

Ramsar
Handbooks
4th edition

Handbook 1

Wise use of wetlands





About the Convention on Wetlands

The Convention on Wetlands (Ramsar, Iran, 1971) is an intergovernmental treaty whose mission is “the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world”. As of October 2010, 160 nations have joined the Convention as Contracting Parties, and more than 1900 wetlands around the world, covering over 186 million hectares, have been designated for inclusion in the Ramsar List of Wetlands of International Importance.

What are wetlands?

As defined by the Convention, wetlands include a wide variety of habitats such as marshes, peatlands, floodplains, rivers and lakes, and coastal areas such as saltmarshes, mangroves, and seagrass beds, but also coral reefs and other marine areas no deeper than six metres at low tide, as well as human-made wetlands such as waste-water treatment ponds and reservoirs.

About this series of handbooks

This series has been prepared by the Secretariat of the Convention following the 7th, 8th 9th, and 10th meetings of the Conference of the Contracting Parties (COP7, COP8, COP9 and COP10) held, respectively, in San José, Costa Rica, in May 1999, Valencia, Spain, in November 2002, Kampala, Uganda, in November 2005, and Changwon, Republic of Korea, October-November 2008. The guidelines on various matters adopted by the Parties at those and earlier COPs have been prepared as a series of handbooks to assist those with an interest in, or directly involved with, implementation of the Convention at the international, regional, national, subnational or local levels. Each handbook brings together, subject by subject, the various relevant guidances adopted by Parties, supplemented by additional material from COP information papers, case studies and other relevant publications so as to illustrate key aspects of the guidelines. The handbooks are available in the three working languages of the Convention (English, French, and Spanish).

The table on the inside back cover lists the full scope of the subjects covered by this handbook series at present. Additional handbooks will be prepared to include any further guidance adopted by future meetings of the Conference of the Contracting Parties. The Ramsar Convention promotes an integrated package of actions to ensure the conservation and wise use of wetlands. In recognition of these integrated approaches, the reader will find that within each handbook there are numerous cross-references to others in the series.

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Ramsar handbooks for the wise use of wetlands
4th edition, 2010

Handbook 1

Wise use of wetlands

Concepts and
approaches for the
wise use of wetlands



This 4th edition of the Ramsar Handbooks replaces the series published in 2007. It includes relevant guidance adopted by several meetings of the Conference of the Parties, in particular COP7 (1999), COP8 (2002), COP9 (2005), and COP10 (2008), as well as selected background documents presented at these COPs.

Acknowledgements

The work of preparing the guidance and a conceptual framework for the wise use of wetlands provided in this Handbook was undertaken as a collaborative effort during 2003-2005 by Ramsar's Scientific and Technical Review Panel (STRP) Working Groups 1 (Inventory and assessment, led by Max Finlayson, then of the International Water Management Institute) and 2 (Wise use, led by Randy Milton, Canada). This team also prepared an underlying analysis and recommendations which were provided to the 9th meeting of the Conference of the Parties (COP9) as an Information Paper (COP9 DOC. 16). Major contributions to the work were made in particular by Randy Milton, Dave Pritchard, Max Finlayson, and the Ramsar Secretariat personnel.

The work of the STRP was greatly assisted by the concurrent work of the Millennium Ecosystem Assessment (MA), and in particular the MA's conceptual framework for ecosystems and human well-being and its definition and description of the characteristics of ecosystems and ecosystem services (Millennium Ecosystem Assessment 2003. *Ecosystems and Human Well-being: A Framework for Assessment*. Island Press, Washington, D.C.).

The "Changwon Declaration", also featured in this Handbook, was an initiative of the government of the Republic of Korea and was adopted as Resolution X.3 at COP10 in Changwon, Republic of Korea, in 2008. It was prepared through a collaborative process drawing upon the expertise of the STRP, the International Organization Partners (IOPs), the government of Korea as the COP10 host country, and the Ramsar Secretariat.

All Resolutions of the Ramsar COPs are available from the Convention's Web site at www.ramsar.org/resolutions. Background documents referred to in these handbooks are available at www.ramsar.org/cop7-docs, www.ramsar.org/cop8-docs, www.ramsar.org/cop9-docs, and www.ramsar.org/cop10-docs.



Fishing boats in Sao Tomé and Príncipe. Photo: Tim Dodman.

Table of Contents

Acknowledgements	2
Getting the most out of this Handbook	4
Foreword	6
Concepts and approaches for the wise use of wetlands	7
Section I: A Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character	8
Introduction	8
Wetland ecosystem terminology	9
A Conceptual Framework for wetland wise use	9
Updated definitions of “ecological character” and “change in ecological character” of wetlands	14
An updated definition of the “wise use” of wetlands	16
Section II: Human well-being and wetlands: the Changwon Declaration	20
Appendix 1: Ramsar’s wise use definition in relation to sustainable use, sustainable development and ecosystem approaches	27
Appendix 2: Additional guidance on the implementation of the wise use concept	29
Appendix 3: The Ramsar Handbooks for the wise use of wetlands: Contents of Handbooks 2-[20]	32
Appendix 4: Additional recent examples of Ramsar principles and guidance addressing particular drivers of change	37
Relevant Resolutions	
Resolution IX.1: <i>Additional scientific and technical guidance for implementing the Ramsar wise use concept</i>	52
Resolution X.3: <i>The Changwon Declaration on human well-being and wetlands</i>	53

Getting the most out of this Handbook

The Handbooks in general

The purpose of the Ramsar Handbooks is to organize guidance material from relevant decisions adopted by the Contracting Parties over the years, according to subject themes. This helps practitioners to implement the internationally-agreed best practice in a way that is convenient to handle and more naturally matches their own everyday working environment.

The intended readership includes national and local staff of the government departments, ministries and agencies that act as Administrative Authorities for the Ramsar Convention in each country. Equally important users in many cases are managers of individual wetland areas, as some aspects of the guidance relate specifically to site management.

The Ramsar guidance has been adopted by member governments as a whole, and increasingly it addresses itself to the crucial roles of other sectors beyond the “environment” or “water” sectors. It is thus very important that these Handbooks should be used by **all** whose actions may benefit from or impact upon the wise use of wetlands.

A vital first step in each country therefore is to ensure adequate **dissemination** of these Handbooks to all who need or can benefit from them. Copies are freely available in PDF format from the Ramsar Secretariat in three languages on CD-ROM or by download from the Convention website (www.ramsar.org).

Other early steps would be, in each particular context, to **clarify** lines of responsibility and **actively check** how to align the terms used and approaches described with the reader’s own jurisdiction, operating circumstances, and organizational structures.

Much of the text can be used in a **proactive sense**, as a basis for framing policies, plans and activities, sometimes by simply importing relevant sections into national and local materials. It can also be used in a **reactive sense** as a source of help and ideas for responding to problems and opportunities, navigating subjects by the need of the user.

Cross-references, original sources, and further reading are liberally cited: the Handbooks will often not be the “last word”, but they provide a helpful “route-map” to further sources of information and support.

Strategic direction in the Ramsar Convention is provided by the Strategic Plan, the latest version of which was adopted by COP10 in 2008 for the period 2009-2015. All thematic implementation frameworks, including the Handbooks, sit within the context of the goals and strategies of this Plan and the priorities it highlights for the period covered.

In this fourth edition of the Handbooks, additions to and omissions from the text of the original guidelines, required by the results of COP8, COP9 and COP10, are shown in square brackets [...].

The Handbook series is updated after each meeting of the Conference of the Parties, and feedback on user experience is always appreciated in helping to refine each new edition.

This Handbook (Wise use of wetlands)

Goal 1 of the Strategic Plan covers wise use as one of the three main “pillars” of the Convention, and the Goal is expressed as “To work towards achieving the wise use of all wetlands by ensuring that all Contracting Parties develop, adopt and use the necessary and appropriate instruments and measures”, with the “Outcome sought” being phrased as “The wise use of all wetlands being achieved in all Parties, including more participative management of wetlands, and conservation decisions being made with an awareness of the importance of the ecosystem services provided by wetlands”.

Strategies for achieving this, elaborated in the Plan, include:

- 1.1 Wetland inventory and assessment
- 1.2 Global wetland information
- 1.3 Policy, legislation and institutions
- 1.4 Cross-sectoral recognition of wetland services
- 1.5 Recognition of the role of the Convention
- 1.6 Science-based management of wetlands
- 1.7 Integrated Water Resources Management
- 1.8 Wetland restoration
- 1.9 Invasive alien species
- 1.10 Private sector
- 1.11 Incentive measures

The Plan then sets out a total of 28 “Key Result Areas” to be achieved by 2015 for this set of Strategies.

The text in this Handbook is drawn mainly from Resolution IX.1 and its Annex A, as well as Resolution X.3 and its Annex, in addition to various extracts from other Resolutions. The substance of it thus reflects formal decisions adopted by the Conference of Contracting Parties. The Handbook also brings together an Information paper and other resource materials relevant to the issue. The views expressed in these additional materials do not necessarily reflect the views of the Ramsar Secretariat or the Contracting Parties, and such materials have not been endorsed by the Conference of the Contracting Parties.

Foreword

This Handbook provides over-arching guidance on the use of the whole set of Ramsar Wise Use Handbooks, with each of the other Handbooks (2-20) of this 4th edition addressing one or more specific types of intervention under its “Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character”. In addition to the list of titles provided here in Appendix 3, a summary guide to the scope of each of the Handbooks will be provided in the separate companion publication “A Guide to the Ramsar Wise Use Handbooks”.

The principles of “wise use” and the maintenance of “ecological character” of wetlands lie at the very heart of the Ramsar Convention. Maintaining the ecological character of wetlands designated as Wetlands of International Importance (Ramsar Sites) and securing, as far as possible, the wise use of the wetlands in their territory, is recognized in the text of the Convention adopted in 1971 as amongst the key outcomes of the implementation of the Convention by its Contracting Parties.

But what precisely is meant by the terms “wise use” and “ecological character”? A definition of “wise use” was first adopted by Contracting Parties at COP3 in 1987. Subsequently, the Convention’s Scientific and Technical Review Panel (STRP) developed definitions of “ecological character” and “change in ecological character” which were adopted by COP7 in 1999.

Since the adoption of the 1987 “wise use” definition, the language of environmental conservation has evolved and changed, with new terminologies such as those of the 1987 Brundtland Commission report on sustainable development, the 1992 Convention on Biological Diversity’s (CBD) use of the terms “ecosystem approach” and “sustainable use”, and more recently the Millennium Ecosystem Assessment’s (MA) definitions and descriptions of the characteristics of ecosystems and of “ecosystem services”. In order to ensure that the Ramsar definitions are up to date and consistent with such current language, in 2002 the Ramsar Parties requested the STRP to review the definitions and propose updated definitions as necessary. This Handbook provides these updated definitions, as adopted by COP9 in 2005 as Resolution IX.1 Annex A.

Importantly, in undertaking this work the STRP recognized that the Convention lacked an overall framework for its implementation of “wise use”. The conceptual framework for ecosystems and human well-being developed by the MA proved to be highly relevant in this context, particularly as it speaks directly to the Ramsar Convention’s recognition of the interdependence of people and their environment. This conceptual framework links indirect and direct drivers of change with biodiversity, ecosystems and their services and then with human well-being and poverty reduction. Under this framework, Ramsar’s “wise use” equates with the maintenance of ecosystems and the continued delivery of ecosystem services to maintain human well-being.

Furthermore, this conceptual framework provides a valuable tool for those implementing the Ramsar Convention by forming the basis for how and when each aspect and topic of the Convention’s guidance can and should be applied as interventions to achieve wise use and the maintenance of the ecological character of wetlands. All Contracting Parties and others involved in the implementation of the Convention are urged to use this Handbook as their “route-map” for successful implementation. In the particular case of sectors beyond the wetlands sector itself, the key principles and messages encapsulated in the “Changwon Declaration” (COP10 Resolution X.3, also presented here) offer an expression of the issues designed to assist with the broad cross-cutting actions and approaches required by all concerned.

Concepts and approaches for the wise use of wetlands

Relevant implementation commitments made by Contracting Parties in COP Resolutions

Resolution IX.1: Additional scientific and technical guidance for implementing the Ramsar wise use concept

THE CONFERENCE OF THE CONTRACTING PARTIES

5. APPROVES the *Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character* (Annex A to this Resolution) and its updated definitions of "wise use" and "ecological character", and CONFIRMS that these supersede all previous definitions of these terms;
8. URGES Contracting Parties to draw [this framework] (...) to the attention of all relevant stakeholders, including *inter alia* government ministries, departments and agencies, water and basin management authorities, non-governmental organizations, and civil society; and FURTHER URGES Contracting Parties to encourage these stakeholders to take [it] into account, together with (...) the Ramsar 'Toolkit' of Wise Use Handbooks (...), in their decision-making and activities which relate to the delivery of the wise use of wetlands through the maintenance of their ecological character;

Resolution X.3: The Changwon Declaration on human well-being and wetlands

4. WELCOMING the message of the Secretary General of the United Nations, delivered to this Conference on 28 October 2008, and NOTING the emphasis in that message on the vital link between wetlands, livelihoods, and the well-being of people around the world, as well as the importance of the Ramsar Convention in providing the guidance and mechanisms for underpinning this vital link and the valuable contribution that wetland ecosystem services can make to achieving the Millennium Development Goals;
7. INFORMED that the primary purpose of the "Changwon Declaration" is to transmit key messages concerning wetland-related issues to the many stakeholders and decision-makers beyond the Ramsar community who are relevant to the conservation and wise use of wetlands, to inform their actions and decision-making;
8. NOTING that the Declaration is designed to complement the Ramsar Strategic Plan 2009-2015, which provides the Convention and its bodies with their own future approach and priorities for implementation, and that a number of objectives in the Strategic Plan could be effectively progressed through implementation of the Changwon Declaration;

THE CONFERENCE OF THE CONTRACTING PARTIES

12. STRONGLY URGES Contracting Parties and other governments to bring the "Changwon Declaration" to the attention of their heads of state, parliaments, private sector, and civil society, and to encourage them and all government sectors (including *inter alia* water management, human health, climate change, poverty reduction, and spatial planning sectors) and agencies responsible for activities affecting wetlands, especially in order to respond to the call for action for wetlands embodied in the Declaration;
13. ALSO STRONGLY URGES Contracting Parties and other governments to utilise the "Changwon Declaration" to inform their national policies and decision-making, including in the positions of their national delegations to other external processes, and through specific opportunities at local, national and international levels where the Ramsar Convention and other processes have good potential for mutual assistance and collaboration, including *inter alia* the UN Commission on Sustainable Development, UN agencies, multilateral environmental agreements, and the World Water Forum (...).

Section I

A Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character

(adopted as Annex A to Resolution IX.1 by the 9th Conference of the Contracting Parties, Kampala, Uganda, 2005)

Introduction

1. Definitions of the key Ramsar Convention concepts of “wise use” and “ecological character” of wetlands were adopted by COP3 (1987) and COP7 (1999) respectively. Action 3.1.1 of the Ramsar Strategic Plan 2003-2008 requested the Convention’s Scientific and Technical Review Panel (STRP) to “review the wise use concept, its applicability, and its consistency with the objectives of sustainable development”. [See Appendix 1 for information on Ramsar’s wise use definition and its relation to sustainable use, sustainable development and ecosystem approaches.]
2. In addition, COP8 Resolution VIII.7 requested the STRP to further review and, as appropriate, develop guidance and report to COP9 concerning identified gaps and disharmonies in defining and reporting the ecological character of wetlands, including, inter alia, harmonization of definitions and terms in the guidance on inventory, assessment, monitoring and management of the ecological character of wetlands.
3. The work of the STRP has been greatly assisted by the concurrent work of the Millennium Ecosystem Assessment (MA), in particular the MA’s Conceptual Framework for Ecosystems and Human Well-being (Millennium Ecosystem Assessment 2003. *Ecosystems and Human Well-being: A Framework for Assessment*. Island Press, Washington, D.C.), and its definition and description of the characteristics of ecosystems and ecosystem services.
4. The STRP determined that it is appropriate to update and harmonize the Convention’s “wise use” and “ecological character” definitions to take into account other now more-widely used terms and definitions relating to ecosystems and sustainable development, and that a conceptual framework for the delivery of “wise use” would be of assistance to Contracting Parties and others in determining when and where to make policy and management interventions to support this delivery.
5. This guidance covers harmonizing wetland ecosystem terminologies and provides both a conceptual framework for wetland wise use and updated and harmonized definitions of “ecological character”, “change in ecological character”, and the “wise use” of wetlands.

Wetland ecosystem terminology

6. Within the Millennium Ecosystem Assessment (MA), ecosystems are described as the complex of living communities (including human communities) and non-living environment (Ecosystem Components)

interacting (through Ecological Processes) as a functional unit which provides *inter alia* a variety of benefits to people (Ecosystem Services).

7. Included in “MA Ecosystem Services” are provisioning, regulating, and cultural services that directly affect people, and supporting services which are needed to maintain these other services. Further information can be found in the Synthesis Report prepared by the MA for the Ramsar Convention (Finlayson, C.M., D’Cruz, R. & Davidson, N.C. 2005. *Wetlands and water: ecosystem services and human well-being*. World Resources Institute, Washington D.C). In the context of the Ramsar Convention this refers to products, functions and attributes as defined in Resolution VI.1 and expanded to include both material and non-material cultural values, benefits and functions as outlined in COP8 DOC.15 “Cultural aspects of wetlands”.
8. Terms [...]used in previous Ramsar guidelines and documents are shown in Table 1 alongside those used in the MA. Further review of the harmonization of definitions and terms related to ecosystem benefits/services (with reference to Resolution VIII.7 (paragraph 15) and COP9 DOC. 16, taking into account the usage of such terms in other international fora) [was undertaken by the STRP in 2005-2008, and was reported to Parties in COP10 DOC.22: “The global use of terminologies concerning ecosystem services”. Among other things this found some confusion, and a need to clarify the conceptual difference between the term “ecosystem services” (the benefits provided by ecosystems to people) and “environmental services” (the benefits provided by people) in relation to payments for environmental services: such payments should be used as incentives to maintain ecosystems and the ecosystem services they provide, rather than as payment for the services provided to people by these ecosystems].

Table 1. Comparative terminology for describing wetland ecosystems

MA Ecosystem terms	Ramsar terms
Ecosystem Components: physical; chemical; biological (habitats, species, genes)	“components”, “features”, “attributes”, “properties”
Ecological Processes within and between ecosystems	“processes”, “interactions”, “properties”; “functions”
Ecosystem Services: provisioning; regulating; cultural; supporting	“services”, “benefits”, “values”, “functions”, “goods”, “products”

A Conceptual Framework for wetland wise use

9. The Conceptual Framework developed by the Millennium Ecosystem Assessment (MA) for the maintenance of ecosystem services for human well-being and poverty reduction provides a multi-scalar approach which indicates how and where policy and management interventions and decision-making can be made (Figure 1). Under the MA framework, “wise use” equates to the maintenance of ecosystem benefits/services to ensure long term maintenance of biodiversity as well as human well-being and poverty alleviation.

Additional information

Millennium Ecosystem Assessment

Ecosystems and Human Well-being: A Framework for Assessment

The Millennium Ecosystem Assessment (MA) was an international work programme that “focused on ecosystem services (the benefits people obtain from ecosystems), how changes in ecosystem services have affected human well-being, how ecosystem changes may affect people in future decades, and response options that might be adopted at local, national, or global scales to improve ecosystem management and thereby contribute to human well-being and poverty alleviation”. It was launched by UN Secretary General Kofi Annan in June 2001 and completed in March 2005. It is intended to help to meet assessment needs of the Convention on Biological Diversity, the Convention to Combat Desertification, the Ramsar Convention on Wetlands, and the Convention on Migratory Species, as well as the needs of others in the private sector and civil society.

According to its website, “the MA synthesized information from the scientific literature, datasets, and scientific models, and included knowledge held by the private sector, practitioners, local communities and indigenous peoples. All of the MA findings underwent rigorous peer review. More than 1,300 authors from 95 countries were involved in four expert working groups preparing the global assessment, and hundreds more [have undertaken] more than 20 sub-global assessments”.

The four main volumes of the MA general report - entitled **Current State and Trends, Scenarios, Policy Responses**, and **Multiscale Assessments** - as well as **Our Human Planet** (Summary for Decision Makers), are available for PDF download from the MA web site and for purchase in printed form from Island Press: <http://www.millenniumassessment.org/en/index.aspx>.

The Synthesis reports

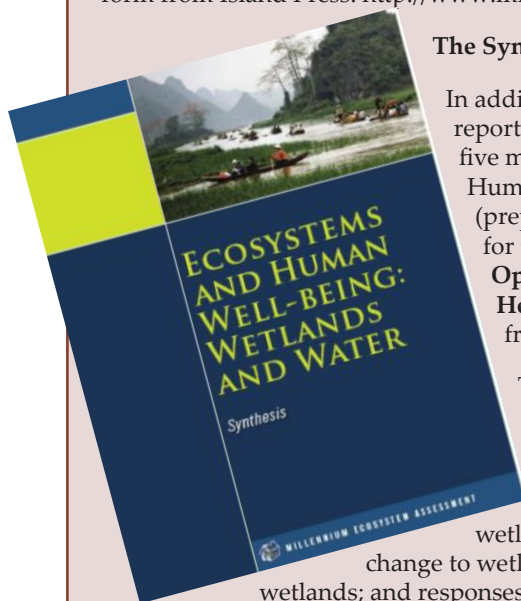
In addition to the enormous general report, there are five synthesis reports that integrate the general findings that are significant to five main subject areas. All with the general title “Ecosystems and Human Well-being”, the syntheses include **Wetlands and Water** (prepared for the Ramsar Convention), **Biodiversity** (prepared for the CBD); **Desertification** (prepared for the UNCCD); **Opportunities and Challenges for Business and Industry**; and **Health** (with the WHO). These are available for PDF download from the Web link above.

The Wetlands and Water synthesis report was prepared by an MA Synthesis Team of more than twenty authors co-led by Max Finlayson, Rebecca D’Cruz, and Nick Davidson.

It includes a Key Messages section and a Summary for Decision-Makers as well as chapters on the distribution of wetlands and their species; wetland services; drivers of loss and change to wetland ecosystems; human well-being; scenarios for the future of wetlands; and responses for the wise use of wetlands.

Key messages from the STRP

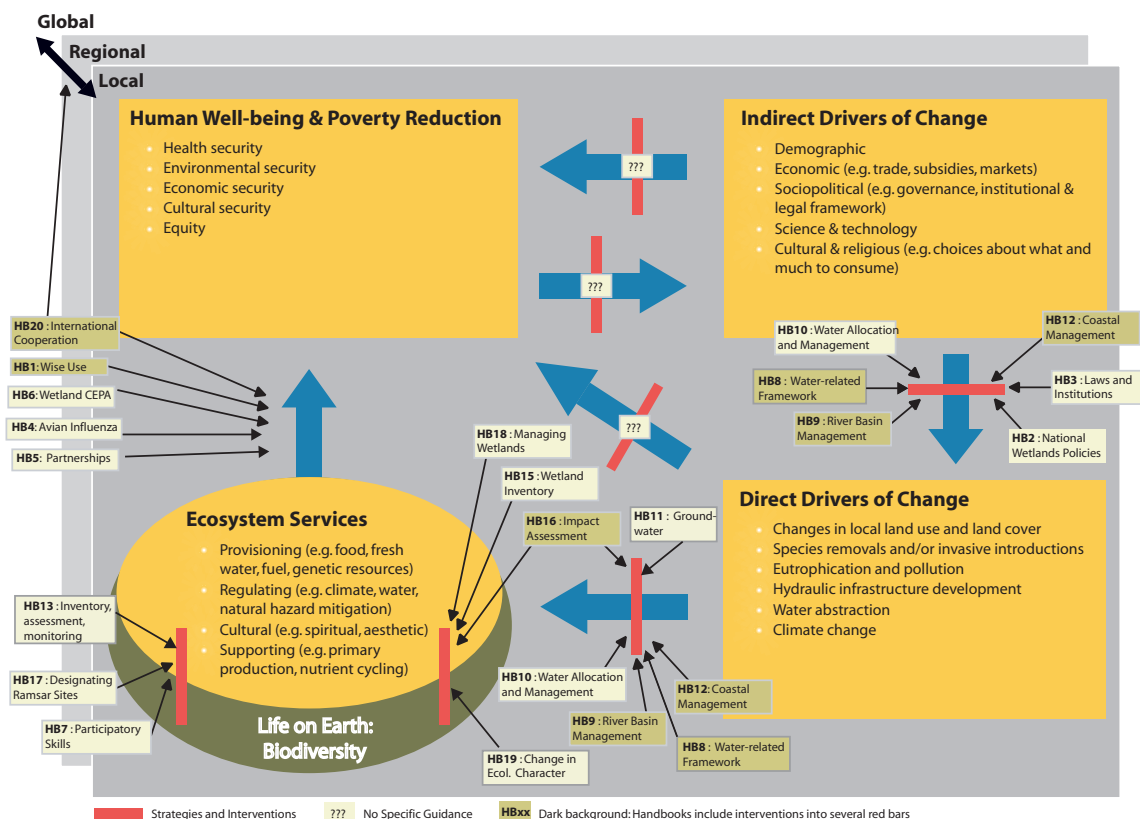
To complement the messages in the Wetlands and Water synthesis report, the Ramsar Scientific and Technical Review Panel (STRP), at its February 2005 meeting, prepared a set of 14 key messages for decision-makers on the implications of the MA for the Ramsar Convention and the future of wetlands. These were presented to Ramsar COP9 in November 2005 [and are published as Annex III to the COP9 Conference Report].



STRP's 14 Key Messages from the Millennium Assessment for the Ramsar Convention and the future of wetlands

1. A cross-sectoral focus is urgently needed from policy- and decision-makers that emphasizes securing wetland ecosystems and their services in the context of achieving sustainable development and improving human well-being.
2. Management of wetlands and water resources is most successfully addressed through integrated management at the river (or lake or aquifer) basin scale that is linked to coastal zone management for coastal and near-shore wetlands and that takes into account water allocations for the ecosystems.
3. Wetlands deliver a wide range of critical and important services (e.g. fish and fiber, water supply, water purification, coastal protection, recreational opportunities, and increasingly, tourism) vital for human well-being. Maintaining the natural functioning of wetlands will enable them to continue to deliver these services.
4. The principal supply of renewable fresh water for humans comes from an array of wetland types, including lakes, rivers, swamps and groundwater aquifers. Up to 3 billion people are dependent on groundwater as a source of drinking water, but such abstractions increasingly exceed their recharge from surface wetlands.
5. The services delivered by wetlands have been arguably valued at US\$14 trillion annually. Economic valuation now provides a powerful tool for placing wetlands on the agenda of conservation and development decision-makers.
6. Wetlands encompass a significant proportion of the area of the planet; the global estimate is 1280 million hectares (equivalent to approximately 9% of land surface) and is recognized as an underestimate.
7. The degradation and loss of wetlands is more rapid than that for other ecosystems. Similarly, the status of both freshwater and, to a lesser extent, coastal species is deteriorating faster than that of species in other ecosystems. Wetland-dependent biodiversity in many parts of the world is in continuing and accelerating decline.
8. Wetland loss and degradation has primarily been driven by land conversion and infrastructure development, water abstraction, eutrophication and pollution and over-exploitation. Losses tend to be more rapid where populations are increasing most and where demands for increased economic development are greatest. There are a number of broad, interrelated economic reasons, including perverse subsidies, why wetlands continue to be lost and degraded.
9. Global climate change is expected to further exacerbate the loss and degradation of wetland biodiversity including species that cannot relocate and migratory species that rely on a number of wetlands at different stages of their life cycle.
10. The continuing loss and degradation of wetlands are leading to reduction in the delivery of wetland ecosystem services, yet at the same time demand for these same services is projected to increase.
11. Current use of two wetland ecosystem services – freshwater and capture fisheries dependent on natural reproduction - in some regions is now in excess of levels that can be sustained even at current demands, much less future ones.
12. The projected continued loss and degradation of wetlands will result in further reduction in human well-being, especially for poorer people in less developed countries where technological solutions are not as readily available.
13. Progress towards achievement of the Millennium Development Goals depends on maintaining or enhancing wetland ecosystem services.
14. The priority when making choices about wetland management decisions is to ensure that the ecosystem services of the wetland are maintained (and, where appropriate, restored). This can be achieved by application of the wise use principle and guidelines of the Ramsar Convention.

Figure 1. A Conceptual Framework for the Wise Use of Wetlands and the maintenance of their ecological character, and the application of the guidelines in the Ramsar 'toolkit' of Wise Use Handbooks 4th edition (2010). (From the MA report to the Ramsar Convention: *Ecosystem Services and Human Well-Being: Wetlands & Water: Synthesis*. 2005. World Resources Institute, Washington D.C. [updated to reflect new Handbook titles and numbering])



[See Appendix 3 for further information on the 4th edition of the Ramsar toolkit.]

10. Mapping the Ramsar Wise Use toolkit contents onto this conceptual framework also permits an assessment of the toolkit's coverage and gaps in coverage in relation to intervention opportunities and topics. It should be noted that many of the current Ramsar wise use guidelines concern strategies and interventions to ecosystems and their processes, or strategies and interventions addressing aspects of the direct drivers of change to ecosystems. Also, these concern interventions chiefly at local or national levels, since Ramsar guidance is for Contracting Parties acting within their territories, although some guidance also applies regionally and globally (e.g., aspects of the *Guidelines for International Cooperation* – Handbook [20]).
11. The strategies and intervention opportunities which are relevant for the application of each of the guidelines of the Ramsar toolkit are listed in Table 2.
12. Only two current Ramsar wise use guidelines - National Wetland Policies and Reviewing Legislative and Institutional Frameworks - wholly concern interventions to indirect drivers of change, although some other guidelines include some policy aspects. However, it is clear that these 'interventions' onto the indirect drivers of change are important to have in place if efforts to manage wetland ecosystems sustainably through the application of the rest of the suite of Ramsar wise use guidelines are to be effective and efficient.

Additional information

The Millennium Ecosystem Assessment

The application of response options

At COP10 in 2008, the Ramsar Parties adopted Resolution X.18 on *The application of response options from the Millennium Ecosystem Assessment (MA) within the Ramsar Wise Use Toolkit*, referring to work undertaken by the STRP's Wise Use Working Group which is due to be published as a Ramsar Technical Report. This Report will serve as a guide to Contracting Parties and others on the application of the MA response options to enhance the implementation of the Ramsar Convention at the national level. The work supplements the Wetlands and Water synthesis report, given that the latter had been prepared at the same time as the full MA reports were being finalised, and hence it had not been possible to review thoroughly all other MA volumes for relevant response options to include in the synthesis report.

Points from the STRP's analysis include the following:

- the MA outputs concerning responses contain little detail on the wise use of wetlands, and where wetland wise use is treated in the response options, they are largely focused on addressing direct drivers of change (e.g., water abstraction, unsustainable harvest, and resource consumption);
- the MA outputs concerning responses contain few relevant options that address indirect drivers of change (e.g., economic and socio-political drivers) and a limited number that deal with trade-offs in decision-making relating to wetland wise use;
- the majority of the response options that address direct drivers of change in wetlands are already articulated within Ramsar's toolkit of Wise Use Handbooks;
- exceptions are response options contained within the underlying MA chapters that deal with ecosystem services (e.g., nutrient cycling, food, human health, and climate change and air quality) and some MA chapters that deal with natural and human-made systems (e.g., urban systems, cultivated systems and dryland systems);
- some of the MA's response options that are not covered by Ramsar's Wise Use Handbooks are included in other STRP products which have been brought to COP (for example, the material adopted by COP10 in Resolution X.23 on *Wetlands and human health and well-being*) and/or are being published as Ramsar Technical Reports.]

Without such a policy and legislative framework in place, there is a risk that other interventions will take place in a 'political vacuum' without a clear authorizing environment for their delivery, thus risking such efforts failing.

13. For some intervention opportunities indicated by the MA Conceptual Framework – for example, between indirect drivers of change and human well-being and *vice versa* - there are currently no Ramsar guidelines developed.
14. All aspects of the outline *Guidelines for the implementation of the wise use concept* adopted by COP4 (Recommendation 4.10) and most aspects of the *Additional guidance for the implementation of the wise use concept* adopted by COP5 (Resolution 5.6) have now been superseded by the suite of elaborated

guidelines adopted by subsequent Conferences of Contracting Parties and compiled in the Ramsar toolkit of Wise Use Handbooks (see Table 2). However, three aspects of the COP5 guidance have not been further developed, those concerning “Research”, “Training” and “Technical issues” of sustainable technologies. [These sections of Resolution 5.6 are included here in Appendix 2.]. Some more recent examples of principles, guidance and other information considered by the COP, concerning ways in which particular drivers may be addressed in positive ways that integrate with the maintenance of wetland ecosystem services, are given in Appendix 4.

Updated definitions of “ecological character” and “change in ecological character” of wetlands

15. Applying the MA’s terms and concepts, under which services form an integral part of ecosystems, an updated definition of Ramsar “ecological character” is:

“Ecological character is the combination of the ecosystem components, processes and benefits¹/services that characterise the wetland at a given point in time.”
16. The phrase “at a given point in time” refers to Resolution VI.1 paragraph 2.1, which states that “It is essential that the ecological character of a site be described by the Contracting Party concerned **at the time of designation for the Ramsar List**, by completion of the Information Sheet on Ramsar Wetlands (as adopted by Recommendation IV. 7).”
17. Furthermore, paragraph 2.3 of Resolution VI.1 states that “Contracting Parties are requested to verify the data which they have provided on Information Sheets on Ramsar Wetlands every six years, i.e., every second meeting of the Conference and to provide the [Secretariat] with updated sheets if necessary.” In addition, under paragraph 2.4 “Change in ecological character of a listed site should be assessed against the baseline status presented in the Information Sheet on Ramsar Wetlands, at the time of designation for the List (or at the time the Information Sheet was first provided to the [Secretariat]), together with any information which has been received subsequently.”
18. Essential to wetland management is baseline data that establishes the range of natural variation in components, processes and benefits/services at each site within a given time frame, against which change can be assessed. Contracting Parties have already adopted a range of guidance relevant to the identification, assessment, monitoring and management of the ecological character of Wetlands of International Importance and other wetlands, including wetland risk assessment (Resolution VII.10), impact assessment (Resolutions VII.16 and VIII.9), monitoring (Resolution VI.1), inventory (Resolution VIII.6), and management planning (Resolution VIII.14). In addition, [...] [texts have been adopted on describing ecological character (Resolution X.15) and detecting, reporting and responding to change in ecological character (Resolution X.16) of wetlands].

¹ Within this context, ecosystem benefits are defined in accordance with the MA definition of ecosystem services as “the benefits that people receive from ecosystems”.

Table 2. The application of guidelines in the Ramsar “Toolkit” of Wise Use Handbooks [4th Edition], supported by *Ramsar Technical Reports*, to different intervention opportunities in the MA’s Conceptual Framework (see Figure 1).

Intervention opportunity(ies)	Relevant Ramsar Wise Use Handbooks ([4th edition]) [...] and <i>Ramsar Technical Reports (RTR)</i>
Indirect drivers → Direct drivers	2. National Wetland Policies 3. Laws and Institutions [8]. Water-related framework [9]. River Basin Management (some parts) [10]. Water Allocation and Management (some parts) [12]. Coastal Management (some parts)
Direct drivers → Wetland Ecosystems	[8]. Water-related framework [9]. River Basin Management [10]. Water Allocation and Management [11]. Groundwater [12]. Coastal Management [15]. Wetland Inventory [16]. Impact Assessment RTR. 1 Rapid Assessment RTR. 3 Economic valuation of wetlands RTR. 5 Vulnerability assessment RTR. Environmental water requirements (in prep.)
Within Wetland Ecosystems	[7]. Participatory Skills [9]. River Basin Management [10]. Water Allocation and Management [11]. Groundwater [13]. Inventory/assessment /monitoring framework [15]. Wetland Inventory [16]. Impact Assessment [17]. Designating Ramsar Sites [18]. Managing Wetlands RTR 1 Rapid Assessment RTR 2 GIS for inventory, assessment & monitoring
Covers several types of intervention opportunities (Indirect drivers → Direct drivers, Direct drivers → Wetland Ecosystems, and within Wetland Ecosystems)	1. Wise Use of Wetlands [4. Avian Influenza and Wetlands] [5. Partnerships] [6]. Wetland CEPA [20]. International Cooperation See also Resolution IX.1 Annex D: Indicators of effectiveness

19. Consistent with the updated definition of “ecological character”, an updated definition of “change in ecological character of wetlands” is:

“For the purposes of implementation of Article 3.2, change in ecological character is the human-induced adverse alteration of any ecosystem component, process, and/or ecosystem benefit/service.”

20. The inclusion of specific reference to Article 3.2 of the Convention text within the definition is designed to clarify the maintenance obligation for the ecological character of listed Wetlands of International Importance (Ramsar Sites) under Article 3.2, and to note that such change concerns only adverse change caused by the actions of people. This is in line with the context of Article 3.2 and Recommendation 4.8 (1990) establishing the Montreux Record, which was re-affirmed by COP8 Resolution VIII.8. For the purposes under the Convention, this definition therefore excludes the processes of natural evolutionary change occurring in wetlands and also excludes positive human-induced change.
21. However, it should be noted that other actions adopted by the Convention, such as those concerning assessing the overall status and trends of wetlands and Ramsar Sites, require information on all types of change in ecological character – positive and negative, natural and human-induced (as is recognized in COP8 DOC. 20 and by Resolution VIII.8). Likewise, the Ramsar Convention has also recognized that wetland restoration and/or rehabilitation programmes can lead to favourable human-induced changes in ecological character (Annex to Resolution VI.1, 1996) and are a key aspect of wetland management interventions (see, e.g., Annex to Resolution VIII.14 (Handbook [18]) and Handbook [19]).

See also Handbooks 13, Inventory, assessment and monitoring, 18, Managing wetlands, and 19, Addressing change in wetland ecological character

An updated definition of the “wise use” of wetlands

22. An updated definition of “wise use”, taking into account the Convention’s mission statement, the MA’s terminology, the concepts of the ecosystem approach and sustainable use applied by the Convention on Biological Diversity, and the definition of sustainable development adopted by the 1987 Brundtland Commission, is:

“Wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches², within the context of sustainable development³.”

23. The wise use provisions of the Convention apply, as far as possible, to all wetland ecosystems. Societal choice is inherent in advancing human well-being and poverty alleviation, which depends on the maintenance of ecosystem benefits/services. Pressures to follow sustainable development precepts, and to maintain environmental, economic and social sustainability

2 Including *inter alia* the Convention on Biological Diversity’s “Ecosystem Approach” (CBD COP5 Decision V/6) and that applied by HELCOM and OSPAR (Declaration of the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions, Bremen 25-26 June 2003).

3 The phrase “in the context of sustainable development” is intended to recognize that whilst some wetland development is inevitable and that many developments have important benefits to society, developments can be facilitated in sustainable ways by approaches elaborated under the Convention, and it is not appropriate to imply that ‘development’ is an objective for every wetland.

in land use decisions, encourage compromises (“trade-offs”) between individual and collective interests.

24. Within the context of ecosystem approaches, planning processes for promoting the delivery of wetland ecosystem benefits/services should be formulated and implemented in the context of the maintenance or enhancement, as appropriate, of wetland ecological character at appropriate spatial and temporal scales.



Fish drying, Coppename Monding Ramsar Site, Suriname, 2007 (Photo: Margarita Astrálagá)

Additional information

Wetlands and Poverty Reduction Project: securing wetlands - sustaining life

by Wetlands International

and updated by Ramsar staff for the 4th edition the Handbooks

The Wetlands and Poverty Reduction Project of Wetlands International ran from January 2005 to December 2008, and was dedicated to demonstrating and promoting the crucial role wetlands can play in poverty reduction. Together with partners from environmental and development organizations, the project took place in a context of WI's Wetlands and Livelihoods Programme, which supports improved wetland management. The challenge is to overcome the conflicts of interest as well as lack of knowledge among people involved in wetland management.

The project developed clear views and information, offered training facilities and used advocacy and communication to bring knowledge to the right people. For optimal wetland management, leading to sustainable benefits for many, advocacy was also undertaken to promote reversal of adverse policies and practices and support of partnerships and policies that lead to long term solutions for the poor.

Knowledge: developing convincing information and views

The project worked on a knowledge base of information and clear views on various wetland topics in order to inform and convince those responsible for policies. Demonstration projects were set up in Africa and Asia to explore the potential of different kinds of wetlands for poverty reduction and how they can best be managed.

In the demonstration projects, local partnerships illustrated how poverty reduction can be achieved through the wise use of wetlands, showing in a practical way, how a resilient wetland ecosystem can both provide for human needs and sustain biodiversity. Stakeholders in the demonstration projects were encouraged to learn from the experience of others, especially indigenous stakeholders. One of the funding criteria for the projects was the demonstrable commitment of an active partnership between conservation and development agencies and other sectoral interests in project planning and implementation.

Examples of the demonstration projects include:

MALI: Poverty reduction in the Inner Niger Delta

KENYA: Improved water management as an entry point for community livelihood improvement, sustainable land use planning, and institutional development

ZAMBIA-MALAWI: Striking a balance – maintaining seasonal wetlands and their livelihood contributions in South Central Africa



Fishing in the Inner Niger Delta. Photo: Leo Zwarts.

SOUTH AFRICA: Coastal peat swamp forest conservation and poverty alleviation in and around the Greater St. Lucia Wetland Park

INDONESIA: Improving the livelihoods of poor and vulnerable communities in the buffer zone of Berbak and Sembilang National Parks through the wise use of wetlands.

Of course, a lot can be learned by looking at the successes and failures of wetland management in the past. This is our second source of knowledge: the development of 'lessons learned' from wetland management. Wetlands International itself also has a long history of wetland management from which we can learn. All this information forms the basis of our activities.

Training the right people

Training people who deal with wetland policies and management is key to success. Therefore the project and its partners developed a large-scale training programme, consisting of two courses; one for high level policy makers and one for mid-level wetland managers. Partner institutions offered these courses in West and East Africa, respectively in French and English. In addition, 100 trainers were trained so that they also can offer these courses to many others.

Working on better policies

The project hoped to bring about improvements in policies of specific international decision-making bodies like the Ramsar Convention, CBD and regional authorities in Africa, Latin America and Asia so that the role of wetlands in poverty alleviation is recognized in appropriate policy documents. At this international level, Wetlands International plays a visible role at conventions; informing and supporting delegations representing governments as well as other non-governmental stakeholders.



Drying fish, Inner Niger Delta. *Photo: Leo Zwarts.*

Most of our ambitions are however on the development of national policies in developing countries. At this level we work in partnership with local NGOs. These NGOs are best able to identify opportunities to improve policies. They will also urge our mission with key people in other relevant NGOs, governments and companies.

Finally, we work with governmental and non-governmental donors to improve their policies on poverty reduction and conservation.

For more information visit <http://www.wetlands.org>.

Section II

Human well-being and wetlands: the Changwon Declaration

The “Changwon Declaration on human-well being and wetlands” was an initiative of the government of the Republic of Korea in 2008, the year of Ramsar’s 10th meeting of the Conference of the Contracting Parties (COP10) which was hosted in the Korean city of Changwon. The text of the Declaration was prepared through a collaborative process drawing on the expertise of the Convention’s Scientific and Technical Review Panel (STRP), the International Organization Partners (IOPs), the government of Korea and the Ramsar Secretariat.

The Declaration was adopted at COP10 as the Annex to Resolution X.3; and it embodied the spirit of the theme of the COP, which was “Healthy wetlands, healthy people”. This slogan reflected key principles in the Convention’s evolution for the priorities of the 21st Century. The text of the adopting Resolution is given at the end of this Handbook; and the Declaration itself is reproduced in the present Section below.

The Changwon Declaration is written in the form of key messages for decision-makers in other (i.e., non-wetland) sectors, those whose business both affects wetland conservation and wise use and depends on the maintenance of healthy wetlands, and it recognizes that this fact does not as yet appear to be widely understood. The Declaration was designed to be accessible for everyone to take out and use, at all scales, from local to international. There are key messages for five major sectors, covering:

- Water and wetlands
- Climate change and wetlands
- People’s livelihoods and wetlands
- People’s health and wetlands
- Land use change, biodiversity and wetlands

and on two types of cross-cutting mechanism which are helpful in delivering responses, namely:

- Planning, decision-making, finance and economics
- Sharing knowledge and experience

The Resolution thanks the government of the Republic of Korea for its declared intention to champion the dissemination and uptake of this Declaration in future, and it sets out a range of actions by Contracting Parties, Convention bodies and others to make use of and promote the Declaration.

It may also be noted that the Changwon Declaration was prepared in such a manner as to permit the extraction of just the emboldened text from each key message to form a more succinct “summary for decision-makers”.

The full text of the Annex to Resolution X.3 follows.

The Changwon Declaration on human well-being and wetlands

WHY SHOULD YOU READ AND USE THIS DECLARATION?

Wetlands provide food, store carbon, regulate the water flows, store energy, and are crucial for biodiversity. Their benefits to people are essential for the future security of humankind. Conservation and the wise and use of wetlands are vital for people, especially the poor.

Human well-being depends on many benefits provided to people by ecosystems, some of which come from healthy wetlands. Policymaking, planning, decision-making and management action by a wide range of sectors, at all levels from international to local, can benefit from the global consensus input that the Ramsar Convention provides. This includes the identification of the relevance of wetlands, the importance of their conservation and wise use, and ensuring security of the benefits that wetlands provide in terms of water, carbon storage, food, energy, biodiversity and livelihoods. It also includes technical know-how, guidance, models and support networks to help in putting this knowledge to practical use.

The Changwon Declaration presents an overview of priority action steps that together show “how to” deliver some of the world’s most critical environmental sustainability goals.

The Changwon Declaration is a statement and call to action from the 10th meeting of the Conference of Contracting Parties to the Ramsar Convention on Wetlands, which was held in Changwon, Republic of Korea, from 28 October to 4 November 2008

The Changwon Declaration is relevant to all of us, everywhere, who are concerned with the future of our environment.

If you are a planner, policymaker, decision-maker, elected representative or manager in any environmental, land or resource-use sector, or working in the fields of education and communication, human health, economics or livelihoods, then this Declaration is directed to you. Your actions influence the future of wetlands.

Where does this Declaration come from?

The Ramsar Convention on Wetlands is the global intergovernmental agreement concerned with the conservation and wise use of all the world’s wetlands. It was established in the city of Ramsar in the Islamic Republic of Iran on 2 February 1971.

The mission of the Convention on Wetlands (Ramsar, Iran, 1971)¹ is:

“the conservation and wise use² of all wetlands³ through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world”.

As the Ramsar Convention approaches four decades of existence, it continues to grow and to focus its agenda on the critical priorities for the environment at global, national and local levels. The Conference of the Convention’s Contracting Parties held its 10th meeting in Changwon, Republic of Korea, from 28 October to 4 November 2008, on the theme of “Healthy wetlands, healthy people”⁴, focusing on the link between human well-being and the functions of wetlands and the identification of positive actions in this regard.

Who should use this Declaration?

The Conference addresses this Declaration to all stakeholders in environmental governance and management, particularly those in positions of leadership, both in relevant fora at global level, including heads of government, and equally in “hands-on” delivery at local and river basin levels.

Why is it not “just another Declaration”?

Declarations have been issued from many international environmental conferences. The Changwon Declaration aims not to cover “standard” ground, but to add value by:

- being directed primarily to audiences beyond the Ramsar Convention itself, and to opportunities for action;
- offering positive, practical action steps; and
- defining the ways in which the Declaration’s impact will be assured.

What is in this Declaration?

The Declaration highlights positive actions for ensuring human well-being and security outcomes in the future under five priority thematic headings below, followed by two key areas of cross-cutting delivery mechanisms.

What does this mean in practice?

Water and wetlands

The degradation and loss of wetlands is more rapid than that of other ecosystems, and this trend is accelerating, due to major changes in land use, water diversions, and infrastructure development. Access to freshwater is declining for 1-2 billion people worldwide, and this in turn negatively affects food production, human health, and economic development, and it can increase societal conflict.

There is an urgent need to improve water governance. Instead of being demand-driven, which promotes over-allocation of water, water governance should treat wetlands as our “*natural water infrastructure*”, integral to water resource management at the scale of river basins. **Continuing with “business as usual” is not an option.**

Our increasing demand for, and over-use of, water jeopardizes human well-being and the environment. Access to safe water, human health, food production, economic development and geopolitical stability are made less secure by the degradation of wetlands driven by the rapidly widening gap between water demand and supply.

There is often not enough water to meet our direct human needs and to maintain the wetlands we need. Even with current attempts to maintain water flows for ecosystems, the capacity of wetlands to continue to deliver benefits to people and biodiversity, including clean and reliable water supplies, is declining. Actions to support water allocation to ecosystems, such as environmental flows, placing upper limits on water allocations (water ‘caps’), and new water management legislation, must be strengthened.

To close this “water gap”, we need to:

- **use our available water more efficiently;**
- **stop our wetlands from becoming degraded or lost** – based on clearly recognizing that we all depend on healthy wetlands for our water security, and that wetland services are currently being lost at a faster rate than in any other ecosystem;

- **restore our wetlands that are already degraded** – this offers us an efficient and cost-effective means of increasing ground and surface water storage, improving water quality, sustaining agriculture and fisheries, and protecting biodiversity.
- **wisely manage and protect our wetlands** – by always ensuring that they have enough water for them to continue to be the source of the quantity and quality of the water we need for food production, drinking water and sanitation. Failure to do so makes our water problems worse, **since wetlands are the only source of water to which we have easy access.**

Climate change and wetlands

Many types of wetlands play an important role in sequestering and storing carbon. They are particularly vulnerable to climate change impacts, while human disturbances of the same wetland systems can cause huge carbon emissions.

Wetlands are vital parts of the natural infrastructure we need for addressing climate change. Degradation and loss of wetlands make climate change worse and leave people more vulnerable to climate change impacts such as floods, droughts and famine. Many climate change policy responses for more water storage and transfers, as well as energy generation, if poorly implemented, may deleteriously impact on wetlands.

Climate change is increasing uncertainty in water management and making it more difficult to close the gap between water demand and supply. We will increasingly feel the effects of climate change most directly through changes in the distribution and availability of water, increasing pressures on the health of wetlands. Restoring wetlands and maintaining hydrological cycles is of utmost importance in responses for addressing climate change, flood mitigation, water supply, food provision and biodiversity conservation.

Coastal wetlands will play a major part in strategies established to deal with problems in coastal areas created by sea level rise.

Governments need to include water and wetland management in effective strategies for addressing climate change at national level. Decision-makers need to recognize the natural infrastructure of wetlands as a major asset in combating and adapting to climate change.

Water and well-functioning wetlands play a key role in responding to climate change and in regulating natural climatic processes (through the water cycle, maintenance of biodiversity, reduced greenhouse gas emissions, and buffering of impacts). Conservation and wise use of wetlands help to reduce the negative economic, social and ecological effects that may result.

Developing opportunities should be seized for collaboration among international technical bodies involved in climate change (e.g., the Intergovernmental Panel on Climate Change, the Ramsar Scientific and Technical Review Panel), **to share understanding and harmonise analyses,** especially in relation to wetlands/water/climate linkages.

People's livelihoods and wetlands

When policies in different sectors are not harmonised, many major developments and infrastructure schemes aimed at poverty reduction can actually lead to the degradation of wetlands, thus undermining their ability to provide vital services for local communities and ultimately leading to further and deepening poverty.

Action is needed to maintain the benefits provided by wetlands for economic development and the livelihoods of people, especially the poor. Investment in maintenance of the services provided

by wetlands should be integral to Poverty Reduction Strategy Papers and related policies and plans.

Wise use, management and restoration of wetlands should help to build opportunities for improving people's livelihoods, particularly for wetland-dependent, marginalised and vulnerable people. Wetland degradation affects livelihoods and exacerbates poverty, particularly in marginalised and vulnerable sections of society.

Wetland/livelihoods linkages need to be better analysed and documented. Capacity and partnerships should be promoted at multiple levels to support learning, collecting and sharing knowledge about these linkages.

Sustainable wetland management should be supported by indigenous and traditional knowledge, recognition of cultural identities associated with wetlands, stewardship promoted by economic incentives, and diversification of the support base for livelihoods.

People's health and wetlands

Wetlands are important for the health benefits they provide, and also as places that people can visit for education, recreation, ecotourism, spiritual and cultural experiences, or simply to enjoy their natural beauty.

Interrelationships between wetland ecosystems and human health should be a key component of national and international policies, plans and strategies.

Development sectors, including mining, other extractive industries, infrastructure development, water and sanitation, energy, agriculture, transport and others can have direct or indirect effects on wetlands. These lead to negative impacts on wetland ecosystem services, including those that support human health and well-being. Managers and decision-makers in such development sectors need to be more aware of this and take all possible measures to avoid these negative impacts.

The health and wetland sectors need to co-manage the links between wetland ecological character⁵ and human health. Wetland and water managers must identify and implement interventions that benefit both wetland ecosystem "health" and human health.

It is already clear that many of the continuing pressures on wetlands that are driving trends in human health are rooted in issues of water, as for example waterborne transmission of diseases and vectors and/or dwindling supplies of water of suitable quality for food production, sanitation, and drinking water.

Land use change, biodiversity and wetlands

Better knowledge and understanding of the costs and benefits of changes to wetland ecosystems lead to better decision-making. Decisions on land use change must integrate adequate knowledge of the range of benefits, and their values, that wetlands provide for people and biodiversity.

Decision-making should, wherever possible, give priority to safeguarding naturally-functioning wetlands and the benefits they provide, especially through ensuring the sustainability of ecosystem services, while recognizing that human-made wetland systems can also make a significant contribution to water and food security objectives.

More actions are required to address the root causes of the loss of biodiversity and to reverse these losses by reference to agreed recovery targets, including targets to be adopted in the follow-up to the "2010 target"⁶ concerning significant reduction in the rate of decline of biodiversity.

What types of cross-cutting mechanisms are most helpful in delivering all this?

Planning, decision-making, finance and economics

Policy development and decision-making in response to each of the issues addressed in this Declaration very often require tradeoffs across policy objectives from multiple sectors. Sound decision-making depends upon wise balancing of legitimate objectives that are interconnected, even if full and detailed information is not available.

Good use of rapid and practical decision-support tools (such as rapid assessment, conflict resolution, mediation, decision-trees, and cost-benefit analysis) can often be of critical assistance in identifying issues and policy options.

Full recognition should be given to the significance of wetlands in spatial planning, especially Wetlands of International Importance (Ramsar Sites⁷), so that the values they represent can properly inform land-use and investment priority-setting and the adoption of necessary safeguards.

Cost-benefit analyses should be sufficiently comprehensive to best reflect the economic value of wetlands, as well as the reality that investing in the maintenance of wetland ecological character is usually a much more cost-effective strategy than later remediation for the loss of wetland services.

Adequate and sustainable financing for wetland conservation and wise use is essential, and this can be helped by the use of innovative financial instruments and partnerships between those sectors and stakeholders outside the Ramsar Convention who might not have worked together on wetland issues in the past. Especially when resources are limited, activities relevant to wetland conservation and wise use should seek to maximise the efficiency of use of currently available resources.

Sharing knowledge and experience

Basic information on the global extent and characterisation of wetlands urgently needs to be enhanced. There are increasing opportunities to make good use of evolving earth observation techniques and other information technologies.

Organizations with shared interests in data and information and knowledge (including indigenous and traditional knowledge) relevant to the issues covered in this Declaration should intensify efforts to seek common, harmonised and accessible approaches, so that knowledge and experience (for example, concerning good practices) can be shared more effectively, including through appropriate information technology applications.

Your call to action

Each and every one of us has a stake in the outcomes that are supported by this Declaration.

Many groups around the world are already working towards the wise use of wetlands in just the way this Declaration calls for. There are valuable experiences and knowledge to be shared that can help us all to make real, tangible progress. Reach out, get connected, get wet!

Ensuring impact

Measures of the success of this Declaration will include:

- its existence becoming widely known, reported, translated and remembered;
 - its messages being taken up in planning and decision-making in local and river basin level governance/management processes;
 - its relevant elements being incorporated into national-level plans, decisions and action programmes;
 - its elements being incorporated into international policy statements, decisions and action programmes, including through briefings for government delegations to relevant international meetings.
-

Notes:

¹The **Ramsar Convention on Wetlands** is the lead intergovernmental authority on wetlands and strives to ensure that the contributions wetlands make to all aspects of human well-being are recognized and strengthened in all sectors and at all levels of society.

²**“Wise use”** of wetlands has been defined under the Convention as “the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development”. (The phrase “in the context of sustainable development” is intended to recognize that whilst some wetland development is inevitable and that many developments bring important benefits to society, developments can be facilitated in sustainable ways by approaches elaborated under the Convention, and it is not appropriate to imply that ‘development’ is an objective for every wetland.)

³**“Wetlands”** encompass a broader range of ecosystems than is often realised. Article 1.1 of the Ramsar Convention defines them as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”.

⁴In recent years, Ramsar **Conferences of the Contracting Parties (COPs) have been given themed titles** to reflect priority issues of the moment in the Convention’s evolution. Previous themes have emphasised different aspects of the links between wetlands and people, and the theme for COP10, “Healthy wetlands, healthy people”, positions the Convention in relation to an emerging understanding about the critical links between wetlands and human health and sets the context for the adoption of new decisions in this area.

⁵The **“ecological character”** of wetlands is a key concept of the Ramsar Convention, defined as “the combination of the ecosystem components, processes and benefits/services that characterise the wetland at a given point in time”. (Within this context, ecosystem benefits are defined in accordance with the Millennium Ecosystem Assessment definition of ecosystem services as “the benefits that people receive from ecosystems”).

⁶The **“2010 Biodiversity target”**, adopted by the Convention on Biological Diversity (CBD) and by Heads of State at the 2002 United Nations World Summit on Sustainable Development (WSSD), is “to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.”

⁷**“Ramsar Sites”** (Wetlands of International Importance) are recognized and designated by the governments of the world that are Contracting Parties to the Ramsar Convention. They form the largest global network of “protected areas”, currently (as of November 2008) covering over 168 million hectares in over 1,822 sites.]

Appendix 1

Ramsar's wise use definition in relation to sustainable use, sustainable development and ecosystem approaches

(from Ramsar COP9 DOC. 16, paragraphs 11 and 14-20: Rationale for proposals for *A Conceptual Framework for the wise use of wetlands* and the updating of wise use and ecological character definitions)

The 3rd Ramsar Conference of the Contracting Parties (COP3, 1987) defined the wise use of wetlands as:

“their sustainable utilisation for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem.”

As part of its definition of the wise use of wetlands, COP3 also defined “sustainable utilisation” 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”.

Also in 1987, the Brundtland Commission defined “sustainable development” as:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (UN World Commission on Environment and Development. 1987. *Our common future.*)

Ramsar COP3 also recognized that both wise use policy and actions at site management levels are integral parts of sustainable development. Since the terms of the Brundtland definition and the Ramsar COP3 definition of “sustainable utilisation” are very similar, it follows that rather than equating wise use simply with sustainable utilisation (use), it is now more appropriate and relevant to define wise use in the context of sustainable development.

Furthermore, wise use as a sustainable development mechanism has subsequently been recognized by the Ramsar Convention in 1996 (COP6) through its adoption of the Convention's mission statement in the Strategic Plan 1997-2002, reaffirmed by this amended mission statement in the Strategic Plan 2003-2008 (COP8 Resolution VIII.25):

“the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world.”

The Convention on Biological Diversity (CBD) has described its “ecosystem approach” as that Convention's overarching approach for its implementation. CBD has described (in Decision V/6; COP5, 2000) the “ecosystem approach” as:

“a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Thus, the application of the ecosystem approach will help to reach a balance of the three objectives of the Convention: conservation; sustainable use; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.”

Thus the CBD's overarching "ecosystem approach" can be regarded as congruent with Ramsar's overarching concept of "wise use". In addition, the "Addis Ababa Principles and Guidelines for the sustainable use of biodiversity", adopted by the Convention on Biological Diversity in 2004 (CBD COP7 Decision VI/12), focus attention on the sustainable use of components of biological diversity. These guidelines cover a similar range of implementation interventions at similar levels of detail to the original Ramsar Wise Use Guidance of COP4 and COP5. Hence the CBD's sustainable use guidelines also equate to the Ramsar 'toolkit' of guidelines for delivering wise use through maintaining the ecological character of wetlands.

In addition to the CBD's description of "ecosystem approach", there are a number of other definitions and descriptions in current use. These include the definition used by the OSPAR and Helsinki Commissions (Declaration of the First Joint Ministerial Meeting of the Helsinki and OPSAR Commissions, June 2003) and the description and eleven principles applied by the US Fish and Wildlife Service.



At this working saltpan in the town of Pomorie, an important tourist resort on the Black Sea coast of Bulgaria, there are plans to establish a salt museum and to train young salters in the traditional craft. *Photo: Hjalmar Dahm and Theodora Petanidou.*

Appendix 2

Additional guidance on the wise use of wetlands

The text below, taken from Resolution 5.6, *Additional guidance on the implementation of the wise use concept* (1993), is reproduced here since research and training issues have not been further developed by the guidelines in this Handbook. For further information on Ramsar and training/capacity building, readers are also referred to [http://www.ramsar.org/cda/en/ramsar-activities-cepa-advisory-board-on/main/ramsar/1-63-69%5E20381_4000_0__] for information on the form and function of the Ramsar Advisory Board on Capacity Building.

II.3 Research

Research can be anything that expands upon basic knowledge. Particular areas that may deserve attention are both identification and quantification of wetland values, sustainability of wetland use, and landscape functioning and modification. Contracting Parties should take positive steps to acquire and, when possible, share any knowledge developed on wetland values, functions and uses.

- 1) Priority research actions may include:
 - The development of a vocabulary of terms, understandable world-wide;
 - The development of means to emphasize landscape or catchment approaches in management;
 - The development of techniques for monitoring ecological change and forecasting the evolution of wetland characteristics under the pressure of present uses;
 - The improvement of the knowledge base of wetland functions and values, especially the socio-economic values of wetlands, in order to learn about the traditional management techniques of the local populations and their needs;
 - The improvement of the knowledge of the scientific classification of wetlands micro-organisms, plants and animals, and the lodging of study specimens with museums or other appropriate institutions;
 - The development of methodologies to evaluate sustainable practices;
 - The provision of the data on which alternative/wise use technologies can be developed;
 - The development of techniques for restoration of wetlands.
- 2) The above-mentioned research questions represent an indication of needs. In practice, it can be expected that the number of specific research questions to be addressed will increase as progress is made in natural resource programmes. Research priorities must be based on management needs.

II.4 Training

- 1) Attention should be devoted to four aspects of training:

- The definition of training needs
- The differing needs between regions, countries and sites

Expertise may not always be available and some key aspects of wise use may not be covered in the existing programme. These key aspects must be considered as priorities for further training activities. Therefore, the first step in establishing a training programme should be to carry out a training needs analysis.

- The target audience

There is a huge difference between educational and awareness programmes and professional training. Generally, it can be said that while the general public and senior policy makers should be made aware of ecological, cultural, social and economical values of wetland ecosystems, training should be provided for those who are directly involved in administering and practising wetland management. Training sessions should focus on the most up-to-date methods for implementing wise use. Such sessions need also to be organized for judicial authorities and other law enforcement officials.

- The subject

Training should furnish wetland managers and administrators with the professional knowledge needed for establishing, defending, and implementing the concept of wise use of wetlands.

2) Three broad types of training appear to be of particular relevance for wetland professionals:

- Courses on integrated management

Training should seek to bring together specialists from different fields to generate a common understanding and a common approach to wetland management and planning;

- Courses on wetland management techniques

Training should seek to provide the participants with the most up-to-date and effective techniques of inventory, planning, monitoring, environmental impact assessment (EIA) and restoration;

- Courses for field staff

Wardens and rangers need to have a very basic understanding of the concept of wise use and to be able to deal with day-to-day situations such as enforcement of legislation and public awareness;



Ramsar Officer Vainuupo Jungblut in a training session for young people, Samoa, 2007

The development of training manuals and other resource materials should be an important long-term goal for any training programme.

3) Training methods and resources

Training activities and transfer of appropriate knowledge should be an integrated component of all wise use projects. Those activities should be as catalytic as possible, and seek to train potential trainers at regional level who can then pass on their expertise to lower levels, and involve the cooperation of governmental and non-governmental organizations, using local resources and institutions whenever possible.

The Guidelines for Global Action on Peatlands (GGAP)

The **Guidelines for Global Action on Peatlands (GGAP)**, adopted as the Annex to Resolution VIII.17 by the 8th Conference of the Contracting Parties, Valencia, Spain, 2002, have not been included as a separate volume in this [4th] Edition of the Handbooks. The text below, taken from these guidelines, provides the actions relevant to research and training included in the GGAP.

E. Research networks, regional centres of expertise, and institutional capacity

Guidelines for Action

- E1. Networks for research and programme cooperation should be established, involving research institutes and other peatland scientific organizations so as to share knowledge and information and improve understanding of the biodiversity, ecological character, values, and functions of the world's peatlands.
 - E2. Research institutes and other peatland scientific organizations should seek opportunities for the development of cooperative scientific and management studies to fill the identified gaps in the knowledge required to implement peatland wise use. The GAP Coordinating Committee (see Guideline G1 below) should assist in this process by reviewing and identifying such gaps.
 - E3. Opportunities should be sought for cooperative research to further elucidate the role of peatlands in mitigating the impacts of global climate change, in line with the gaps in knowledge identified by the comprehensive review of "Wetlands and climate change: impacts and mitigation" submitted to Ramsar COP8.
 - E4. The creation of Regional Centres of Expertise in the wise use and management of peatlands should be promoted for training and the transfer of knowledge in order to assist developing countries and those with economies in transition to increase their capacity for implementation of wise use of peatlands.
 - E5. Peatlands suitable for restoration and rehabilitation should be identified following the procedures outlined in the *Principles and guidelines on wetland restoration* adopted by Ramsar COP8 (Resolution VIII.16), and research and transfer of technologies for peatland management and the restoration and rehabilitation of appropriate peatlands should be facilitated, particularly for local community use in developing countries and countries with economies in transition.
 - E6. Contracting Parties should encourage the establishment and activities of national and local organizations with expertise in peatland management.
 - E7. Research into, and development of, appropriate sustainable alternatives to peat in, for example, horticultural use, should be encouraged.
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Appendix 3

The Ramsar Handbooks for the wise use of wetlands: Contents of (4th edition) Handbooks 2-20

Handbook 2 National Wetland Policies

Developing and implementing National Wetland Policies

which includes guidance on:

- Why are wetland policies needed?
- What is a wetland policy?
- The relationship between policy and wise use
- Considerations for a National Wetland Committee
- National issues statement and background paper
- Defining wetlands at a national level
- Defining stakeholders and initiating national consultations
- Objectives for a National Wetland Policy and policy implementation strategies
- Seeking government endorsement and approval
- Defining who is responsible for implementation
- Developing implementation guidelines and defining resource needs
- Interministerial harmonization
- Establishing a national monitoring programme

Handbook 3 Laws and institutions

Reviewing laws and institutions to promote the conservation and wise use of wetlands

which includes guidance on:

- The purpose of a legal and institutional review
- Establishing political and institutional responsibility for the review
- Defining the review methodology
- Establishing a knowledge base of relevant legal and institutional measures
- Evaluating the knowledge base
- Recommending legal and institutional changes necessary to support conservation and wise use

Handbook 4 Avian influenza and wetlands

Guidance on control of and responses to highly pathogenic avian influenza

which includes guidance on:

- Preparing for and responding to outbreaks of highly pathogenic avian influenza
- Reducing avian influenza risks at Ramsar Sites and other wetlands
- Recommended ornithological information to be collected during surveillance programmes and mortality events
- Establishment and operation of ornithological expert panels
- International networking
- Lessons learnt

Handbook 5 Partnerships

Key partnerships for implementation of the Ramsar Convention

which includes guidance on:

- Multilateral Environmental Agreements and other institutions
- The Ramsar Convention's International Organization Partners
- Other stakeholders
- Principles for partnerships between the Ramsar Convention and the business sector

Handbook 6 Wetland CEPA

The Convention's Programme on communication, education, participation and awareness (CEPA) 2009-20015

which includes guidance on:

- Vision and guiding principles
- Goals and strategies to pursue the Vision
- Understanding what is meant by the terms "communication, education, participation, awareness, capacity-building and training"
- Roles and responsibilities of the CEPA National Focal Points
- Target groups and stakeholders

Handbook 7 Participatory skills

Establishing and strengthening local communities' and indigenous people's participation in the management of wetlands

which includes guidance on:

- Why community involvement is beneficial
- Lessons learned from community involvement
- Incentives; trust; flexibility; knowledge exchange and capacity building; continuity
- Engaging local and indigenous people
- Monitoring and evaluating the involvement of local people in wetland management

Handbook 8 Water-related guidance

An Integrated Framework for the Convention's water-related guidance

which includes guidance on:

- Water and Ramsar – an overview
- Ramsar's suite of Resolutions and guidance in relation to the hydrological cycle
- Water in the environment
- Water resources management in the context of the hydrological cycle
- A framework for Ramsar's water-related guidance
- Ramsar resolutions and guidance related directly to water
- Ongoing development of the framework for water-related guidance

Handbook 9 River basin management

Integrating wetland conservation and wise use into river basin management

which includes guidance on:

- Understanding integration in the context of Ramsar, wetlands, and river basin management
- Overview of the scientific and technical guidance
- The "Critical Path" approach
- Getting started
- Scientific and technical guidance at national level
- Scientific and technical guidance at river basin level
- International cooperation and partnerships

Handbook 10 Water allocation and management

Guidelines for the allocation and management of water for maintaining the ecological functions of wetlands

which includes guidance on:

- Principles
- The decision-making framework
- The process for determining water allocations
- Tools and methods
- Implementation

Handbook 11 Managing groundwater

Managing groundwater to maintain wetland ecological character

which includes guidance on:

- An overview of groundwater-related wetlands
- Functional links between groundwater and wetlands
- Understanding groundwater-related wetlands
- Quantifying water transfer mechanisms
- Predicting hydrological impacts through modelling
- Towards a framework for the development of groundwater management strategies to maintain wetlands

Handbook 12 Coastal management

Wetland issues in Integrated Coastal Zone Management

which includes guidance on:

- Recognizing the role and significance of the Ramsar Convention and wetlands in the coastal zone
- Ensuring full awareness of the values and functions of wetlands in the coastal zone
- Using mechanisms for securing the conservation and sustainable use of wetlands in the coastal zone
- Addressing the integration of the conservation and sustainable use of wetlands in broad-scale integrated ecosystem management

Handbook 13 Inventory, assessment and monitoring

An Integrated Framework for wetland inventory, assessment, and monitoring

which includes guidance on:

- The importance of identifying, assessing and reporting the status of Ramsar Sites and other wetlands in the implementation of the Convention
- The relationship between wetland inventory, assessment, monitoring and management
- Multi-scalar approaches to wetland inventory, assessment and monitoring
- The Ramsar 'toolkit' of guidance available to Ramsar Parties for implementing the integrated wetland inventory, assessment and monitoring framework
- Gaps in Ramsar's 'toolkit' of inventory, assessment and monitoring guidance
- Priorities for improving integrated wetland inventory, assessment and monitoring

Handbook 14 Data and information needs

A Framework for Ramsar data and information needs

which includes guidance on:

- Purposes for needing data and information under the Convention
- Guiding principles for assessing data and information needs
- Developing the data and information needs Framework

Handbook 15 Wetland inventory

A Ramsar framework for wetland inventory and ecological character description

which includes guidance on:

- Stating the purpose and objective
- Reviewing existing knowledge and information
- Reviewing existing inventory methods
- Determining the scale and resolution
- Establishing a core or minimum data set
- Establishing a habitat classification
- Choosing an appropriate method
- Establishing a data management system
- Establishing a time schedule and the level of resources that are required

- Assessing the feasibility & cost effectiveness
- Establishing a reporting procedure
- Establishing a review and evaluation process
- Planning a pilot study
- Implementation of the inventory
- Describing the ecological character of individual wetlands

Handbook 16 Impact assessment

Guidelines on biodiversity-inclusive environmental impact assessment and strategic environmental assessment

which includes guidance on:

- Stages in the process
- Biodiversity issues at different stages of environmental impact assessment
- Indicative screening criteria, list of ecosystem services and aspects of biodiversity
- Strategic environmental assessment tools
- Giving special attention to biodiversity in strategic environmental assessment (SEA) and decision making
- Biodiversity issues of relevance to SEA
- When and how to address biodiversity in SEA

Handbook 17 Designating Ramsar Sites

Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance

which includes guidance on:

- The vision, objectives and short-term targets for the List of Wetlands of International Importance
- Wetlands of International Importance and the Ramsar principle of wise use
- Guidelines for adopting a systematic approach to identifying priority wetlands for designation under the Ramsar Convention
- Criteria for identifying Wetlands of International Importance, guidelines for their application, and long-term targets
- Guidelines for identifying and designating specific wetland types
- Guidance on compiling a Ramsar Information Sheet (RIS)

Handbook 18 Managing wetlands

Frameworks for managing Wetlands of International Importance and other wetlands

which includes guidance on:

- Describing the 'ecological character' of a wetland
- Developing a management planning process
- Designing a monitoring programme
- Applying a wetland risk assessment framework

Handbook 19 Addressing change in wetland ecological character

Addressing change in the ecological character of Ramsar Sites and other wetlands

which includes guidance on:

- A Framework for processes of detecting, reporting and responding to change in wetland ecological character
- Applying the Montreux Record 'tool' of the Convention
- Deleting or restricting the boundaries of a listed Ramsar Site: interpreting "urgent national interests" under Article 2.5 of the Convention
- Deleting or restricting the boundaries of a listed Ramsar Site: reasons other than under Article 2.5 of the Convention
- Designing restoration programmes
- Compensation and mitigation for wetland loss

Handbook 20 International cooperation

Guidelines and other support for international cooperation under the Ramsar Convention on Wetlands

which includes guidance on:

- Interpreting Article 5 of the Ramsar Convention
- Managing shared wetlands and river basins
- Managing shared wetland-dependent species
- Ramsar working in partnership with international/regional environment Conventions and agencies
- Sharing of expertise and information
- International assistance to support the conservation and wise use of wetlands
- Sustainable harvesting and international trade in wetland derived plant and animal products
- Regulation of foreign investment to ensure wetland conservation and wise use
- Operational Guidelines for regional initiatives in the framework of the Ramsar Convention



Dolphin rescue operations in Pakistan, 2005 (Photo: Najjam Khurshid)

Appendix 4

Additional recent examples of Ramsar principles and guidance addressing particular drivers of change to wetlands

This Appendix presents selected extracts from some more recent examples of principles, guidance and other information considered by the COP concerning ways in which particular drivers of change may be addressed in positive ways that integrate with the maintenance of wetland ecosystem services. The following topics are featured:

- Climate change
- Poverty
- Health
- Agriculture
- Fisheries
- Cultural values
- Invasive species
- Extractive industries
- Urbanization

Climate change

Resolution X.24 on *Climate change and wetlands*, adopted by COP10 in 2008, updated and superseded earlier COP decisions on the subject. Among its clauses are the following:

1. RECOGNIZING that wetlands deliver a wide range of ecosystem services that contribute to human well-being, and that in some wetland types this may include services relating to climate change mitigation and/or adaptation;
14. NOTING that many climate change mitigation and adaptation policies include measures such as increasing energy supplies from hydropower and biofuels and more water storages and inter-basin water transfers, and STRESSING the benefits of implementing Ramsar's water-related guidance (Resolution IX.1 Annex C and Resolution X.19) so as to ensure where possible that such climate policies promote positive and minimise negative impacts on the ecological character of wetlands;
16. NOTING that wetlands can also reduce adverse effects of climate change, such as food shortages, by providing vital biodiversity resources, but CONCERNED that the continued degradation and loss of both coastal and inland wetlands is reducing the capacity of wetlands to deliver such resources;
18. RECOGNIZING that the wise use and restoration of wetlands contributes to building the resilience of human populations to climate change impacts and can attenuate natural disasters expected with climate change, such as the use of restored floodplain wetlands to reduce risks from flooding;
19. REAFFIRMING that integrative policies and planning measures need to be encouraged in order to address the influence of global climate change on the interdependencies between wetlands, water management, agriculture, energy production, poverty reduction and human health;
28. URGES Contracting Parties to manage wetlands wisely to reduce the multiple pressures they face and thereby increase their resilience to climate change and to take

advantage of the significant opportunities to use wetlands wisely as a response option to reduce the impacts of climate change;

30. ENCOURAGES Contracting Parties to promote the restoration of river, lake and aquifer basins and their wetlands as an important aspect of policy related to climate change;
31. URGES Contracting Parties and other governments, where appropriate, to include in national climate change strategies the protection of mountain wetlands (...);
32. ALSO URGES relevant Contracting Parties to take urgent action, as far as possible and within national capacity, to reduce the degradation, promote restoration, improve management practices of peatlands and other wetland types that are significant [greenhouse gas] sinks, (...);
36. ENCOURAGES Contracting Parties to promote integrated coordination in developing and implementing national policies related to water management, agriculture, energy production, poverty reduction, and human health, in order to ensure that sectoral objectives are mutually supportive in addressing the likely negative impacts of climate change (...);
41. URGES Contracting Parties to develop and implement policies that promote opportunities to take advantage of the regulatory services already provided by wetlands to the global climate system, while at the same time contributing to improving human livelihoods and meeting biodiversity goals (...).

Poverty

Resolution X.28 on Wetlands and poverty eradication was adopted by COP10 in 2008. Among its clauses are the following:

2. RECOGNIZING the vital role that many wetlands and their ecosystem services play in supporting people's food security, livelihoods and human well-being, including through *inter alia* provision of food, fiber and other products, water for sanitation, drinking, irrigation and other purposes, and other services such as flood and storm surge protection; but CONCERNED that the continuing loss and degradation of wetlands (...) is placing the continued provision of such services, and hence people's health, livelihoods and well-being, at further risk;
4. RECALLING that in Resolution IX.14 (2005) on *Wetlands and poverty reduction* the Contracting Parties provided an overarching framework for Parties to address issues of poverty eradication in relation to wetland conservation and wise use (...);
10. URGES Contracting Parties, in relation to the framework of actions set out in Resolution IX.14, also to:
 - i) continue to seek to integrate wetland wise use and management, including wetland restoration as appropriate, into all relevant national and regional policies, including in Poverty Reduction Strategies, National Climate Change Strategies (NAPAs), grant transferral programmes, and water and sanitation plans and strategies, taking into account the need to base such strategies on an understanding of specific wetlands' current and projected future productivity, particularly where such wetland services may change over time;
 - ii) recognize in their planning and land management policies and strategies the role of wetlands in sanitation and human health, particularly in relation to water-borne

and water-related diseases, as well as the increased risks to human health caused by degraded wetlands, as described in Resolution X.23 on *Wetlands and human health*;

- iii) respect and incorporate traditional knowledge and practices and local perspectives into national wetland management and sustainable livelihood initiatives, as appropriate, in order to ensure enhanced acceptance by local community groups;
- iv) ensure that any early warning systems and contingency plans established to safeguard people against natural disasters such as cyclones, storm surges, droughts, floods, and tsunamis, include the use of wetland management and, as appropriate, restoration measures to protect against impacts of climate change, sea level rise, and saline intrusion, in implementation of Resolution VIII.35 (2002) on *The impact of natural disasters, particularly drought, on wetland ecosystems*;
- v) collaborate with relevant institutions in developing suitable ecotourism activities in wetlands in general, and especially in designated Ramsar Sites, in order to provide opportunities to reduce poverty, whilst also taking into consideration the possible negative impacts of such tourism on wetland integrity and on local cultures;
- vi) collate knowledge on best practices and promote its transfer for the wise use, extraction, processing and marketing of wetland products in order to reduce pressures on the natural resources in wetlands by adding value to enhance poverty eradication;
- vii) establish financial incentives or investments such as micro-credit schemes including revolving funds and seed funding, especially in partnership with the private sector, that improve wetland management and contribute to tangible poverty eradication in the short and medium term, with the aim of promoting self-sufficiency and equitable benefit sharing in the long term;
- viii) encourage the introduction of payments for ecosystem services as a means to raise funds for poverty eradication programmes, including through avoided deforestation and avoided wetland degradation, as well as through private sector partnerships for access and benefit sharing;
- ix) consider wetland services as economic goods so that their use may be included in tax-based economic mechanisms such as user pays, and so that these contribute to national poverty eradication programmes and investment in sustainable wetland management;
- x) recognize the importance of identifying existing marketing networks and ways to access these before introducing any new financial incentives or investments for income-generating activities that may contribute to poverty eradication in wetlands; and
- xi) take measures to safeguard peoples' livelihoods derived from wetlands in areas where mining and other extractive industries are taking place, or are likely to take place, including in the decommissioning phases of the extractive activities, in relation to the implementation of Resolution X.26 on *Wetlands and extractive industries*.

Human health

The overall theme of COP10 in 2008 was "Healthy wetlands, healthy people". An interim version of a major review document on the subject, coordinated by the Scientific and Technical Review Panel (STRP), was made available to the Parties as **COP10 DOC. 28: *Healthy wetlands, healthy people - a review of wetlands and human health interactions: Draft Executive Summary and Key Messages***. Selected extracts from this document follow below.

The increasing rate of human exploitation and modification of the environment has adversely affected the health of wetlands, many of which have been lost or degraded to an extent where they no longer provide the ecosystem services that previously supported human well-being and health. This situation has developed to the extent where failure to tackle the loss and degradation of wetland ecosystems could undermine progress toward achieving the Millennium Development Goals (MDGs).

[The] complexity [of the situation is] shown by the paradoxical situation in which wetlands support many disease vectors but also provide many valuable services to people (the link between safe drinking water and wetland ecosystem services is easily perceived).

Less obvious is the role that wetland-specific social determinants of health may play in the transmission of HIV/AIDS, but nevertheless it is clear that wetland communities burdened by HIV/AIDS, malaria, tuberculosis or a range of water-borne diseases will have less capacity to contribute to maintaining and benefiting from wetlands and their services. The bi-directional nature of the links between health and wetland systems must be considered at all times.

Least clear for non-health professionals may be specific links between wetland determinants and maternal/child health and the burden of childhood illness. These will be closely associated with institutional health determinants, i.e., the capacity of the health services to reach wetland-dependent local communities and the possibility of members of the wetland communities to have access to the health services.

People derive benefits from wetlands both individually and collectively, and directly and indirectly.

By incorporating ecosystem services within ecological character, the Convention has recognized human well-being as being inextricably associated with ecological character through the services that a wetland provides.

Ecological character and ecosystem services are subject to change through natural processes, gradual seasonal, successional or evolutionary changes, or more dramatic large-scale episodic events, and all these changes may or may not occur with human complicity. Such changes may themselves feed back to human health and well-being.

Numerous examples exist of the link between changes in ecological character and human health.

Ecosystem health is a conceptual approach that seeks to be explicit about human well-being and human health as a part of an ecosystem, not separate from it. It covers both an ecosystem approach to dealing with matters of human health, and using a metaphor of health for ecosystem assessment.

Adopting a 'healthy wetlands, healthy people' theme therefore has multiple and beneficial messages, allowing wetland ecosystem assessment to enhance our understanding of ecological character, embrace ecosystem services more fully, recognize the centrality of the link between wetlands and human well-being, and ensure a systems approach to wetland management.

Ecosystem services provided by wetlands form the basis of a range of human health and well-being benefits:

- Food security is one of the most significant contributions of wetlands to human health.
- Wetlands play an important role in ensuring water security and are fundamental to human health and well-being.
- Wetlands also provide products that form the basis of subsistence incomes for local communities
- Wetlands are one of the most productive sources of traditional medicines and new natural products.

- By reducing human vulnerability to disasters and extreme events, many wetlands provide “insurance” value through the formation of natural buffers.
- Wetlands through their spiritual, recreational, inspirational and educational values contribute to the psychological and social well-being of human communities.

The disruptions to a wetland ecosystem through human activity can diminish the capacity of the wetland to deliver any of a variety of ecosystems services that contribute to human health.

While wetlands can be associated with an increased incidence of globally significant and locally important infectious diseases (such as malaria and schistosomiasis), the removal of wetlands or alteration of their water regimes is not generally the only disease management option that should be considered.

There is a need to broaden the traditional perspectives of public health and their epidemiological approaches into one more closely aligned with the science of ecology, an area where wetland managers have a significant contribution to make.

Wetland managers need to acknowledge people’s awareness and perception of change as mediating variables when examining the effects of their decisions on local environmental quality.

The consequences for human health may persist or arise over the long term, so interventions must operate with all relevant temporal scales rather than just the short or medium term.

Since many of these matters operate at, or are driven by factors at, the global scale, the attention of wetland managers must also be focused beyond the local and regional scale.

Despite an important role of wetlands in providing ecosystem services that support human health and well-being, there is a significant danger that these will be overlooked or underconsidered in decision-making processes.

Application of economic valuation techniques have yielded useful economic estimates of the contribution of wetlands towards health objectives to guide sound decision-making.

Disruption and/or loss of wetland ecosystem functions impose huge economic costs.

Valuation of health and well-being outcomes of disrupted wetland ecosystem services has been under-researched, though theoretical frameworks are apparently well developed.

The development of sustainable incentive systems is an important opportunity for wetland managers and policy makers to promote the conservation and wise use of wetland ecosystem services and realize health and well-being outcomes.

Wetland management actions can result in positive or negative consequences for human health.

Wetland managers need to engage actively with the health sector at the local and national levels.

One valuable strategy to achieve cross-sectoral action may lie in using human disease burden data as a bio-indicator to help target and prioritise wetland remediation.

Many of the possible response options for addressing ecosystem change and human well-being lie primarily outside the direct control of the wetland sector, or even the health sector.

Wetland managers need to recognize that different approaches (involving different instruments and forms of engagement) are available to plan or implement the intervention.

Wetland managers need to be involved in building coping capacity in human communities, and to recognize that these responses will need to operate at local, national, or regional levels.

In the context of ecosystem management, interventions need to be designed at spatial and temporal scales appropriate to the ecosystem disruption and the health outcome of concern.

Where interventions or responses involve tradeoffs, it is important to understand the consequences of taking one path in preference to another.

Response options and specific interventions to address classes of health effects and health outcomes resulting from diminished ecosystem services, include: Institutional and governance reforms; Economics and incentives; Social and behavioural measures; Technological measures; and Knowledge and cognitive measures.

Managing wetland ecosystem services to improve human health will help achieve the Millennium Development Goals.

The COP then adopted **Resolution X.23, *Wetlands and human health and well-being***. Among its clauses are the following:

8. NOTING that much of the available information on the trends in interactions between human health and wetlands is derived from analyses of health and water inter-relationships, rather than on those between the wetland ecosystems themselves and human health, in particular the nature of ecological character and ecosystem services and the inter-relationships between ecosystem services, human well-being, and human health;
9. RECOGNIZING that in places wetlands provide habitat for vectors that can contribute significantly to the disease burden of local communities (e.g., malaria and schistosomiasis), that methods of environmental control (e.g., water management) can in some circumstances be the most appropriate approach to mitigation, and that development of human settlements and other developments in such areas need to be approached in a precautionary manner;
11. RECOGNIZING that the changing climate is expected to continue to increase the risk to human health of matters associated with wetland ecosystems, including changing distributions of vectors and pathogens and changes in water availability and increased variability and severity of weather events;
13. AWARE that for many human communities, hunger, malnutrition, and a lack of access to clean water are among the root causes of poor health and that health and well-being are in turn closely linked to people's livelihoods and to the basis for reducing poverty and vulnerability to poverty;
14. ALSO AWARE that poor health can have a severe impact on the capacity of communities to maintain systems of sustainable resource management and wise use of wetlands;
15. FURTHER AWARE that unsustainable wetland use may both increase the occurrence of many diseases and introduce others, while conversely, the sustainable management of wetlands, especially in a context of water supply and sanitation, can contribute to the reduction and eradication of water-related disease and to maintaining the health of people in general;
18. CONCERNED that wetland ecosystems continue to be degraded; that when they are disrupted by human activities, particularly by those activities that reduce water availability and water quality, their capacity to deliver ecosystem services is diminished; and that this has direct and indirect effects on human health, including through loss of food production, loss of livelihoods, the emergence of infectious diseases and disease epidemics, and the resurgence and spread of water-related diseases;
21. FURTHER CALLS UPON all those responsible for wetland management to address the causes of declining human health linked with wetlands by maintaining or enhancing existing

ecosystem services that can contribute to the prevention of such declines, and to ensure that any disease eradication measures in or around wetlands are undertaken in ways that do not unnecessarily jeopardise the maintenance of the ecological character of the wetlands and their ecosystem services, for example by reducing and more precisely targeting the use of pesticides;

23. ALSO URGES Contracting Parties and development sectors, including mining, other extractive industries, infrastructure development, water and sanitation, energy, agriculture, transport and others, to take all possible steps to avoid direct or indirect effects of their activities on wetlands that would impact negatively on those ecosystem services of wetlands that support human health and well-being.

Agriculture

Resolution VIII.34 on Agriculture, wetlands and water resource management was adopted by COP8 in 2002. Among its clauses are the following:

3. FURTHER RECOGNIZING that agriculture is also a major form of land use and that river valleys, floodplains, and coastal lowlands in particular have frequently been used for agriculture because of their natural suitability and the demands of agriculture for flat, fertile land and a ready supply of fresh water, and that therefore there is a high priority to ensuring that agricultural practices are compatible with wetland conservation objectives;
4. AWARE that wetlands can play important roles in relation to agriculture, such as abating the effects of storm and flood events, thus helping to protect both habitation and agricultural land, contributing to the replenishment of aquifers that are the source of water for irrigation, and constituting the habitat of wild relatives of cultivated crops and grasses;
7. CONSCIOUS on the one hand that drainage and intensive cultivation of such areas have led to widespread and continuing wetland loss, and on the other hand that sustainable agriculture supports some important wetland ecosystems;
12. CONVINCED that, in conformity with the Ramsar 'wise use' concept (as defined by the Conference of Parties), concerted efforts are required to achieve a mutually beneficial balance between agriculture and the conservation and sustainable use of wetlands, and to prevent or minimize the adverse effects from agricultural practices on the health of wetland ecosystems throughout the world (...);
19. CALLS UPON Contracting Parties to ensure that management plans for Ramsar Sites and other wetlands are developed within wider integrated catchment management approaches which duly acknowledge the need for appropriate implementation of agricultural practices and policies that are compatible with wetland conservation and sustainable use goals, and URGES Parties to identify and enhance positive incentives for the conservation and sustainable use of wetlands, including sustainable agricultural systems related to these wetlands;
21. URGES Contracting Parties, when reviewing their agricultural policies, to identify possible subsidies or incentives that may be having negative impacts on water resources in general and on wetlands in particular, in their territories and/or elsewhere in the world, consistent with their other international rights and obligations, and to remove or replace them by incentives that would contribute to wetland conservation;
22. INVITES Contracting Parties that have not yet done so to initiate intra- and inter-ministerial dialogues (...), with a view to enhancing integration of relevant policies related to the conservation of water resources, wetlands, and biodiversity.

Fisheries

Resolution IX.4 on *The Ramsar Convention and conservation, production and sustainable use of fisheries resources* was adopted by COP9 in 2005. Among its clauses are the following:

3. RECOGNIZING that fisheries resources are a vital source of food and income for millions of people, which can assist in the further reduction of poverty, and CONCERNED that the Millennium Ecosystem Assessment (MA) has reported that fisheries yields in many parts of the world are declining (...);
10. ALSO NOTING the widespread growth in aquaculture, its potential benefits for increasing fish resources and reducing environmental costs, and the need for careful planning and management to avoid negative impacts upon native aquatic species and wetland ecosystems;
14. RECOGNIZING that coral reefs are amongst the most complex, species-rich and productive of marine ecosystems, covering less than 1% of the ocean's area yet home to one-third of all marine fish species, that coral reef fisheries are estimated to yield 6 million metric tons of fish catch annually (...);
15. RECOGNIZING that several environmental benefits/services are provided by mangrove ecosystems including coastal protection, nutrients and sediments retention and carbon dioxide sink, their special relevance as nurseries of various aquatic species, and their protective role to the existing associated ecosystems such as coral reefs and sea grass beds, and HIGHLIGHTING the importance of mangrove ecosystems, including their associated tidal flats, and estuaries as a source of fisheries resources to several coastal communities;
23. URGES Contracting Parties to apply as appropriate the recommendations annexed to this Resolution when addressing issues of the sustainable use of fisheries resources in relation to the conservation and wise use of Ramsar Sites and other wetlands;
30. URGES Contracting Parties to take the necessary steps within their frameworks for integrated river basin and coastal zone management to maintain or reinstate aquatic biota migration pathways, to reduce the impacts of point source and diffuse pollution in all its forms, to establish and implement environmental flow allocations supporting the conservation of aquatic biota, to protect critical spawning and nursery grounds, and to restore relevant habitats where these have become degraded, taking into account the guidance adopted in Resolutions VIII.1 on water allocation, VIII.4 on Integrated Coastal Zone Management, and VIII.32 on mangrove ecosystems;
31. URGES Contracting Parties carefully to control aquaculture (e.g. pond and cage culture) practices in Ramsar Sites and in areas that are liable to impact on Ramsar Sites and other wetlands so as to prevent adverse changes to the ecological character of wetlands, applying the provisions of the 1997 FAO Code of Conduct and its associated Technical Guidelines for Responsible Fisheries - Aquaculture Development and the 2000 Bangkok Declaration and Strategy for Aquaculture Development (Network of Aquaculture Centres in Asia-Pacific (NACA)/FAO));
35. URGES each Contracting Party with coral reef, sea grass beds and other associated ecosystems in their territories to implement national programs for the protection of these ecosystems through the establishment of effective protected areas, monitoring programs, awareness programmes and cooperation for innovative coral reef, sea grass beds and associated ecosystem restoration projects;
36. ALSO URGES each Contracting Party to take necessary steps within their policies and national systems of protected areas for establishment and recognition of inland, coastal

and marine protected areas as a tool for biodiversity conservation and fisheries resources management.

The Annex to the Resolution sets out a series of “Issues and recommendations for Contracting Parties concerning the management of sustainable fisheries in Ramsar Sites and other wetlands”. Selected extracts from its text follow below.

Issue 1: Aquaculture

- Aquaculture (e.g. pond and cage culture) practices in Ramsar Sites or in areas that are liable to impact on Ramsar Sites should be carefully controlled.
- Sustainable aquaculture may be facilitated through the use of native species and genomes where possible, and the minimization of the use of chemicals and the prioritization of new sustainable technologies.

Issue 2: Rice cultivation

- The significance of fisheries in sustainable rice cultivation within Ramsar Sites should be further explored and documented and a more efficient combination of “rice-fish” management practices promoted.

Issue 3: Management of fisheries

- Participatory management in appropriate sites should be encouraged and facilitated by revising any existing laws and regulations that exclude it.
- Fisheries legislation and regulations should promote the participation of stakeholders in the formulation of policies for the management of the resource.
- Measures should be adopted to control the use of fisheries in Ramsar Sites and other wetlands.
- Measures should be put in place to minimize or prevent by-catch through the use of appropriate fishery techniques.
- Where ecologically damaging fishing practices or gear (which may include activities which significantly alter habitat structure, prevent movement of species, or otherwise alter ecological character), are affecting, or are likely to affect, a listed Ramsar wetland, appropriate action should be taken to address the threat of damage.

Issue 4: Management of the fisheries resources

- Stocking programmes should preferably use indigenous fish species or genomes.
- Adopt effective legal tools and programmes to prevent and minimise the introduction of alien and/or invasive species within wetlands.
- A code similar to the ICES Code of Practice on the Introductions and Transfers of Marine Organisms and the GEF/UNDP/IMO International Convention for the Control and Management of Ships’ Ballast Water and Sediments should be applied rigorously so that Ramsar Sites are not placed at risk through unplanned introductions of aquatic species.
- Reasonable practices should be adopted to reduce the risks from unregulated stocking programmes.

Issue 5: Sustainable management of wetland ecosystems for fisheries

- Environmental flow assessments in all rivers and associated wetlands that are threatened by flow-modifying activities such as the construction of dams, levee-ing of river channels, and water abstractions should include specific attention to fisheries resources and fisheries related aspects (see also Resolution VIII.1 and Resolution IX.1 Annex C).
- Strategies for the mitigation of negative impacts on the environment from the activities of other users of the aquatic resource should be formulated. Where such impacting uses

have ceased, the possibility of rehabilitation of damaged ecosystems should be explored (with reference to COP8 Resolution VIII.16).

- The establishment of formal conservation and harvest reserves within selected sites of importance to fisheries should be considered.

Issue 6: Conflicts and multi-purpose use

- Local, national and international mechanisms should be established, as appropriate, whereby allocation of essential resources for the protection of aquatic resources and specifically fisheries resources are negotiated among all users of the resource.

Issue 7: Increasing awareness of the importance of wetland management for fisheries

- Training programmes should be carried out under the Convention's programme on communication, education and public awareness (CEPA) to promote mutual understanding of the problems of the diverse sectors involved with wetland management and conservation including fisheries.
- Self-motivated initiatives such as community outreach, wildlife monitoring, codes of conduct, certification and education, and awareness-raising should be fostered within fishing communities

Issue 9: Applying existing international agreements

- The Code of Conduct for Responsible Fisheries (FAO, 1995) and its various Technical Guidelines should be taken as the guiding principles in regulating marine and freshwater fisheries and aquaculture.
- Management strategies for the conservation of fisheries and aquatic biota especially in relation to Ramsar Sites should take into account any endangered species listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Issue 10: The status of fisheries in Ramsar Sites

- National and regional programmes for the systematic collection of fisheries data at Ramsar Sites and associated areas should be initiated or reinforced.

Issue 11: Coverage of the Ramsar Site network for fish

- Additional Ramsar Sites should be designated (...) under Criteria 7 and/or 8, to complete the global network of sites of international importance for their fish populations.

Cultural values

Resolution VIII.19 on Guiding principles for taking into account the cultural values of wetlands for the effective management of sites was adopted by COP8 in 2002. Among its clauses are the following:

4. FURTHER RECOGNIZING that sustainable traditional uses of wetland resources have frequently created cultural landscapes of significant value to wetland conservation and wise use;
5. AWARE that the cultural values of wetlands have been and still are of great importance to societies living in wetlands and their surroundings, and constitute part of their identity; thus their loss may not only contribute to their alienation from wetlands, but also cause significant negative social and ecological impacts;

9. CONSCIOUS of the fact that the adequate recognition of and support for cultural heritage, both material and non-material, is an indispensable component in any process for the sustainable use of wetland resources;
19. FURTHER ENCOURAGES Contracting Parties, within their national and legal frameworks and available resources and capacity: (...)
 - c) to include relevant aspects of cultural heritage in both the design and implementation of wetland management plans;
 - d) to make efforts to integrate cultural and social impact criteria into environmental assessments.

The Annex to the Resolution stresses the strong link that exists between wetland conservation and benefits to people, and the fact that a positive correlation between conservation and the sustainable use of wetlands has been repeatedly demonstrated. It sets out a list of “Guiding principles for taking into account the cultural values of wetlands for the effective management of sites”, as follows:

1. To identify the cultural values and relevant associated partners.
2. To link the cultural aspects of wetlands with those of water.
3. To safeguard the wetland-related cultural landscapes.
4. To learn from traditional approaches.
5. To maintain traditional sustainable self-management practices.
6. To incorporate cultural aspects in educational and interpretive activities in wetlands.
7. To take into account culturally appropriate treatment of gender, age and social role issues.
8. To bridge the differences of approach between natural and social sciences.
9. To mobilise international cooperation in matter of culture issues related to wetlands.
10. To encourage research on palaeoenvironmental, palaeontological, anthropological and archaeological aspects of wetlands.
11. To safeguard wetland-related traditional production systems.
12. To protect historical structures in wetlands or closely associated with them.
13. To protect and preserve wetland-related artefacts (mobile material heritage).
14. To preserve collective water and land use management systems associated with wetlands.
15. To maintain traditional sustainable practices used in and around wetlands, and value the products resulting from these practices.
16. To safeguard wetland-related oral traditions.
17. To keep traditional knowledge alive.
18. To respect wetland-related religious and spiritual beliefs and mythological aspects in the efforts to conserve wetlands.
19. To use the arts to promote wetland conservation and interpretation.
20. To incorporate cultural aspects, where available, in the Ramsar Information Sheet (RIS) for the description of Wetlands of International Importance, whilst ensuring the protection of traditional rights and interests.
21. To incorporate the cultural aspects of wetlands in management planning.
22. To include cultural values in wetland monitoring processes.
23. To consider the use of institutional and legal instruments for conservation and protection of cultural values in wetlands.
24. To integrate cultural and social criteria into environmental impact assessments.
25. To improve wetland-related communication, education and public awareness (CEPA) in the matter of the cultural aspects of wetlands.

26. To consider the possibility of using quality labeling of sustainable traditional wetland products in a voluntary and non-discriminatory manner.
27. To encourage cross-sectoral cooperation.

Resolution IX.21 on *Taking into account the cultural values of wetlands* was then adopted by COP9 in 2005. Among its clauses are the following:

1. AWARE that wetlands and water resources in all parts of the world have been focal points for people and societies, providing vital services and being places where local communities and indigenous peoples have developed strong cultural connections and sustainable use practices;
4. RECALLING that the Ramsar Convention from its beginning has recognized the cultural values of wetlands in its Preamble, as well as recognizing that cultural actions may be determined by ecological processes and vice versa;
5. APPRECIATING that the wise use of wetlands, the foundation of the Ramsar Convention, requires taking seriously into account these cultural values as they may assist in strengthening or re-establishing the links between people and wetlands, and giving cultural values greater recognition within the Convention;
13. FURTHER ENCOURAGES Contracting Parties to incorporate cultural values in wetland policies and strategies, as well as in wetland management plans, and to communicate the results, thus contributing to the development of comprehensive and integrated approaches.

COP10 in 2008 saw the launch by the Ramsar Culture Working Group of Culture and wetlands: a Ramsar guidance document; which is available for download from the Convention website at http://www.ramsar.org/cda/ramsar/display/main/main.jsp?zn=ramsar&cp=1-63-412-416_4000_0__.

Invasive species

Resolution VIII.18 on *Invasive species and wetlands* was adopted by COP8 in 2002. Among its clauses are the following:

1. AWARE that alien species that become invasive continue to pose a major threat to the ecological character of wetlands worldwide, and to wetland species, and that such invasions can cause major social and economic damage and loss;
2. ALSO AWARE that it is predicted that the effects of global climate change will include invasion by alien species into new areas, and that species formerly regarded as benign may become invasive;
12. URGES Contracting Parties to address the problems posed by invasive species in wetland ecosystems in a decisive and holistic manner, making use, as appropriate, of the tools and guidance developed by various institutions and processes, including any relevant guidelines or guiding principles adopted under other conventions;
15. URGES Contracting Parties to undertake risk assessments of alien species which may pose a threat to the ecological character of wetlands, taking into account the potential changes to ecosystems from the effects of global climate change, and applying the guidance available in Ramsar's Risk Assessment Framework (Resolution VII.10);
18. (...) URGES all Contracting Parties with shared wetlands, river systems, and coastal/marine zones to cooperate fully in the prevention, early warning in transboundary wetlands, eradication and control of invasive species, applying the Guidelines for international cooperation under the Ramsar Convention (Ramsar Handbook [20]);

20. URGES Contracting Parties, prior to moving water between river basins, to examine carefully the potential environmental impacts due to invasive species.

Extractive industries

In light of growing concerns in 2007-2008 regarding the increasingly widespread impacts upon wetlands of mining and extractive industries, attention to this issue was given at COP10 in 2008. A background document was made available to the Parties as COP10 DOC. 24: *Wetlands and extractive industries: background information*. Selected extracts from this document follow below.

Interest initially centered on oil and gas exploration and exploitation, but it has become clear (...) that all sectors of the mining industry, including precious metals, base metals, industrial minerals and coal, are expected to continue on rapid growth paths, leading to increasing potential for impacts on wetland ecosystems.

The outcome of a decision-making process related to mining or extraction in or near a wetland should be consistent with the principle of wise use. That is, it should represent an acceptable balance between short- and long-term costs and benefits. This means that the decision-making process itself should be as well-informed as possible with credible, quantitative information. This will help to promote a balanced decision, one that clearly identifies the conditions under which mining may or may not proceed and the responsibilities and requirements for mitigation, minimization, or avoidance of negative environmental impacts at all phases of the project, including post-closure and handover.

Managing the impacts of mining/extraction activities on wetlands in the context of wise use requires that three factors be considered and addressed in an integrated way, viz:

- governance systems and their associated decision-making and regulatory processes for permitting and site management;
- corporate social responsibility (CSR) practices of members of the mining/extraction sector;
- the provision of relevant, credible data and information related to the wetland ecosystems likely to be affected by mining/extraction activities, as well the full range of ecosystem services and benefits provided by those ecosystems.

The paper addresses current and potential economic trends in the mining sector and the associated potential pressures on wetlands, [and] provides an overview of the economic drivers currently influencing the mining/extraction sector and an outline of the “mining cycle” from exploration through to closure. Understanding the broader economic drivers and the typical mining cycle provides better insights for the wetlands sector into how and where the likely pressures on wetlands will occur. Such understanding can then support the development of proactive responses from the wetlands sector, particularly in engaging with decision-making processes related to Environmental Impact Assessments (EIAs) and permitting of mining/extraction activities.

Section 3 addresses the kinds of scientific and technical information and guidance that might be helpful in supporting the proactive engagement of the wetlands sector in decision-making processes related to mining/extraction activities. In particular, the importance of identifying priority areas for inventory and baseline data collection is emphasized, in order to increase the lead time for the wetlands sector in responding to the greatly shortened timeframe for moving from exploration to production in the mining sector.

Key response areas for the wetlands sector:

- Provide information to ensure consideration of the full range of wetland ecosystem services in decision making
- Valuation of the full range of wetland ecosystem services must be incorporated into decision-making processes
- Catch up with economic drivers in mining sector
- Strengthen decision-making processes to address protection and wise use of wetlands in all phases of mining/extraction projects
- Strengthen national and transboundary governance systems
- Strengthen requirements for, and enforcement of, corporate social responsibility (CSR).

The COP then adopted **Resolution X.26, *Wetlands and extractive industries***. Among its clauses are the following:

6. ALSO AWARE that recent global and regional initiatives, including those by the United Nations Environment Programme (UNEP) and IUCN, to improve corporate social responsibility and governance in the extractive industries sector offer opportunities to strengthen the conservation and wise use of wetlands, while still realizing economic benefits from the development of extractive industries;
7. RECOGNIZING the value of Strategic Environmental Assessment (SEA) approaches in supporting decision-making that reflects the wise use of wetlands, in line with Resolution X.17 on Environmental Impact Assessment and Strategic Environmental Assessment: updated scientific and technical guidance (...);
14. URGES Contracting Parties to emphasize the importance of Strategic Environmental Assessment, particularly in relation to the extractive industries sector, and to apply the SEA guidance adopted in COP10 Resolution X.17 (...);
16. ENCOURAGES Contracting Parties to consider valuation at an early stage in environmental impact assessments (...), in order to ensure that the full range of ecosystem services is considered in cost-benefit analyses related to all relevant phases of extractive industrial activities, with particular attention to the potential costs associated with the post-closure phase of extractive industrial activities;
19. URGES Contracting Parties to, where necessary, review and revise regulatory and permitting procedures related to extractive industrial activities, in order to ensure that impacts on wetland ecosystems and their ecosystem services are avoided, remedied or mitigated as far as possible, and that any unavoidable impacts are sufficiently compensated for in accordance with any applicable national legislation (...);
25. ENCOURAGES Contracting Parties to engage with relevant private sector interests at international, national and local levels to establish and/or strengthen corporate social responsibility programmes related to extractive industries (...).

The STRP has been tasked with further work during the 2009-2012 period to “review available technical guidance on assessing, avoiding, minimizing and mitigating the direct and indirect impacts of extractive industries on wetlands in the exploration, development, operation, closure and post-closure phases, taking into account the potential for adoption of new or emerging extraction technologies and paying particular attention to restoration options, and on the basis of this review, to make recommendations regarding the suitability of available technical guidance and the need, if any, for development of new technical guidance”.

Urbanization

Resolution X.27 on Wetlands and urbanization was adopted by COP10 in 2008. Among its clauses are the following:

4. RECOGNIZING that wetlands in urban and peri-urban environments can deliver many important ecosystem services to people, such as wastewater treatment, and ALSO RECOGNIZING that urban green space is increasingly known to contribute to people's physical and mental health and well-being (...);
8. ALSO CONCERNED that the spread of urbanization is leading to wetlands, including Ramsar Sites, that were formerly in rural areas becoming increasingly urbanized, with consequent increased risk of their degradation through, for example, ecosystem fragmentation and exploitation;
14. ALSO URGES all Contracting Parties to review the state of their urban and peri-urban wetlands and, where needed, to put in place schemes for their restoration and rehabilitation so that they can deliver their full range of ecosystem services to people and biodiversity;
22. ENCOURAGES Contracting Parties to involve municipalities in their planning processes and operational actions on wetland conservation and wise use in order to seek contributions from municipalities, including their physical planning departments, a) to assess the direct and indirect environmental impacts of urban areas on wetlands and b) to preserve or increase ecological functionality of urban and peri-urban wetlands and protect them from the negative impacts of the increasing urban consumption of wetland products and ecosystem services.

The STRP has been tasked with further work during the 2009-2012 period to “prepare guidelines for managing urban and peri-urban wetlands, in accordance with an ecosystem approach, taking into account issues such as climate change, ecosystem services, food production, human health and livelihoods”.

Relevant Resolutions

Resolution IX.1

(adopted by the 9th meeting of the Conference of the Contracting Parties, Kampala, Uganda, 2005)

Additional scientific and technical guidance for implementing the Ramsar wise use concept

1. AWARE of the suite of technical and scientific guidelines and other materials prepared by the Scientific and Technical Review Panel (STRP) to support Contracting Parties in their implementation of wetland conservation and wise use;
2. NOTING that the 8th Meeting of the Conference of the Contracting Parties (COP8) instructed the STRP to prepare further advice and guidance for consideration by Contracting Parties at COP9 on topics including, *inter alia*, inventory and assessment, wise use, water resource management, Ramsar Site designation and management, and assessing the effectiveness of the implementation of the Convention;
3. THANKING the STRP for its work in preparing the advice and guidance annexed to this Resolution, as well as for the supporting technical reviews and reports being made available to Contracting Parties and others as *Ramsar Technical Reports*; and
4. ALSO THANKING the Government of Sweden and IUCN, WWF, the World Fish Centre, and the Water Research Commission (South Africa), which have provided financial support to the Panel and its Working Groups for the preparation of this advice and guidance and technical reports, and EXPRESSING GREAT APPRECIATION to the many organizations that have provided significant in-kind support to the work of the Panel;

THE CONFERENCE OF THE CONTRACTING PARTIES

5. APPROVES the *Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character* (Annex A to this Resolution) and its updated definitions of “wise use” and “ecological character”, and CONFIRMS that these supersede all previous definitions of these terms;
6. ALSO APPROVES the revised *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Annex B to this Resolution), INSTRUCTS the Ramsar Secretariat to introduce these changes in the preparation of a new edition of Ramsar Wise Use Handbook 7, including revisions to the Information Sheet on Ramsar Wetlands (RIS), and URGES all Contracting Parties preparing a RIS for the designation of a new site for the Ramsar List and for updating the RIS for an existing site to submit the information to the Ramsar Secretariat in this revised format;
7. WELCOMES the frameworks, guidelines and other advice provided as annexes C, D, and E to this Resolution and URGES Contracting Parties to make good use of them as appropriate, adapting them as necessary to suit national conditions and circumstances and within the frameworks of existing regional initiatives and commitments and in the context of sustainable development;
8. URGES Contracting Parties to draw these frameworks, guidelines and other advice to the attention of all relevant stakeholders, including *inter alia* government ministries, departments and agencies, water and basin management authorities, non-governmental organizations, and civil society; and FURTHER URGES Contracting Parties to encourage these stakeholders to take these guidelines into account, together with those of the Ramsar ‘Toolkit’ of Wise Use

Handbooks 2nd edition, in their decision-making and activities which relate to the delivery of the wise use of wetlands through the maintenance of their ecological character; and

9. INSTRUCTS the Ramsar Secretariat to disseminate widely the frameworks and guidelines annexed to this Resolution, including through amendment and updating of the Ramsar 'Toolkit' of Wise Use Handbooks.
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Resolution X.3

(adopted by the 10th meeting of the Conference of the Contracting Parties, Changwon, republic of Korea, 2008)

The Changwon Declaration on human well-being and wetlands

1. CONCERNED that as reported by the Millennium Ecosystem Assessment (MA) the many pressures from land use change and over-use of water, exacerbated by a warming and increasingly variable climate, mean that wetlands continue to be lost and degraded in many parts of the world and at rates faster than other ecosystems, and that this is jeopardising the future provision of their services and thus the foundation they provide for human well-being;
2. AWARE of the many efforts by Ramsar Contracting Parties and others at local, national and international levels to address this situation in recognition of the vital contribution of wetlands to human well-being, livelihoods and human health, as well as to biodiversity, that can be delivered through maintaining and restoring their ecological character, but RECOGNIZING that these efforts need to be redoubled if present declines are to be halted or reversed and if the 2010 biodiversity target and the 2015 Millennium Development Goals environment targets are to be achieved;
3. AWARE that the theme of this Conference is "Healthy wetlands, healthy people";
4. WELCOMING the message of the Secretary General of the United Nations, delivered to this Conference on 28 October 2008, and NOTING the emphasis in that message on the vital link between wetlands, livelihoods, and the well-being of people around the world, as well as the importance of the Ramsar Convention in providing the guidance and mechanisms for underpinning this vital link and the valuable contribution that wetland ecosystem services can make to achieving the Millennium Development Goals;
5. RECOGNIZING the urgent need for governments, international organizations, the private sector and civil society to understand more fully the roles they can and should play in securing the future health of wetlands and the maintenance of their ecological character, in relation to the global commitments made under the Ramsar Convention, and the need to develop more effective cross-sectoral action to secure this;
6. EMPHASISING the importance of collaboration and partnerships between governments and local communities for the conservation and wise use of wetlands, and HIGHLIGHTING the shared responsibility of both governments and local communities in the implementation of the Ramsar Convention;
7. INFORMED that the primary purpose of the "Changwon Declaration" is to transmit key messages concerning wetland-related issues to the many stakeholders and decision-makers beyond the Ramsar community who are relevant to the conservation and wise use of wetlands, to inform their actions and decision-making;

8. NOTING that the Declaration is designed to complement the Ramsar Strategic Plan 2009-2015, which provides the Convention and its bodies with their own future approach and priorities for implementation, and that a number of objectives in the Strategic Plan could be effectively progressed through implementation of the Changwon Declaration;
9. THANKING the government of the Republic of Korea for its initiative in preparing a “Changwon Declaration” to provide an overarching agenda for future action on wetlands for the people of the world, and for its support for the process of drafting this Declaration; and
10. RECOGNIZING that the “Changwon Declaration” has been prepared through a collaborative process drawing on the expertise of the Scientific and Technical Review Panel (STRP), the International Organization Partners (IOPs), the government of Korea as the COP10 host country, and the Ramsar Secretariat; and THANKING the government of Korea for its declared intention to champion the dissemination and uptake of this Declaration in future;

THE CONFERENCE OF THE CONTRACTING PARTIES

11. WELCOMES the “Changwon Declaration on human well-being and wetlands” annexed to this Resolution;
12. STRONGLY URGES Contracting Parties and other governments to bring the “Changwon Declaration” to the attention of their heads of state, parliaments, private sector, and civil society, and to encourage them and all government sectors (including *inter alia* water management, human health, climate change, poverty reduction, and spatial planning sectors) and agencies responsible for activities affecting wetlands, especially in order to respond to the call for action for wetlands embodied in the Declaration;
13. ALSO STRONGLY URGES Contracting Parties and other governments to utilise the “Changwon Declaration” to inform their national policies and decision-making, including in the positions of their national delegations to other external processes, and through specific opportunities at local, national and international levels where the Ramsar Convention and other processes have good potential for mutual assistance and collaboration, including *inter alia* the UN Commission on Sustainable Development, UN agencies, multilateral environmental agreements, and the World Water Forum, and REQUESTS the Secretariat to prepare advice on relevant action opportunities in support of this;
14. FURTHER STRONGLY URGES the Standing Committee, the STRP, the Ramsar Secretariat, CEPA National Focal Points, regional initiatives operating under the framework of the Convention, the International Organization Partners (IOPs) and others to utilise the “Changwon Declaration” in their future work and establishment of priorities, and also to use their own means and all other relevant opportunities actively to promote the Declaration;
15. ENCOURAGES other organizations, bodies, institutions, and initiatives whose activities are relevant to wetland conservation and wise use to promote to their constituencies the messages in the Changwon Declaration;
16. ENCOURAGES Contracting Parties and others to find the resources to translate the “Changwon Declaration” into local languages and to facilitate its dissemination and understanding as widely as possible;
17. INSTRUCTS the Ramsar Secretariat and Standing Committee to consider development and inclusion of indicators in the National Report Format for COP11, where feasible, concerning the dissemination and uptake of the “Changwon Declaration” and to report on this to Contracting Parties and others, noting that in some cases, indicators related to the Strategic Plan may also be relevant as indicators for the Changwon Declaration;

18. REQUESTS the Standing Committee, the STRP, CEPA National Focal Points, regional initiatives operating under the framework of the Convention, the International Organization Partners (IOPs), and other interested parties to advise the Secretariat on their experiences of the uptake of the Declaration in order to inform the 11th meeting of the Conference of the Contracting Parties; and
19. INSTRUCTS the Ramsar Secretariat to consolidate, as necessary, into this Resolution any text language adopted by this Conference of Parties, so as to achieve consistency of terminologies.



The current Chair and Vice Chair (right) of the Scientific and Technical Review Panel, with Secretariat staff, 2006.

The Ramsar Convention 'toolkit' for the conservation and wise use of wetlands, 4th ed. (2010)

Convention pillar 1: Wise Use

Handbook 1	Wise use of wetlands Concepts and approaches for the wise use of wetlands
Handbook 2	National Wetland Policies Developing and implementing National Wetland Policies
Handbook 3	Laws and institutions Reviewing laws and institutions to promote the conservation and wise use of wetlands
Handbook 4	Avian influenza and wetlands Guidance on control of and responses to highly pathogenic avian influenza
Handbook 5	Partnerships Key partnerships for implementation of the Ramsar Convention
Handbook 6	Wetland CEPA The Convention's Programme on communication, education, participation, and public awareness (CEPA) 2009-2015
Handbook 7	Participatory skills Establishing and strengthening local communities' and indigenous people's participation in the management of wetlands
Handbook 8	Water-related guidance An Integrated Framework for the Convention's water-related guidance
Handbook 9	River basin management Integrating wetland conservation and wise use into river basin management
Handbook 10	Water allocation and management Guidelines for the allocation and management of water for maintaining the ecological functions of wetlands
Handbook 11	Managing groundwater Managing groundwater to maintain wetland ecological character
Handbook 12	Coastal management Wetland issues in Integrated Coastal Zone Management
Handbook 13	Inventory, assessment, and monitoring An Integrated Framework for wetland inventory, assessment, and monitoring
Handbook 14	Data and information needs A Framework for Ramsar data and information needs
Handbook 15	Wetland inventory A Ramsar framework for wetland inventory and ecological character description
Handbook 16	Impact assessment Guidelines on biodiversity-inclusive environmental impact assessment and strategic environmental assessment
Convention pillar 2: Ramsar sites designation and management	
Handbook 17	Designating Ramsar Sites Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance
Handbook 18	Managing wetlands Frameworks for managing Ramsar Sites and other wetlands
Handbook 19	Addressing change in wetland ecological character
Convention pillar 3: International cooperation	
Handbook 20	International cooperation Guidelines and other support for international cooperation under the Ramsar Convention on Wetlands
Companion document	
Handbook 21	The Ramsar Convention Strategic Plan 2009-2015 Goals, strategies, and expectations for the Ramsar Convention's implementation for the period 2009 to 2015

Ramsar
Handbooks
4th edition

Handbook 1

Wise use of wetlands



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