of principle on which Contracting Parties would be likely to agree straight away – indeed, as has been shown above, much promising common ground is already enshrined in earlier decisions. Some may feel, however, that it would be more appropriate to undertake further work over the next three years before the Conference as whole should be asked to adopt a text.

In the meantime, a draft Recommendation (6.2) has been submitted to the present meeting by the United Kingdom. This would invite Parties and organizations to submit to the Bureau any existing guidelines on EIA which may be relevant to wetlands, so that they may be able to maintain an overview of the subject. It would also request that arrangements be made for drafting guidelines suitable for adoption at the next Meeting of the Conference of the Parties.

Participants are therefore invited to consider:

- the terms of draft Recommendation 6.2, and whether it matches their perception of the need and can be supported;
- the content of the suggested guidelines, and whether these match their perception of what is needed;
- possible improvements to the suggested guidelines;
- the current operation of EIA systems in their areas, in relation to the "good practice" principles outlined in this paper;
- other requirements for information, advice or support on EIA which could be met through Ramsar-related channels;
- additional examples of guidelines and standards, or other experience which they could communicate to the Bureau or to future meetings, for the benefit of Convention Parties.

Conclusion

This paper has referred to a considerable existing international understanding about EIA. Notwithstanding that, it also develops the case for the adoption of some globally applicable guidelines for wetlands, under the auspices of the Ramsar Convention's wise use principles. Views are invited on the possible content of these, and a suggested text is appended. Many individual states go a good deal further than this already, and that is well recognized; but the aim here is to offer a basic international minimum of agreed good practice. Feedback to the author would also be particularly welcome on good case studies of EIA in relation to listed Ramsar sites, experiences with other international guidelines, and perceptions of other advice and training needs in this area. It is to be hoped as a result that on this subject, as it does on many others, the Ramsar Convention will make the best "wise use" of its 25 years of valuable experience.

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APPENDIX

"[POTENTIAL DRAFT] GUIDELINES ON ENVIRONMENTAL IMPACT ASSESSMENT AS AN AID TO THE WISE USE OF WETLANDS"

Contents

Introduction

1. It could be argued that environmental impact assessment (EIA), in some form or other, is and always has been a major and fundamental part of what is implied in Article 3(2) of the Convention by "arrang[ing] to be informed ... if the ecological character of any wetland ... is ... likely to change as the result of technological developments, pollution or other human interference". In addition, it is increasingly understood to make a contribution to the obligation in Article 3(1) to "formulate and implement ... planning so as to promote the conservation of ... wetlands".

2. Many countries already operate legal and administrative systems to give effect to EIA, and an extensive technical literature, including practical guidance, already exists. The purpose of the present guidelines is to bring together and summarize the main principles which have already featured in texts adopted under the Convention, and to develop these in a form which can apply universally to all current and potential Contracting Parties.

3. International consistency of standards and approaches, as well as facilitating exchange of experience about good practice, can help to prevent damaging activities being "exported" to wherever they receive least scrutiny, and can help to level out competitive disadvantages of regulation. A systematic and consistent approach will tend to reduce bias. Within this, a range of methods are available for tailoring as appropriate to different circumstances.

Definition of EIA

4. Definitions vary, but EIA can be defined as a process of predicting and evaluating an action's impacts on the environment, from which the conclusions are used as a tool in planning and decision-making. It aims to prevent environmental degradation by giving planners and designers of actions, as well as decision-makers, better information about the consequences which (development) actions could have on the environment; although it cannot, of itself, achieve that protection. The approach is characterized by its multidisciplinary, systematic and predictive nature (as opposed, for example, to the more retrospective process of environmental audit), and in its better forms involves:

   - reviewing the existing state of the environment and the characteristics of the proposed action (and possible alternative actions);
   - predicting the state of the future environment with and without the action (the difference between the two is the action's impact);
   - considering methods for avoiding, eliminating or reducing any negative impacts, and possible compensation for them;

- preparing an environmental statement or assessment report which discusses these issues, and is used to inform and influence decision-making;
- after a decision is made about whether/how the action should proceed, monitoring the impacts which do occur, and acting on the results of such monitoring.

5. As well as informing the authority responsible for approving projects about foreseeable environmental consequences of the projects, EIA has or should have an important function in ascertaining whether projects will conform with applicable environmental protection laws.

6. Principle 17 of the 1992 Earth Summit Rio Declaration encourages the undertaking of EIA for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority. Chapter 8 of Agenda 21 refers to "comprehensive analytical procedures for prior and simultaneous assessment of the impacts of decisions, including impacts within and among the economic, social and environmental spheres", which procedures "should extend beyond the project level to policies and programmes".

Principles already accepted by Ramsar Parties

7. Existing texts adopted by the Conference of the Parties, particularly concerning guidance on applying the "wise use" concept, show a measure of common understanding already on some of the key tenets of EIA. The principles which have emerged in this way so far might be summarised as follows:

- The obligation to promote conservation and wise use of wetlands, and act when change is "likely", entails anticipation, and requires a means of predicting effects.
- Environmental impact assessment is a recognized field which should be applied to this objective, by being formally enshrined in policy and law.
- Equally, the body of thought evolved under the Convention on, for example, what constitutes wise use, provides a frame of reference to aid judgements made in the course of EIA about environmental effects, where wetlands are concerned.
- Competent experts should be involved in the process.
- EIA should be undertaken early enough to act meaningfully on its results, including refusing authorization for damaging activities.
- The process should continue into project implementation stages, so that actual effects can be monitored and compared with predictions.
- EIA should not be restricted to individual projects, but should address the cumulative effects of several projects, and strategic plans, programmes and policies too.
- EIA should not be restricted merely to the site of the proposed development, or the defined wetland, but should address external (e.g., upstream/downstream) influences, and should have regard to interactions between all components of water systems at the catchment level.

Principles of recommended good practice

<u>To what should EIA apply?</u>

8. The most common use of EIA techniques is in relation to single individual proposed development or land-use change projects at defined sites. Modifications to any of these, as well as the original initiatives, may also require assessment.

9. In principle, EIA is applicable also to programmes or sequences of several such projects, strategic plans within which these may be articulated, and the policies from which they derive. A hierarchical approach can avoid repetition at one level, of assessments carried out at another.

10. EIA is an important element of overseas development assistance programmes. Everything in these guidelines should be as applicable to this aspect of Article 5 of the Convention as it is to wise use under Article 3.

<u>In what circumstances is EIA appropriate?</u>

11. Whenever information is required on likely future change in ecological character of wetland sites, an EIA of the causative actions may be appropriate.

12. Some activities at some sites may safely be considered to have insignificant effects. EIA systems should incorporate a "screening" process to identify these as instances where it may not be needed. Such processes may take the form of listing exceptions to a general assumption that EIA will be required; or alternatively attempting to list all the circumstances where it will or may be required, and assuming that elsewhere it will not.

13. The nature of the proposed activity and the sensitivity of the location (the "receiving environment") may each determine these screening judgements. Criteria and thresholds could be adopted to assist with this. The presence of a listed wetland will be one criterion normally indicating a need for EIA.

14. In all cases where there is doubt or lack of scientific certainty about the likelihood of significant effects, a precautionary approach should be adopted and EIA undertaken.

How should EIA systems be put in place?

15. EIA systems should be officially enshrined within the policies, laws and administrations of the country.

16. Measures should be adopted where possible to ensure that:

- application is systematic, consistent and publicly accountable;
- legal implementation is enforced;
- quality standards are agreed and applied;
- guidance and advice on good practice is made available.

17. Sufficient status should be given to the EIA element in decision-making processes, alongside other considerations, so that it is seriously approached and genuinely influences outcomes.

18. Many developers exhibit good practice in often going beyond the strict minimum of legal compliance, and this should be encouraged.

When should the EIA be performed?

19. To an extent, EIA is an iterative process, which is important to each stage in the programme or project cycle, including post-project monitoring.

20. It is important to plan at an early stage for assessments to be carried out at times which will enable any necessary surveys to cover adequately the relevant periods for seasonal interests, and so that sufficient data can be collected to form a basis for reliable conclusions.

21. Assessments should also be planned early enough for their results to become available in good time to be acted upon, for example, by influencing key choices which may have to be made in project planning, e.g. between alternative locations or processes.

Who should be involved, and how?

22. EIA refers to the whole appraisal process, including acting on the results in decision-making. The part of this process which comprises carrying out the investigation and prediction of likely effects, and reporting on this, is typically undertaken by the project/programme proponent or his/her agents.

23. The risk of bias in this is reduced in those cases where the investigation is instead commissioned and supervised by the relevant decision-making authority, or where there are systems for independent verification or peer-review of the work according to recognized standards.

24. On occasion, the decision-making authority may itself be the proponent of programmes or projects which are subject to EIA. In such cases, transparent procedures which ensure impartiality should be followed.

25. It is conducive to an integrated approach, and to a true appreciation of project costs and benefits, when the costs of the EIA process are fully borne by the proponent. EIA as such would thus be an unsuitable use of external sources of "conservation" funding.

26. Whoever it is that carries out the assessment and evaluation stages (see below), it is obviously important that they should be proven to be suitably qualified professionals with the requisite expertise in the relevant field(s), and competent to apply correct methods with the rigour required.

27. Decision-making authorities should likewise equip themselves with the requisite technical expertise and advice for judging the adequacy or otherwise of assessments, and for taking their findings properly into account.

28. Provision should be made for consultation and participative involvement of local people, interested non-governmental organizations and the general public, in the EIA process.

29. Such people and organizations should be afforded an opportunity, in defined circumstances, to challenge information and observance of relevant procedures which they believe to be deficient.

What description of the environment is required?

30. To an extent, this will depend on the particular sensitivities and interests at stake in the location(s) concerned. Decisions should be taken on this in each case, as part of the process often referred to as "scoping".

31. Where wetlands are concerned, and impacts (see below) may relate to parts of a catchment or watercourse remote from the development activity, a baseline description of conditions in these wider areas may be necessary.

32. Where a listed wetland is involved, it will be appropriate to note all the functions, values and attributes on which the listing is based.

33. Where any protected area is concerned, the legal status of such protection, and the implications of this, should be part of the baseline description.

What potential impacts should be assessed?

34. This question should be addressed by a formal scoping stage early in the process. The answer will depend on the particular circumstances of each case, but impacts which should be assessed are likely to include:

- direct potentially detrimental effects on the functions and values identified in the baseline description, including delayed effects;
- any potentially beneficial environmental effects of the proposal;
- indirect effects, including influences on adjacent or upstream/downstream areas and/or the catchment;
- cumulative effects, adding together over different areas, times, processes, etc.;
- secondary impacts, e.g., of likely associated developments, connecting infrastructure, etc.;
- transboundary effects, of relevance to (an) adjacent jurisdiction(s);
- effects of each alternative or optional proposal under consideration (see below);

How should potential impacts be evaluated?

35. Following a description of the potential impacts, an evaluation of their significance should be presented. It is useful to distinguish these two aspects.

36. Absolute significance (e.g., in terms of the value in their own right, perhaps to the local community, of numbers of individuals of a species, or area of habitat affected) and relative significance (e.g., in terms of loss of a resource as a proportion of its total extent, or as a comparison with losses which would result from an alternative development option) should both be evaluated. Where there are uncertainties, or where data could not be obtained, this should be indicated.

37. The legal consequences or policy conflicts which may be precipitated by certain courses of action, if they are allowed, should also be made clear (e.g., departure from national policy, risk of breaching previous agreements, risk of litigation, or liability for compensation).

How should avoiding/reducing/mitigating/compensating for impacts be addressed?

38. EIAs should always include a consideration of available alternative locations, alignments, manufacturing processes and other ways of meeting the stated development need. If there are no feasible alternative options, this should be satisfactorily demonstrated.

39. The environmental effects of all alternatives studied should be compared, and the least damaging options identified.

40. For each alternative, methods for avoiding potentially damaging impacts should be explored as far as possible. Choosing a non-damaging alternative (including sometimes "no development") as the preferred option will usually be the best way to avoid harm.

41. The EIA should then consider possible means of mitigating or reducing unavoidable potentially damaging impacts, by adding or modifying measures within the development proposal. Where there is uncertainty, a precautionary approach should be taken.

42. Where there are unavoidable impacts which cannot be fully mitigated, but only once this has been shown, the question of compensation may arise. If this point is reached, the EIA should examine the scope for what measures may be feasible and appropriate. On occasion this may arise in the context of the provisions in Article 4(2) of the Convention.

How should the results be used?

43. Consultation on draft findings should be provided for, as mentioned earlier in these guidelines. Consultation with adjacent jurisdictions may be appropriate where there is a possibility of transboundary effects. All consultations should take place at a stage when it is possible to make modifications as a result to the environmental impact report or the development proposal.

44. If information presented in the impact report/environmental statement is considered deficient by the decision-making authority, they should have the ability to request further information and defer decisions until it is provided.

45. EIAs should be made available to the public, preferably with a summary written in non-technical language which could be separately published.

46. Relevant decision-making processes should give due weight to the results of EIA, such that unfavourable findings may be sufficient grounds to refuse consents or require modifications. Where there is uncertainty, a precautionary approach should be taken. Decisions should be published, showing the manner in which they have been influenced by any EIA carried out.

47. During the operational phase of consented programmes or projects, the EIA should be used as a framework for monitoring actual effects and comparing these with predictions, ensuring mitigation measures perform as expected, making any operating adjustments required, and reporting on this.

Conclusion

48. The guidance given above can be regarded as a minimum of good practice. Many countries and commercial operators observe more advanced standards than this. Others will require substantial building of institutional structures before they are fully equipped to give effect at every level to every aspect of what is described here. A wealth of more detailed technical material and training is available, and the Ramsar Bureau will endeavour to assist with enquiries about appropriate sources.