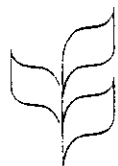




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**WETLANDS AND BIOLOGICAL DIVERSITY:
COOPERATION BETWEEN THE CONVENTION ON WETLANDS OF INTERNATIONAL
IMPORTANCE ESPECIALLY AS WATERFOWL HABITAT (RAMSAR, IRAN, 1971) AND
THE CONVENTION ON BIOLOGICAL DIVERSITY**

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COOPERATION BETWEEN

**THE CONVENTION ON WETLANDS OF INTERNATIONAL IMPORTANCE
ESPECIALLY AS WATERFOWL HABITAT (Ramsar, Iran, 1971)**

AND

THE CONVENTION ON BIOLOGICAL DIVERSITY

October 1996

Ramsar Convention Bureau

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EXECUTIVE SUMMARY

Wetlands - including (*inter alia*) rivers, lakes, marshes, estuaries, lagoons, mangroves, seagrass beds, and peatlands - are among the most precious natural resources on Earth. These highly varied ecosystems are natural areas where water accumulates for at least part of the year. Driven by the hydrological cycle, water is continuously being recycled through the land, sea and atmosphere in a process which ensures the maintenance of ecological functions.

Wetlands support high levels of biological diversity: they are, after tropical rainforests, amongst the richest ecosystems on this planet, providing essential life support for much of humanity, as well as for other species. Coastal wetlands, which may include estuaries, seagrass beds and mangroves, are among the most productive, while coral reefs contain some of the highest known levels of biodiversity (nearly one-third of all known fish species live on coral reefs). Other wetlands also offer sanctuary to a wide variety of plants, invertebrates, fishes, amphibians, reptiles and mammals, as well as to millions of both migratory and sedentary waterbirds.

Wetlands are not only sites of exceptional biodiversity, they are also of enormous social and economic value, in both traditional and contemporary societies. Since ancient times, people have lived along water courses, benefiting from the wide range of goods and services available from wetlands. The development of many of the great civilisations was largely based on their access to, and management of, wetland resources.

Wetlands are an integral part of the hydrological cycle, playing a key role in the provision and maintenance of water quality and quantity as the basis of all life on earth. They are often interconnected with other wetlands, and they frequently constitute rich and diverse transition zones between aquatic ecosystems and terrestrial ecosystems such as forests and grasslands.

Despite their importance, wetlands are among the most impacted and degraded of all ecological systems. In the past few centuries, they have been commonly regarded as unproductive, unhealthy lands. Many countries, often with government support and backing, have made considerable efforts to convert them from a "worthless" existence to economically viable systems for agriculture or fisheries production. Many have been filled with domestic and industrial wastes (some of which have been of a toxic nature), while others have been drained to create additional land for development.

In the past 50 years the rate of wetland loss has increased dramatically, and is still continuing. Agriculture has been one of the main reasons for this: persistent agricultural subsidies and surpluses have led to the transformation of hundreds of thousands of hectares of wetlands in the developed world. Elsewhere, the construction of dams has radically altered the water regime of many rivers. It seems likely that more than half of the world's wetlands may have been destroyed this century.

A renewed interest in the biological significance of wetlands has, in recent years, led to a better understanding of the economic and cultural value of many of the world's wetlands. As a result, more and more people are beginning to realise that, in their natural state, wetlands offer numerous benefits to society, for example, by providing clean water to towns, by protecting shorelines from storms, by sustaining a large proportion of the world's fisheries, and by providing valuable amenities such as recreational activities.

To maintain wetland ecosystems, and the many roles which they fulfil, an integrated approach to managing water resources is needed - one which accounts for the needs of all water users, and which achieves the conservation and wise use of wetland biodiversity. The challenge is to develop practical solutions for meeting this goal. One significant tool at the disposition of governments is the Convention on Wetlands of International Importance

especially as Waterfowl Habitat (Ramsar, Iran, 1971). This international treaty, often known simply as the "Ramsar Convention" (after its town of adoption), is designed to assist countries in managing their wetland resources in a manner that will lead to environmental benefits and improved living standards.

It is clear that the broad objectives of the Convention on Biological Diversity and the Ramsar Convention are mutually compatible and that there is considerable scope for close cooperation between the two agreements at all levels (Contracting Parties, technical bodies and secretariats). The secretariats have already started the process by signing in January 1996 a Memorandum of Cooperation (MoC), whilst the two Conventions' technical bodies (SBSTTA and STRP) have built upon the MoC by establishing practical working relations.

This paper responds to Decision II/13 of the Second Conference of the Parties to the Convention on Biological Diversity on "Cooperation with other biodiversity-related conventions" and to the Ramsar Convention's Strategic Plan (1997-2002), and represents a further step in the ongoing process of working together.

Only through cooperation aimed at synchronising their actions to implement both treaties, will the Conventions' Contracting Parties achieve the long-term conservation and wise use of wetlands and their biodiversity world wide.

1. INTRODUCTION

1.1 International programmes for wetland conservation and the Convention on Wetlands or Ramsar Convention

1. Wetlands have aroused considerable attention in recent years as appreciation of the direct and indirect benefits of these ecosystems has increased. This awareness has taken place not only among the general public but also at the highest political levels. Individuals, backed by national and international non-governmental organisations, have taken up the environmental cause and pressed governments for action. As a result, more and more governments have subscribed to legally binding conventions or treaties on environmental matters.

2. During the 1960s, European scientists and conservationists linked the decline of waterfowl populations with wetland habitat loss, drainage, pollution and excessive hunting, and recognised the need for an international treaty which would protect wetland ecosystems. Meanwhile, in North America, there had been considerable efforts to maintain and enhance wetlands, even prior to World War II. However, it was not until 1971, in the Iranian city of Ramsar, that the text of the Convention on Wetlands of International Importance especially as Waterfowl Habitat was adopted, following several years of international discussions. Since it entered into force in 1975, a total of 94 states have become Contracting Parties to the Convention on Wetlands or "Ramsar Convention" as it is often known. More details of the Ramsar Convention are given in Section 3.

3. Development and implementation of the Ramsar Convention has been greatly assisted by the continuing role and support of a number of organisations, including BirdLife International (formerly ICBP - International Council for Bird Preservation), IUCN - The World Conservation Union, Wetlands International (formerly IWRB - International Waterfowl and Wetlands Research Bureau, AWB - Asian Wetland Bureau, and WA - Wetlands for the Americas) and WWF - World Wide Fund For Nature. In addition to their support of the Ramsar Convention, many of these organisations operate independent international programmes in support of wetland conservation and the wise use of wetland biodiversity.

4. In addition to these partner organizations, the Ramsar Convention works closely with other international bodies dealing with wetland matters; these include a number of UN organisations, and in particular the UNEP "Regional Seas" initiatives, notably in the Caribbean and the Mediterranean, and the Food and Agriculture Organization (through its Wildlife Division). In addition Ramsar works with the 'MedWet' initiative for conservation and wise use of Mediterranean Wetlands, the International Coral Reefs Initiative, and the North American Waterfowl Management Plan. The European Commission has recently published a comprehensive "Communication on the wise use and conservation of wetlands".

5. The original focus of the Ramsar Convention was on wetlands as a habitat for waterfowl. But, over the years, it has developed into an international instrument dealing with wetlands from a broader point of view. Ramsar's Strategic Plan (1997-2002)¹, adopted in Brisbane, defines a number of new orientations for the future, including greater emphasis on education and public awareness in order to generate support for wetland conservation. (The Ramsar Strategic Plan is being distributed at the third Conference of the Contracting Parties to the Convention on Biological Diversity in English, French and Spanish as document INFO. 41). Attention is also given to capacity building through support and training programmes, especially in developing countries and those whose economy is in transition. The greatest emphasis will be placed on establishing National Wetland Policies, while implementation of the Ramsar Convention will place higher priority on land use planning, especially at the coastal zone and catchment levels, in the context of wetland

conservation and wise use. Special attention will be given to the relationship between wetlands and water resource management. The actions defined under the Ramsar Strategic Plan are thus entirely in conformity with Article 6 of CBD ("General measures for conservation and sustainable use") and can contribute to the implementation of Article 6.

6. A resolution adopted at the 6th Meeting of the Conference of the Contracting Parties to the Ramsar Convention in Brisbane, Australia, in March 1996 welcomed the "Memorandum of Cooperation between the Ramsar Convention Bureau and the Secretariat of the Convention on Biological Diversity signed on 19 January 1996".² This resolution also requested that the Ramsar Bureau "give priority in its programme of work to the implementation of the [above-mentioned] Memorandum of Cooperation", and invited the Third Meeting of the Conference of the Contracting Parties to the Convention on Biological Diversity, to be held in Argentina from 4-15 November 1996, to include in its agenda a report on "progress achieved and problems encountered in implementation of the Ramsar Convention for conservation of wetland biodiversity, thus noting the complementarity of interests of the two Conventions".

1.2 National initiatives for conservation of wetlands

7. Recommendation 4.10 of the Ramsar Convention calls on Contracting Parties to formulate National Wetland Policies³. This is seen as an important step towards facilitating conservation and wise use of wetlands and the implementation of the Wise Use Guidelines of the Ramsar Convention. Such broad approaches are needed in order to go beyond site-specific policies towards a more integrated national framework. Such National Wetland Policies may be formulated in a manner appropriate to a given country's national institutions and may be part of the country's national environmental policy for conserving biological diversity. To assist with development and co-ordination of such policies, the Ramsar Bureau will prepare a framework report for development and implementation of National Wetland Policies for use by Contracting Parties who, as yet, have no policy of this nature.

8. Several countries have already completed, or are in the process of completing, National Wetland Policies or similar instruments, while some, such as Canada and Uganda, have already formally adopted these policies. No National Wetland Policies have yet been finalised in the Asian region but considerable progress has been made by various Contracting Parties.

9. Countries are committed to developing management plans for all Ramsar sites. Many such sites already have management plans in place, and some countries are undertaking land-use planning exercises at coastal and catchment area levels, often applying the guidelines⁴ developed under the Ramsar Convention. Financial constraints remain a major problem for many countries - especially developing countries - in undertaking the preparation of management plans and their implementation. In this regard, the Operational Strategy of the Global Environment Facility⁵ recognises that enabling activities may help to prepare the foundation for design and implementation of effective response measures required to achieve Convention objectives.

10. Contracting Parties to the Ramsar Convention have undertaken national and or sub-national wetland inventories, and some of them are putting into place monitoring programmes to identify any changes in the ecological character of their Ramsar sites, an obligation accepted under Article 3. In many countries, especially developing countries, availability of funding is as serious a constraint as the often inadequate number of professionals in the field. Training of personnel in the field of conservation and wise use of wetlands is an obligation accepted under Article 4 by Contracting Parties to the Ramsar Convention. This activity still requires further attention, although it has been specially emphasised in recent years with support from several countries such as the USA, the

Netherlands, Japan, and others, either directly or through donations to the Ramsar Small Grants Fund and Wetlands for the Future initiative.

11. National Ramsar Committees are being established, and most countries already have some sort of national committee dealing with wetland or environmental issues, which also deals with the implementation of the Ramsar Convention in the country concerned.

1.3 Cooperation between CBD and the Ramsar Convention

12. Many of the objectives of the Ramsar Convention are in keeping with those of the CBD, both at the level of management of natural resources, in the quest to achieve wise (sustainable) use of natural resources (especially water), and in the conservation of wetland biodiversity. There is therefore much potential for closer integration between these two international treaties. Section 4 provides a broad overview of selected articles of the CBD, together with some of the actions already taken under the Ramsar Convention; the purpose of this analysis is to demonstrate areas of common concern between these two treaties and identify other aspects of mutual interest where combined efforts between the two Conventions might be of benefit to each other, specially to Contracting Parties.

13. The broad objectives of the Convention on Biological Diversity and the Ramsar Convention are mutually compatible and there is considerable scope for close cooperation between the two agreements at all levels (Contracting Parties, technical bodies and secretariats). The secretariats have already started the process by signing the January 1996 Memorandum of Cooperation (MoC), whilst the two Conventions' technical bodies (SBSTTA and STRP) have built on the MoC by establishing practical working relations.

14. The present paper responds to Decision II/13 of the Second Conference of the Parties to the Convention on Biological Diversity on "Cooperation with other biodiversity-related conventions" and the Ramsar Convention's Strategic Plan (1997-2002) and represents a further step in the ongoing process of working together.

15. Only through cooperation, aimed at synchronising their actions to implement both treaties, will the Conventions' Contracting Parties achieve the long-term conservation and wise use of wetlands and their biodiversity world wide.

2. WETLANDS AND BIOLOGICAL DIVERSITY

2.1 What are wetlands?

16. According to the Ramsar Convention, wetlands are defined as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres" (Article 1.1). In addition, the Ramsar Convention (Article 2.1) provides that wetlands "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands". As a result, coverage of the Ramsar Convention may be extended to include not only obvious freshwater resources such as rivers and lakes, but also coastal and shallow marine ecosystems, including coral reefs, artificial water bodies and underground water resources.

17. Wetlands are dynamic, complex habitats. Many wetland sites are either continuously submerged or intermittently inundated by seasonal flooding or daily/seasonal tides. They exhibit enormous diversity in size and shape according to their origins and geographical location, their physical structure, as well as their chemical composition. Characteristic flora and fauna are largely defined by the water depth, current and intensity, underlying

soil structure, sediment composition, water temperature and, in coastal regions, reach of the tide.

18. Wetland classification frequently refers to their fertility, which is in turn a reflection of their nutrient content. This ranges from the poorest, ultra-oligotrophic and oligotrophic waters which are clear and highly oxygenated, through mesotrophic, eutrophic and hypereutrophic waters, the latter being characterised by high levels of nutrients, low levels of oxygen and high algal levels. Eutrophic waters support few higher plants or animals.

19. Definitions of wetlands vary considerably: a classification of wetland types was adopted by the Ramsar Convention in Recommendation 4.7.⁶ Several broad wetland types can, however, be identified: lacustrine (wetlands associated with lakes), riverine (wetlands along rivers and streams), palustrine (marshes, swamps and bogs), marine (coastal wetlands, including rocky shores and coral reefs), estuarine (including deltas, tidal marshes and mangroves), and artificial water bodies (fish ponds, reservoirs and artificial lakes).

20. While most wetlands are natural sites, artificial water bodies are also included under the Ramsar definition in view of their ecological and cultural importance. Artificial lakes and other impoundments created by the strategic blocking of a river or stream may give rise to life-supporting ecosystems that can, if properly managed, benefit people and wildlife.⁷ During the Middle Ages, French monks created artificial lakes to produce fish: Brenne, Bresse, Champagne, Dombes and Sologne are among the regions which owe their landscape, culture and part of their economy to ancient, 800 year old man-made wetlands.

21. Wetlands occur in every country - from the tundra to the tropics. The World Conservation Monitoring Centre has suggested an estimate of about 5.7 million square kilometres - roughly 6% of the Earth's land surface.⁸ The greatest proportion is made up of bogs (30%), fens (26%), swamps (20%) and floodplains (15%), with lakes accounting for just 2% of the total. Mangroves (with some 80 species of trees and shrubs) cover about 240,000km² of coastal area and an estimated 600,000km² of coral reefs remain worldwide.

2.2 Filling many roles

22. Wetland ecosystems, by definition, depend on water to maintain their ecological functions. The hydrological cycle renews the flow and quantity of water in rivers, aquifers, lakes and all other freshwater ecosystems. These are complex ecosystems, the boundaries of which are often in a state of flux. Wetlands are therefore easily affected by external events. Nutrient and sediment loads, for example, are frequently moved from one site to another, and from one habitat to another. Thus, nutrients obtained in the headwaters of a stream may find their way into lakes or fens. Minerals and nutrients not absorbed by living freshwater organisms may find their way into the marine ecosystem, often thousands of kilometres from where they first entered the water. While the fluid nature of such exchanges guarantees a continued renewal of energy, it also represents a major potential hazard since many harmful agents (pesticides, fertilisers or other chemicals) can also be easily and rapidly transported to other areas where they might have an adverse impact on the environment.

23. Different categories of wetlands perform different functions, many of which are not immediately obvious: coastal wetlands (mangroves, estuaries, salt marshes, seagrass beds, coral reefs and mudflats) are vital spawning and nursery areas for large numbers of fish. Inland wetlands - rivers and lakes - not only provide abundant food and income for millions of people, but also serve as an essential lifeline for communications: goods have been traded along all major rivers for centuries. They are the natural storehouses of considerable levels of biological diversity and provide the life support systems for much of humanity. They play a vital role in sediment and erosion control, flood control, maintenance of water quality and abatement of pollution, maintenance of water supplies (including groundwater) and support for fisheries.

24. While no single wetland fulfils all of these functions, wetlands do yield multiple benefits. Mangroves, for example, serve as natural breakwaters, shielding tropical shorelines from cyclones and hurricanes. The trees also yield valuable timber and fuel wood; thatch for building; fibres for textiles and paper; tannins, resins, dyes and oils; as well as medicines from the bark and leaves. A range of fruits, fish and shellfish are also collected, many of which are of importance to local communities in terms of subsistence and income-generating opportunities.

25. People do not always appreciate the range of services provided by wetlands. Reed beds, for example, act as natural filters purifying water that flows through. They also provide habitat for many species: fish and birds breed among the roots and stems. The reeds themselves are often cut and dried to make baskets or are used as roofing materials. In South America, vast shallow wetlands such as the Pantanal in Bolivia, Brazil and Paraguay slow the flow of water in the Paraguay River, thus avoiding catastrophic flooding downstream. The loss of this natural "sponge" function would result in extensive damage downstream.

26. In addition to their ecological importance, wetlands are indirectly responsible for considerable economic and social benefits, including maintenance of fisheries, provision of water supplies (maintenance of quality and quantity), support to agriculture, wildlife resources and timber production, providing energy resources (peat and plant matter), transport, and supporting important recreational and tourism opportunities. Wetlands also contribute to climatic stability through their role in global water and carbon cycles.

27. In some areas rural economies and human well-being are closely dependent on freshwater resources. Riverine floodplains are of considerable local and national importance on almost every continent. Commerce in the Inner Delta of the Niger River, Mali, illustrates how closely humans depend on such habitats. Covering an area of 30,000km², this delta supports more than half a million people; its post-flood grasslands provide grazing for about two million head of livestock and the region is of major importance for seasonal transhumance practices. In 1985 alone, export of cattle, sheep and goats accounted for US\$8 million. In addition to agricultural practices, some 80,000 fishermen depend on the floods: more than 60,000 tonnes of fish were landed in 1986. The delta also accounts for more than half of the country's rice growing area. Interruption or loss of these services would represent considerable economic and social hardships.

28. Despite these values, human societies have had considerable impacts on wetlands throughout history. The services provided by wetlands have long been taken for granted and, as a result, maintenance and management of natural wetlands has been a low priority. Emphasis must now be placed on sustainable productivity rather than short-term increases in production, with long-term costs.

2.3 Productive ecosystems

29. Wetlands can be highly productive ecosystems. Soils are often rich in minerals and other nutrients and may produce more than 50 times as much plant material as a similar area of grassland, or eight times as much as a cultivated field. Estuarine ecosystems, which include mangroves and seagrass beds are among the most productive ecosystems on Earth.

30. The main primary producers of energy in wetlands are plants and microscopic plankton, whose output is directly related to sunlight and the availability of nutrients. These components serve as the foundation for broad, complex food webs, the nature of which differs considerably between and within different habitats. Numerous species of fish breed and mature in rivers and estuaries, or among mangroves, before going to sea for much of the remainder of their lives; around two-thirds of all fish consumed by people depend on coastal wetlands at some stage of their life cycle. The high concentrations of

animal and plant life in such ecosystems are often exploited by local communities and represent important sources of food as well as a means of income generation.

31. The high productivity of wetlands also provides support for large numbers of birds, many of which depend on a network of wetland sites during long seasonal migrations, or as breeding or overwintering grounds. The importance of these habitats for bird diversity is further illustrated by the high dependence of threatened and endangered species present. In the United States, for example, even though wetlands comprise less than 5% of the total land area, 70% of the federally listed threatened bird species and 40% of the federally listed endangered species are wetland-dependent.

2.4 The biological diversity of wetlands

32. Wetland ecosystems are cradles of biological diversity, providing the water and primary productivity upon which countless species of plants and animals depend for survival. They support high concentrations of birds (especially waterfowl), mammals, reptiles, amphibians, fish and invertebrate species. Levels of species diversity do, however, vary considerably between different wetland ecosystems: some lakes display high levels of diversity and endemism, whereas others support little life. Unlike terrestrial ecosystems, the richness of freshwater biodiversity is still poorly known. Identification and classification of wetland species is hampered by the fact that many species may spend part of their life cycle in both freshwater and marine ecosystems.

33. Wetlands are an important storehouse of plant genetic materials. Rice, a common wetland plant, is the staple diet of more than half of the world's population. West African rice (*Oryza glaberrima*), for example, was domesticated over 2000 years ago and wild rice from other wetlands continues to be an important source of new genetic materials in developing disease-resistant and higher-yield strains. A wide range of important woody species are also found in wetlands: many bear adaptations to changing hydrological conditions (changes in water regimes or increased salt levels) and may be of value in the context of global climate change and rising sea levels. Conserving the genetic variability of such plant resources is therefore essential.

34. Of the 20,000 species of fish in the world, more than 40% (approximately 8500 species) live in freshwater. Diversity amongst these species is highest in the tropics: South America has the most species (2220 species, of which more than 1000 are in the Amazon River basin). Africa is home to at least another 2000 species, with more than 700 occurring in the Zaïre River basin. Asia has an estimated 1600 species, but this number is increasing as additional research is undertaken.¹⁰ The importance of these figures is only fully appreciated when compared with the relatively meagre number of species in Europe (about 200). More than 4000 species of amphibians have been described, virtually all of which are dependent on the availability of water for breeding and larval development. Many reptiles (turtles and alligators) are also dependent on wetlands for feeding and breeding.

35. Wetlands are renowned for their high levels of endemic species, especially fish and invertebrates. Nowhere is this more obvious than in the East African Rift Valley lakes (Victoria, Tanganyika, Malawi) which support exceptionally high levels of endemic fish: more than 700 endemic species of cichlids have been recorded. Some 80% of the cichlids in Lake Tanganyika are endemic. A survey conducted by the World Conservation Monitoring Centre showed that 18 "hot spots" for biodiversity contained 737 species of amphibians alone, clearly demonstrating the importance of wetlands in maintaining biological diversity.¹¹ Many wetland species are now threatened as a result of habitat loss and/or hunting. Crocodiles have been especially impacted: of the 21 known species, seven are endangered worldwide and an additional three considered vulnerable. One of the most

seriously threatened is the Orinoco crocodile (*Crocodylus intermedius*), which is now reduced to a few hundred animals in Colombia and Venezuela.

36. Wetlands are also home to many highly specialised species; for example, in Africa, the common hippopotamus (*Hippopotamus amphibius*) has evolved eyes, nostrils and ears on the top of its head to enable long periods of submersion in water to avoid exposure to the sun of its sensitive skin. Some flamingo species (*Phoenicoparrus sp*) in South America are adapted to live in hyper-saline lakes at altitudes above 3000 m above sea level, where they feed on microscopic organisms sieved with a highly specialised curved bill. Cave-dwelling fish are among the most restricted of all wetland species in view of their confined habitats. A few species have functional eyes but, for the majority, vision is of little use. Almost 50 species (13 families) of cave-dwelling species have been identified in some 40 sites worldwide.¹² At any one site, however, neither the number of individuals or species is high: most often just a single species is represented. These species face a wide range of threats: drainage, water diversion schemes, habitat destruction, pollution and pet trade.

37. One of the most impressive concentrations of wetland fauna is the number of migrating waterfowl that visit these sites during annual migrations to and from feeding and breeding grounds. These flyways are not just international but inter-continental. Seven million shorebirds breeding in northern Eurasia winter along the Atlantic shores of Africa. Individual wetlands, such as those of the Inner Niger or Senegal deltas are especially important as these are some of the first freshwater bodies south of the Sahara: more than three million migrants, mainly ducks and waders, use these deltas every year. In North America, over 12 million ducks breed each year in the northern USA: these wetlands, together with those of the Canadian prairies, host over 60% of the continent's breeding duck population.

2.5 Assigning values to wetlands

38. Putting an economic tag on wetlands and the many functions they provide has proven very difficult, but has become increasingly necessary. Recommendation 6.10 of the Ramsar Convention¹³ recognises that it is "vital that all wetland economic values be identified, measured and reported upon to increase national and international awareness of the needs for and benefits of wetland conservation". Appreciation of the "real" value of wetlands is now growing, partly because of the realisation of the costs involved in providing alternative services if those of wetlands are destroyed or degraded. The value of wetlands in maintaining global fisheries is one such example: two-thirds of the fish caught worldwide hatch or spend part of their life cycle in tidal areas; an estimated 90% of the fish harvested in the Gulf of Mexico (worth US\$700 million each year) consist of species dependent on coastal mangroves; shrimp fisheries in Thailand have been valued at US\$2000 per hectare; the value of annual scallop harvests on the Niantic River, Connecticut, USA, is greater than that of prime beef on an equivalent area of grazing land.¹⁴

39. The economic value of wetland conservation is also being appreciated: in the United States, the value of wetlands in preventing serious flooding has been put at US\$13,500 per hectare per annum. Fur trapping in North American marshes is thought to be worth from US\$151-401 per acre¹⁵, while reed cutting in East Dongting Lake, China, generates about US\$1.25 million each year.¹⁶ A study of recreational values of wetlands in England has suggested that they are worth from US\$100-210 per visitor each year.¹⁷

40. Economic realisations such as those noted above are now proving powerful incentives for protecting wetlands. Wildlife-based tourism accounts for a considerable proportion of this: in the United States, five million Americans spend more than US\$638 million a year visiting waterfowl refuges. Wildlife safaris in the Okavango Delta, Botswana, are worth about US\$13 million a year, while more than half of the GNP of the Bahamas comes from

people holidaying on its coasts. Australia earns some US\$90 million each year from visitors to the Great Barrier Reef. At the same time, however, many countries are unwittingly destroying these resources: of the 109 countries with significant coral reef communities, 93 are damaging them. In over 50 countries, coral is being smothered by silt; in nearly 70 countries, corals have been affected by dredging and land reclamation.¹⁸ Mining corals for building materials and the use of dynamite and other explosives for fishing has caused irreparable damage to many coral ecosystems.

2.6 Managing wetlands

41. Humans have a long history of manipulating water resources for their own needs. Many former civilisations, such as those of the Nile Delta and Far East, were based on control and sharing of the annual floodwaters. Irrigation tanks of South India and Sri Lanka have served communities for 2000 years; ancient complex irrigation systems were developed in the Yemen. In ancient Mesopotamia, irrigation supported a population of 17-25 million some 4000 years ago; the population is now 10 million and food has to be imported. Civilisations of the Peruvian deserts disappeared when their irrigation systems failed. Rice cultivation on the River Niger has for centuries been closely adapted to the annual flood regime. In Guinea Bissau, the effectiveness of the hydraulic systems created by the Balanta and Feloupe people for rice cultivation in saline areas is still unequalled by modern methods.

42. In Europe, people have a long tradition of farming the floodplains of many large river basins. Such practices were carried out in a consistent, regulated manner in keeping with seasonal water cycles and respect for natural resources. Each year, fodder and grazing rights would be decided and respected; fallow periods were common and extensive. This allowed the development of characteristic rich assemblages of plants and animals. Changing practices, however, have meant a reduction (and loss) of such fallow periods, with increased agriculture and altered flood regimes as a result of dams and canalisation projects upstream.

43. Locally-based initiatives have often proved to be effective means of regulating and managing natural wetland resources. Lessons learned from these suggest that maintenance of traditional practices, combined with new technology and small-scale development, is vital in order to meet increased demands of growing populations. Responsibility for, or ownership of, resources and the right to use and benefit from them often form a better basis for sustainable use than free use open to everyone. Local concerns have also proved important in preventing certain development schemes which would have resulted in the destruction of important biological and cultural sites.

2.7 Diminishing resources worldwide

44. The rate of wetland loss cannot be quantified for most countries, but it is believed that more than half of the world's wetlands may have been destroyed this century. In the USA, at least five States (California, Ohio, Iowa, Indiana and Illinois) have lost more than 85% of their wetlands since the 1780s. Drainage - one of the most common actions - has been carried out to counteract flooding, reclaim land and add to food production, and combat diseases (although the latter has not been a successful measure and has even led to the introduction of other diseases). Many northern countries have developed policies that promote the destruction of wetlands: a French Government study has found that 86% of the most important wetland sites in France have been degraded as a result of official public policies imposed from 1964-1994 which encouraged drainage and wetland conversion. The European Common Agricultural Policy has resulted in significant loss of wetlands in western Europe: turloughs - seasonal lakes in limestone regions - have almost been eliminated in Ireland, while many important nature reserves have been destroyed in the United Kingdom. Spain has lost an estimated 60% of its original wetland area, while 73%

of the marshes in northern Greece have been drained since 1930. As a result of such actions, wetlands are now probably the most threatened habitats in Europe.¹⁹

45. The ecological, social and economic consequences of such losses are considerable: in the Philippines some 300,000 hectares (67% of the country's mangrove resources) were destroyed from 1920-1980, 170,000 hectares being converted to fish ponds.²⁰ Habitat losses of this nature and scale could easily result in the local or global extinction or reduced performance of a large number of species. In Nigeria, the floodplain of the Hadejia river has been reduced by more than 300km² as a result of dam construction, reducing the area of fertile land. Fish catches and floodplain harvest declined over 50% in an area extending 200km downstream of the Kainji Dam in Nigeria: losses of yam production were reported at 1000 tonnes.²¹

2.7.1 Water management problems

46. Many countries experience prolonged periods of drought, leading to crop failure and loss of human life. Years of drought are often followed by floods and, while some countries suffer from repeated devastating droughts, neighbouring countries may have to deal with excess supplies of water. In an attempt to guarantee regular water supplies, people have intervened in many parts of the world to alter the natural water cycle through the construction of dams for irrigation and hydro-electric power. The environmental impacts of these structures has been a cause of increasing concern.

47. As of 1988, some 39,000 large dams had been constructed.²² In the majority of cases, the construction of such dams has had significant, and usually negative, impacts on the local environment through loss and alteration of habitat, displacement of people, and altered agricultural and fishing practices. Blocked by dams and diverted to cities and farmland, the flow of the Colorado River into the Gulf of Mexico dropped from an average of 20 billion cubic metres at the beginning of this century to almost zero in all but flood years. Such changes in flow rates can have significant effects on certain species - by interrupting breeding cycles - the effects of which will later be multiplied through the ecosystems by a series of knock-on effects.

48. In many countries, wetlands have disappeared when river waters have been diverted for agricultural use (for irrigation), or to supply large cities. Excessive water withdrawal from the Aral Sea catchment area, mainly for irrigation purposes, is largely to blame for the serious reduction in size of this once important water body. Formerly identified as being the fourth largest lake in the world, it now ranks sixth. The volume of water entering the lake has dropped from 55 million cubic metres a year to about seven million cubic metres, leading to increased salinity. Biological productivity has also declined: 20 of the lake's 24 native fish species have disappeared. In the 1950s, fish catches were of the order of 44,000 tonnes a year and supported 60,000 jobs: the local fishing industry has now been almost wiped out.

49. Although some improvements have taken place in the manner in which water is used in many countries, this is far from being standard. One of the reasons why water is commonly wasted is because it is under-priced: subsidies are still commonly applied in developed and developing countries, particularly within the agricultural sector. Increases in the human population and level of economic development have meant that the demand for fresh water has continued to grow. Global water withdrawals are estimated to have increased by a factor of four in the period 1940-1990.²³ Current patterns of freshwater use cannot be sustained if human populations reach 10 billion by 2050 and it is likely that serious water shortages will be encountered in certain countries. One study has estimated that 13-20% of the world's population will live in water-scarce countries by 2050.²⁴

50. Irrigation and waterlogging may also lead to salinisation of soils and loss of productivity, as water near the surface evaporates and leaves behind a damaging residue of

salt. Some 17% of the world's agricultural land is irrigated: some countries rely almost entirely on irrigation - Pakistan (77%) and Egypt (100%), for example. According to some estimates, waterlogging and salinisation may be sterilising some 80 million to 110 million hectares of fertile soil worldwide.²⁵

2.7.2 Introduced species

51. The translocation of exotic species - plant and animal - may affect indigenous wildlife communities (and even entire populations) by displacing native species and genotypes, or by becoming pests or pathogens of species with which they did not co-evolve. A predatory cichlid (*Cichla ocellaris*) was introduced to Lake Gatun in Panama as a food fish but, as its population grew, it eliminated many native species and caused a reduction in overall biodiversity of the lake. There has since been a resurgence of malaria in this region as many of the fish that would have consumed mosquito larvae have been displaced by the introduced species. Other exotic species introduced as "sport" fish to Lake Titicaca have decimated populations of endemic *Orestias* fishes. Brown trout introductions in South Africa would likewise have caused the extinction of the endemic *Oreodaimon quathlambae* if a waterfall had not prevented the trout from moving upstream. In addition to the ecological changes which may develop from such introductions - which may be deliberate or accidental - local culture and economies may also be impacted. The introduction of the Nile perch (*Lates*) to Lake Victoria resulted in significant revenue loss to local communities as the artisanal fisheries on which these people depended were decimated as a result of altered species diversity and the introduction of modern trawling vessels.

52. Such experiences are not confined to fishes. Water buffalo introduced to Australia's Northern Territory in the early 1800s have caused enormous damage to fragile wetland ecosystems, particularly waterholes and floodplains. Destruction of native vegetation by trampling and grazing has allowed introduced weeds to become established.

53. Introduced plants can have similarly disastrous long-term effects on local economies and biological diversity: among the most notorious species are the water lettuce (*Pistia stratioides*), water fern (*Azolla nilotica*) and water hyacinth (*Eichhornia crassipes*). All of these species are adaptable, growing rapidly and, in the absence of natural predators, are capable of spreading quickly, forming large floating masses that interrupt navigation, clog the machinery of dams, impede drainage and fisheries, result in lowered oxygen levels in the water, and promote the development of habitats conducive to diseases such as bilharzia-carrying snails and malaria-transmitting mosquitoes. The water hyacinth, for example, is native to South America but has spread to more than 80 countries in the past century. Control of these species has proved difficult and expensive. Techniques applied have ranged from manual clearance of vegetation, to aerial spraying with herbicides and to the use of manatees and weevils which eat the foliage. Some of these applications have negative biological implications.

2.7.3 Natural changes

54. Wetlands are also subject to extreme natural events. Wetland ecosystems can be created, shaped and destroyed by floods, drought, storms and changes in atmospheric temperature. Lake Chad, for example, was much more extensive 3000 years ago: its geological records indicate an irregular pattern of expansion and contraction for most of its history. In a similar manner the water level of Lake Chilwa in Malawi has had a fluctuation of up to two metres in the past 40 years: in 1967 a slight change of rainfall and evaporation resulted in the lake drying out. Natural events can also result in the establishment of new water bodies, such as the creation of Lake Kivu which was formed by a volcanic barrier in relatively recent times.

3. THE RAMSAR CONVENTION

55. The Convention on Wetlands of International Importance especially as Waterfowl Habitat, more commonly known as the Convention on Wetlands or the Ramsar Convention, celebrated its 25th anniversary in February 1996. From its initially rather narrow focus, the Ramsar Convention has developed a thematically and geographically holistic approach to wetland issues. Since it entered into force in 1975, a total of 94 States have become Contracting Parties to the Ramsar Convention; more than 800 wetland sites (covering more than 500,000km²) have been included in the Ramsar *List of Wetlands of International Importance* by Contracting Parties.

56. The Ramsar Convention is the only global convention devoted to a specific ecosystem - wetlands. Over 25 years, it has made a significant contribution to increased recognition and understanding of the role of wetland functions and values. The Ramsar Convention provides a framework for international cooperation for the conservation and "wise use" (a term synonymous with sustainable use) of wetlands.

57. The broad objectives of the Ramsar Convention are to ensure the long-term conservation and wise use of wetlands. To meet its objectives, the Ramsar Convention places a number of obligations on States which are Contracting Parties, relating to the conservation of wetlands throughout their territories. Upon joining the Ramsar Convention, each Contracting Party is required to:

- designate at least one wetland for the *Ramsar List of Wetlands of International Importance* (Article 2.1), on the basis of established Ramsar criteria, and promote its conservation (Article 3.1);
- formulate and implement planning so as to ensure the wise use of wetlands, whether or not they are included in the *List* (Article 3);
- promote the conservation of wetlands in their territory through the establishment of nature reserves, and promote training in the fields of research, management and wardening (Article 4); and
- consult with other Contracting Parties about implementation of the Ramsar Convention, especially as regards trans-frontier wetlands, shared water systems, shared species and development aid for wetland projects (Article 5).²⁶

58. The first meeting of the Conference of the Contracting Parties (COP) in 1980 identified the need for promoting the wise use of wetlands, a practice intended to maintain their ecological character as a basis not only for nature conservation, but also for sustainable development.

59. In 1990, at the 4th COP, guidelines for the implementation of the wise use concept were adopted. These call for the establishment of national wetland policies covering all problems and activities related to wetlands, including institutional and organisational arrangements, legislative and government policies, increasing knowledge and awareness of wetlands, and a review of wetland priorities in the national context.

60. The 6th COP, held in Brisbane Australia in March 1996 adopted a *Strategic Plan 1997-2002*²⁷ which defined the Convention's mission as "The conservation and wise use of wetlands by national action and international cooperation as a means to achieving sustainable development throughout the world". The Strategic Plan builds on recent initiatives which have developed from international fora such as Agenda 21, the Global Environment Facility (GEF), and the Convention on Biological Diversity, as well as the growing concern for environmental issues at all levels of government. In particular the Plan represents a new challenge which will require closer working relations with non-

governmental organisations, community groups and others interested in conserving wetlands. Among the priorities established in the Plan are the needs for education and public awareness programmes; strengthened partnerships with other agencies and conventions; the inclusion of wetlands in planning and policy-making decisions through active and informed participation of local communities and the private sector; the need to activate funding for wetland conservation in developing countries and countries with economies in transition; and strengthened capacity of national agencies for better planning and management of important wetland sites. Implementation of the Plan is, naturally enough, primarily the task of the Contracting Parties.

4. THE RAMSAR CONVENTION AND THE CONVENTION ON BIOLOGICAL DIVERSITY: COMMON CONCERNS AND POSSIBLE JOINT ACTIONS

4.1 Identification and monitoring of wetlands

61. Identification of the various components of biodiversity important for conservation and sustainable development, and the development of means of monitoring biological diversity is the main thrust of Article 7 of the CBD.²⁸ Parties agree to identify and monitor the components of biodiversity important for conservation and sustainable use, and to identify and monitor activities which have, or are likely to have, significant adverse impacts on biodiversity. To ensure that the maximum benefit is gained from such analyses, information should be arranged and maintained in a national (or equivalent) database.

62. Ramsar partner organisations, particularly IUCN - The World Conservation Union, Wetlands International (formerly IWRB) and WWF, have undertaken a systematic review of wetlands in several geographic regions. The findings have been published in a series of directories. The broad objectives of these wetland inventories are to: identify important wetlands; identify priority sites for conservation; identify the functions and values of each wetland site - ecological, economic, social and cultural; establish a baseline for measuring future changes in wetland characteristics; provide a tool for planning and management; and permit comparisons at national and international levels.

63. In 1993, the Ramsar Convention published a Directory of Wetlands of International Importance for each of the following regions: Africa, Asia and Oceania, Europe, and the Neotropics and North America.²⁹ These directories were prepared with the data provided by Contracting Parties and provide an overview of the status of all Ramsar sites. An update to these directories was prepared in 1996.³⁰

64. The Ramsar Database (established in 1990), managed on behalf of the Ramsar Convention by Wetlands International and containing information on all Ramsar sites, provides support towards the implementation of the Ramsar Convention. For each site the Database includes both technical and administrative information provided by the Contracting Parties, and constitutes the baseline for identifying and measuring ecological change at sites. Objective 5 of the Strategic Plan highlights the need to "obtain regularly updated information on wetlands of international importance" and identifies the need for continuous updating and monitoring of the content and structure of the Ramsar database.

65. Designation of a wetland for the Ramsar List is only the first step towards meeting a Contracting Party's obligation to conserve and make wise use of its wetlands. Ongoing monitoring is essential to ensure that the ecological characteristics of wetland sites do not change adversely, and to assist with the implementation of management plans.

66. In 1990, the Ramsar Convention established the Montreux Record and the Management Guidance Procedure (formerly Monitoring Procedure). The Montreux Record enables Contracting Parties to draw attention to sites in their territories whose ecological character has changed, is changing or is likely to change as a result of technological

developments, pollution or other human interference. The Management Guidance Procedure is a tool already used by several countries to obtain technical advice from experts on issues related to the restoration or rehabilitation of wetlands included in the Montreux Record.

4.2 In-situ conservation

67. *In-situ* conservation (Article 8 of the CBD) is widely viewed as being the principal means of conserving biodiversity. Effective *in-situ* conservation demands that ecosystem functioning and processes, as well as genetic diversity, are maintained in a network of sites which are comprehensive and representative in terms of all levels of ecological organisation - genetic, species and ecosystem. Parties to the CBD are requested to establish, strengthen and maintain networks of national protected areas in order to protect species, habitats, representative ecosystems and genetic variability within species.

68. The designation of wetlands for the Ramsar List has proved to be an effective tool for wetland conservation and wise use, particularly in cases where sites have not yet been formally designated as protected areas at the national level. Over 800 sites have already been designated by the Contracting Parties themselves (covering more than 500,000km²). The Strategic Plan recognises the need to designate additional sites, especially in developing countries, in order to ensure a representative range of wetland types, and to ensure better management and protection of existing sites. Priority in new designations should be given to sites from wetland types currently under-represented in the Ramsar List (coral reefs, mangroves, seagrass beds and peatlands) as well as to sites that are currently not protected, as a first step towards developing measures for their conservation and wise use at the national level. Designation of trans-frontier wetland sites has also been recognised as a priority issue, particularly given the mobility of freshwater and coastal animals, the high levels of genetic flow between populations, and the considerable exchange of nutrients between linked ecosystems.

69. Criteria for identifying wetlands of international importance have already been adopted by Ramsar's COP, thus meeting some of the requirements of the CBD that Parties should "develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity". Ramsar sites need to fulfil at least one of the following criteria; the uniqueness or ecological significance of the site; the biological importance of plant or animal species; the importance of the site for waterfowl; or the importance of the site for fish.

70. Many wetland sites of ecological, social and cultural importance are not designated under the Ramsar Convention, but may receive some other form of national or international protection. Many national parks and other reserves contain important watersheds or water bodies and the management of such areas is therefore crucial to the conservation and wise use of wetland resources.

71. Attention should also be given to addressing the need for, and importance of, rehabilitating and restoring degraded wetland ecosystems (Article 8f of the CBD) which could promote the recovery of certain threatened species, but which might also be of considerable benefit to local communities. Operational Objective 2.6 of Ramsar's Strategic Plan seeks to "identify wetlands in need of restoration and rehabilitation, and to implement the necessary measures".

72. Species introductions/invasions have had a wide range of impacts on wetland communities and ecosystems: they represent a major threat to the ecological integrity and functioning of such ecosystems. Preventing introduction, or controlling or eradicating alien species which threaten ecosystems, habitats or species is an important element of the CBD (Article 8h) with relation to long-term management and wise use of wetland ecosystems.

For a given wetland system, the ecological impact of exotic species may be difficult to predict, and worse still, these species could have free passage to other wetlands. Nutrient recycling, production rates, species compositions and other factors may be altered. There is a need for a clear, consistent strategy between Contracting Parties on the ways and means of addressing the issue of exotic species, minimising the potential negative impacts of such introductions/invasions, and establishing clear mechanisms and infrastructures which could serve as an early warning system against further introductions/invasions of harmful exotic species (Article 8g of the CBD).

4.3 Wise use of the components of wetlands

73. The sustainable use of components of biological diversity (Article 10 of the CBD), together with measures to promote *in-situ* conservation, is one of the most important practical components of the CBD. This Article commits Contracting Parties to consider conservation and the sustainable use of biological resources in national decision-making processes, and encourages them to develop and adopt measures which would avoid or minimise adverse impacts on biodiversity. Moreover, in recognition of communities' traditional rights of access to biological resources, it stipulates that each Contracting Party should "Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements".

74. The concept of "wise use" was already incorporated into the text of the Ramsar Convention adopted in 1971. However, it was not until 1987, with the establishment of a Working Group on the issue, that guidelines were developed to assist Contracting Parties. Since then, the Ramsar Convention has continued to refine its work on wise use, incorporating new concepts through links with current, wider conservation thinking and practices.

75. Wise use of wetland resources is a key element of the Ramsar Convention and has a broad coverage. Some wetlands, for example, contain vast potential energy sources in the form of peat. When this is used in a sustainable manner, its use can form part of an integrated management scheme for the wetland. The whole ecosystem can easily be destroyed if its natural exploitable resources are not used sustainably. Similar circumstances surround the use of other resources. Operational Objective 2.2 of the Ramsar Strategic Plan seeks to "integrate conservation and wise use of wetlands in all Contracting Parties into national, provincial and local planning and decision-making on land use, groundwater management, catchment/river basin and coastal zone planning, and all other environmental planning and management".

76. The importance of local community involvement is now well recognised in long-term conservation and management programmes. Experience has shown that management regimes which involve a community tend to be more sustainable than those which are imposed on a community. Ramsar's wise use provisions and the Strategic Plan reflect the Convention's recognition of the need for empowerment of local communities, including indigenous people and paying particular attention to the role of women, in the conservation and wise use of wetlands. The *Ramsar Wise Use Guidelines* and *Additional Guidance* indicate the importance of considering traditional use of natural resources as an important component of the conservation and wise use strategies for wetlands.

4.4 Raising awareness

77. The CBD repeatedly mentions the need for greater cooperation between States and organisations, particularly in the domain of public education and awareness (Article 13). This need is also recognised by the Ramsar Convention which states that the value of wetlands in terms of conservation and economic values "have not been communicated

effectively to decision-makers, stakeholders, community leaders and the public at large" (Resolution VI.19). It is furthermore acknowledged that only a few education and public awareness programmes have been organised at either national or international levels in support of wetland conservation. Increasing public awareness is therefore a recognised priority in Ramsar's Strategic Plan. Specifically it asks that Contracting Parties, Bureau and Partner organisations "support international programs that encourage transfer of information, knowledge and skills between wetland education centres and educators."

4.5 Fair and equitable sharing

78. Provisions of the CBD clearly emphasise that people who have traditionally relied on using natural resources should be included in consideration of future developments. It also provides essential guidelines governing access rights and benefit sharing opportunities to people at all levels of the community. Article 15, for example, represents an important step in helping to ensure that benefits are more evenly shared, as it recognises the principle of national sovereignty over genetic resources and the resulting authority to regulate and control access to those resources. In this respect, benefit sharing is not only encouraged between countries, but also between users and local and indigenous communities. Elsewhere in the CBD, Parties are required to respect the knowledge, innovations and practices of indigenous and local communities and to encourage fair and equitable benefit sharing with them (Article 8j). The creation of incentives for local communities and encouragement of their participation in benefit sharing are supported in a number of other provisions (Articles 10c and 18.4).

79. Although this issue has not received much direct coverage under the Ramsar Convention, there are many areas where concerns have been expressed, and where experience gained under CBD could provide useful guidance. For example, it is widely recognised that questions of equitable access to and sharing of water resources are a critical issue. Ramsar should be more widely recognised as a useful tool for helping to resolve potential conflicts.

4.6 Exchange of information and cooperation

80. The text of the CBD includes many references to encouraging information exchange (Article 17), as well as the promotion of technical and scientific cooperation (Article 18). These themes are also expressed by the Ramsar Convention. Under Article 5, for example, Contracting Parties accept an obligation to consult one another over implementation of the Ramsar Convention. It is increasingly being recognised that there are major needs for managing water and other wetland resources in a more efficient manner through international cooperation.

81. Nearly 47% of the land area of the world (excluding Antarctica) falls within international water basins that are shared by two or more countries.³¹ The development and management of water and other wetland resources poses a particular challenge, not only in view of the political issues at stake but also with relation to the sharing of benefits from the use of a country's resources. The promotion of an "Environmentally Sound Management Programme for Inland Waters" was first developed by the United Nations Environment Programme (UNEP) in 1987. Successful models of cooperation are reflected by the Rhine Commission in Europe, the Wadden Sea Joint Declaration between Denmark, Germany and the Netherlands, the Great Lakes Water Quality Agreement between the USA and Canada, and the Global Binational Master Plan for Lake Titicaca between Bolivia and Peru.

82. Action 7.2.3 of the Ramsar Strategic Plan is of direct relevance to the CBD and states that Ramsar should "Strengthen cooperation and synergy with the Convention on Biological Diversity, in particular as regards inclusion of wetland concerns in national biodiversity strategies, and planning and execution of projects affecting wetlands". The

two Conventions' scientific bodies, the CBD Subsidiary Body for Scientific, Technical and Technological Advice, and the Ramsar Scientific and Technical Review Panel, have already established links and are co-operating through attendance of representatives at each other's meetings.

83. Ramsar's Resolution VI.10 encourages cooperation between the Ramsar Convention, the GEF and its implementing agencies - the World Bank, United Nations Development Programme (UNDP) and UNEP. It directs its Scientific and Technical Review Panel to "exchange information and cooperate with the GEF's Scientific and Technical Advisory Panel (STAP)" and further calls upon the GEF to provide direct support to eligible Ramsar Contracting Parties in order to assist them in national implementation of the Strategic Plan. Ramsar Resolution VI.10 also notes that three of the four focal areas of the GEF's Operational Strategy are directly related to wetlands: biological diversity, climate change and international waters. Coastal, marine and freshwater ecosystems are already targeted under GEF's operational programme for long-term biological diversity protection and sustainable use, which draws attention to the need to strengthen the classification system and means of assessing the global significance of biodiversity sites such as those listed in the Directories of Wetlands of International Importance.

4.7 Funding mechanisms

84. Conserving biological diversity relies not only on accessing and sharing scientific and management skills, but is dependent on having adequate funds available to support action programmes. In this respect, each Contracting Party of the CBD is requested to provide "financial support and incentives in respect of those national activities which are intended to achieve the objectives of the Convention in accordance with its national plans, priorities and programmes". Several provisions of Ramsar's Strategic Plan address the need to help developing countries and countries whose economies are in transition to obtain funds to fulfil obligations contracted under the Ramsar Convention. These include maintaining close working relations with bilateral and multilateral agencies, and mobilising funding support from such agencies to developing countries in support of conservation and wise use of wetlands and in the implementation of the Strategic Plan.

85. In 1990, Ramsar established a "Small Grants Fund" for wetland conservation and wise use. The resources for this Fund come from the Ramsar Convention's core budget as well as from voluntary contributions. The Fund is targeted at supporting small-scale initiatives. Applications for support by the Small Grants Fund are solicited annually by the Ramsar Bureau. Recipient states are required to report on progress achieved as a result of the grant.

86. In 1995 the Ramsar Convention established the "Wetlands for the Future" initiative thanks to the financial support of the Government of the USA. Money available covers projects on capacity building and professional training in the Neotropical Region.

4.8 Reporting

87. Reporting by Contracting Parties on implementation of international agreements is increasingly important. Under the Ramsar Convention, Parties report every three years using a standardised form. The need to provide separate reports to related international environmental agreements may represent an administrative burden. Efforts should be made to ensure, that, as far as possible, there is compatibility between the reporting requirements of the Convention on Biological Diversity and the Ramsar Convention for matters relating to wetlands. Contracting Parties should also make efforts to ensure full co-ordination when different national focal points are responsible for compiling reports under the two Conventions.

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