Ramsar
Handbooks
4th edition

Handbook 7

Participatory skills

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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Cover photo: Local stakeholders meet with government officials and representatives of Ramsar and WWF, Niger, 2001 (WWF / Denis Landenbergue)

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

Handbook 7

Participatory skills

Establishing and strengthening local communities' and indigenous people's participation in the management 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 Ramsar Convention Secretariat gratefully acknowledges the work of Alex de Sherbinin in coordinating the development of the Resolution and annexed Guidelines presented to COP7, and in co-authoring the Resource Paper with Gordon Claridge, which provides more detailed guidance in establishing and strengthening participatory approaches in the management of wetlands. Working closely with a Steering Committee composed of representatives of the Ramsar Convention Secretariat, IUCN-International Union for Conservation of Nature, World Wide Fund for Nature, Caddo Lake Institute (USA), and Kushiro International Wetlands Centre (Japan), Mr de Sherbinin has capably guided the documents through three workshops and numerous re-drafts to produce the Annexed Guidelines, adopted at COP7 in May 1999, and the Resource Paper.

The Secretariat also acknowledges the financial contributions for this project from a number of agencies and partners. Early and significant contributors included Environment Australia; the Swiss Agency for Environment, Forests and Landscape; and the UK Department of Environment. Other major contributors include the Kushiro International Wetlands Centre (Japan), the National Fish and Wildlife Foundation (USA), the Terrene Institute (USA), and the U.S. Fish and Wildlife Service. Further contributions for technical workshops and the publication of this guide were made by the Aeon Foundation (Japan), Caddo Lake Institute (USA), Conservation Treaty Support Fund (USA), Ramsar Centre (Japan), Scottish Natural Heritage, WWF-International, and WWF-Japan. Special thanks is due to George Furness of the Conservation Treaty Support Fund, who provided significant fundraising assistance.

The authors of the Resource Paper wish to thank several individuals for their conceptual and analytical contributions at various stages in the preparation of these documents. With characteristic rigour, Grazia Borrini-Feyerabend, former Head of the IUCN Social Policy Group, put significant thought and effort into developing the project document and the case study guidelines, which were universally appreciated for their detail and specificity. Delmar Blasco and Bill Phillips, formerly with the Ramsar Secretariat, provided significant input to the guidelines at key stages in their development, as did the project Steering Committee members Biksham Gujja, Constance Hunt, Barbara Ornitz, Jean-Yves Pirot, Dwight Shellman, and Hisashi Shinso. Steering Committee member Larry Mason deserves special recognition for spearheading the project, chairing technical workshops, drafting the revised guidelines, and shepherding Resolution VII.8 and the annexed Guidelines through COP7.

Last but not least, the authors of the case studies, whose names and contact details appear in Appendix I, provided the "grounding" for this Handbook. Their detailed process descriptions, active participation in technical workshops, and comments on earlier drafts of the Resource Paper and the Guidelines have significantly shaped these documents throughout. This Handbook is dedicated to all those who are facilitating participatory processes for the management of wetlands and other natural resources around the world. May we continue to learn from your experiences.

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.

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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 (Participatory skills)

Goal 1 of the Strategic Plan 2009-2015, concerning wise use of wetlands, is "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 participation of the local indigenous and non-indigenous population and making use of traditional knowledge . . .", and the outcome sought from this is "The wise use of all wetlands being achieved in all Parties, including more participative management of wetlands".

Strategy 4.1 of the Plan, concerning communication, education, participation and awareness (see also Handbook 6, Wetland CEPA) includes Key Result Area 4.1.iii (to be achieved by 2015), as follows: "All Parties to have established practices that ensure the participation in the development and implementation of wetland management plans of stakeholder groups with cultural or economic links to wetlands or those communities that depend on the wetlands for their livelihoods".

The text in this Handbook is drawn mainly from the Annexes to Resolution VII.8 and VIII.36, and the substance of it thus reflects formal decisions adopted by the Conference of Contracting Parties. The Handbook also brings together 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 Parties.

Foreword

Recommendation 6.3 of the 6th Conference of the Contracting Parties to the Convention on Wetlands (Brisbane, Australia, 1996) called upon the Parties to "make specific efforts to encourage active and informed participation of local and indigenous people" at Ramsar-listed (Wetlands of International Importance) and other wetlands. The Secretariat was instructed, in consultation with the Caddo Lake Institute, IUCN-The World Conservation Union, Kushiro International Wetlands Centre, and the World Wide Fund for Nature, "to produce an evaluation of the benefits derived . . . from conservation and wise use along with criteria and guidance for involving local and indigenous people in the management of wetlands" for the next Conference of the Contracting Parties. The resulting *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands*, adopted as Resolution VII.8 by the 7th Conference of the Contracting Parties (San José, Costa Rica, May 1999), and the associated Resource Paper are the culmination of a highly collaborative effort involving the above organizations and over 200 experts in participatory wetland management around the world.

This Handbook incorporates the Resolution and annexed Guidelines as well as the Resource Paper. It is intended to provide an easily accessible reference text on the implementation of participatory approaches in the context of wetland management. While it is primarily intended for Ramsar Contracting Parties, and particularly those government ministries or agencies charged with wetland management, it will also be of value to anyone interested in establishing or strengthening local and indigenous people's participation in wetland management. The Guidelines in Section I provide a summary overview of the major lessons learned from participatory management experiences around the world and the various steps in developing and implementing participatory approaches. The Resource Paper in Section III covers the same subject matter in greater depth. Both sections make full use of selected case studies on successful local involvement.

Readers should be aware that new experiences in participatory wetland management are being documented regularly. The wealth of material, together with the breadth of participatory management experiences, makes it impossible to provide a definitive text on this subject. Rather, this should be seen as a work in progress.

Acronyms

COP3	3rd meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Regina, Canada, 1987
COP6	6th meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Brisbane, Australia, 1996
COP7	7th meeting of the Conference of the Contracting Parties to the Convention on Wetlands, San José, Costa Rica, 1999
[COP8	8th meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Valencia, Spain, 2002
COP9	9th meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Kampala. Uganda, 2005
COP10	10th meeting of the Conference of the Contracting Parties to the Convention on Wetlands, Changwon, Republic of Korea, 2008]
FAO	Food and Agricultural Organisation of the United Nations
IKS	Indigenous Knowledge Systems
IUCN	International Union for Conservation of Nature
LEK	Local Environmental Knowledge
NGO	Non-Governmental Organization
SPG	IUCN Social Policy Group
WWF	World Wide Fund for Nature

Terminology

Involvement of local and indigenous people in resource management falls within the general resource management approach known as *participatory management.* Terms such as collaborative, joint, community-based or co-management are more or less synonymous. In the context of this handbook, *stakeholders* are taken to be bearers of separate interests and/or contributions for the management of a wetland, with a particular focus on *interest groups* within local and indigenous communities. By the same token, the government agencies responsible for wetland management and local authorities may also be considered as stakeholders.

The term *community* as used in this Handbook can be understood at two levels. On the one level it represents a more or less homogenous group that is most often defined by geographical location (e.g., a village), but possibly by ethnicity. At this level, the community may have very distinct interests compared with other major stakeholders (e.g., government agencies, businesses and NGOs). On another level, it represents a *collection* of different interest groups such as women and men, young and old, fisherfolk and farmers, wealthy and poor people, and different ethnic groups. Even in relatively unified communities, it is likely that these sub-groups have different interests and perspectives that need to be taken into account in the participatory management process.

For reasons of brevity and style, the reference to *local communities' and indigenous people's involvement in wetland management* has at times been shortened to *local involvement* or *community involvement*. Furthermore, indigenous people may have been the sole managers of wetlands for many centuries, so in these contexts it is more appropriate to speak of *acknowledging and strengthening* their management role than *involvement per se.* Finally, please note that *local* is a relative term; some stakeholders may live at a distance from the wetland (such as migrating fisherfolk or pastoralists) and still have traditional claims to its resources.

Section I

Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands

(adopted as the Annex to Resolution VII.8 by the 7th Conference of the Contracting Parties, San José, Costa Rica, May 1999)

Relevant implementation commitments made by Contracting Parties in COP Resolutions

Resolution VII.8: Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands

4. […] AWARE that in many contexts indigenous people and local communities are already involved in managing and using wetlands sustainably, and have long-standing rights, ancestral values, and traditional knowledge and institutions associated with their use of wetlands;

7. NOTING that […] involving local stakeholders can accelerate the move towards achieving the Ramsar goal of wise use of wetlands in accordance with Article 3.1 of the Convention […];

THE CONFERENCE OF THE CONTRACTING PARTIES

13. […] CALLS UPON Contracting Parties, when applying the Guidelines annexed to this Resolution, to give priority and special attention to involving women, youth and their representative organizations wherever and whenever possible;

14. URGES Contracting Parties to include extensive consultation with local communities and indigenous people in the formulation of national wetland policies and legislation and to ensure that these instruments, when introduced, include mechanisms consistent with the Annex to this Resolution, for actively engaging and involving the general community with implementation;

15. FURTHER URGES the Contracting Parties to create, as appropriate, the legal and policy context to facilitate indigenous people's and local communities' direct involvement in national and local decision-making for the sustainable use of wetlands, […];

17. ENCOURAGES Contracting Parties to provide for transparency in decision-making with respect to wetlands and their conservation and ensure that there is full sharing with the stakeholders of technical and other information related to the selection of Ramsar sites and management of all wetlands, with guarantees of their full participation in the process;

18. FURTHER ENCOURAGES Contracting Parties, technical experts, and local and indigenous people to work together in the planning and management of wetlands to ensure that the best available science and local knowledge are taken into consideration in making decisions;

20. INVITES Contracting Parties to seek, as appropriate, the involvement and assistance of indigenous people's and community-based groups, wetland education centres and non-governmental organizations with the necessary expertise to facilitate the establishment of participatory approaches;

21. REQUESTS Contracting Parties to recognize that in many cases financial mechanisms and incentives provide a catalyst for fostering participatory processes and should therefore gain priority consideration in efforts to promote the involvement of local communities and indigenous people.

I. Introduction

1. Community involvement and participation in management decision-making for sites included in the List of Wetlands of International Importance (Ramsar sites) and other wetlands have been recognized as essential throughout the history of the Ramsar Convention, but [for a long time] very little guidance on this topic [was] available to the Contracting Parties. In recognition of this, Recommendation 6.3 of Ramsar COP6 (1996) called upon the Contracting Parties "to make specific efforts to encourage active and informed participation of local and indigenous people at Ramsar listed sites and other wetlands and their catchments, and their direct involvement, through appropriate mechanisms, in wetland management", and assigned the Bureau of the Convention (Secretariat), working with IUCN-The World Conservation Union, the World Wide Fund for Nature, Caddo Lake Institute (USA) and Kushiro International Wetlands Center (Japan), the task of commissioning case studies and developing guidelines to assist the Contracting Parties in such efforts.

See also Handbook 1, Wise use of wetlands

2. These guidelines were conceived with the premise that local and indigenous people's involvement in wetland management can substantially contribute to effective management practices that further Ramsar's wise use objectives. As defined by Ramsar COP[9 (2005) in Resolution IX.1 Annex A, wise use of wetlands is "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development"]. Evidence from the 23 commissioned case studies and other experiences in participatory management indicates that local and indigenous people's involvement can, if carried out within the full framework of actions encouraged by the Convention, contribute significantly to maintaining or restoring the ecological integrity of wetlands, as well as contributing to community well-being and more equitable access to resources. In practical terms, the Ramsar Convention concept of "wise use" is equivalent to "sustainable use".

3. These guidelines are intended to assist Contracting Parties in involving local and indigenous people in wetland management in a manner that furthers the wise use objectives of the Convention.

4. Experience has shown that it is advisable to involve local and indigenous people in a management partnership when:

   a. the active commitment and collaboration of stakeholders are essential for the management of a wetland (e.g., when the wetland is inhabited or privately owned);

   b. access to the natural resources within the wetland is essential for local livelihood, security and cultural heritage; and

   c. local and indigenous people express a strong interest in being involved in management.

5. The case for local and indigenous people's involvement is even stronger when:

   a. local stakeholders have historically enjoyed customary/legal rights over the wetland;

b. local interests are strongly affected by the way in which the wetland is managed;

c. decisions to be taken are complex or controversial (e.g., different values need to be harmonised or there is disagreement on the ownership status of the land or natural resources);

d. the existing management regime has failed to produce wise use;

e. stakeholders are ready to collaborate and request to do so; and

f. there is sufficient time to negotiate among stakeholders in advance of management decisions being made.

6. It is not possible to provide a definitive list of criteria that will guarantee successful establishment of local and indigenous people's involvement. The breadth of the term "involvement" (from consultation to devolution of management authority) and the variety of local contexts means that there are few if any prerequisites to establishing participatory management. One consistent factor, however, is the possession of beliefs and values that support the Ramsar concept of "sustainable utilization".

7. Involvement of local and indigenous people in resource management falls within the general resource management approach known as *participatory management*. Terms such as collaborative management, co-management, or joint management are more or less synonymous.

8. In the context of these guidelines, *stakeholders* are taken to be bearers of separate interests and/or contributions for the management of a wetland, with a particular focus on interest groups within local and indigenous communities and the government agencies responsible for wetland management.

9. Note that the reference to "local communities and indigenous people" has been shortened to "local and indigenous people." Also, the term "indigenous people" may vary from country to country. Furthermore, "local" is a relative term; some stakeholders may live at a distance from the wetland (such as migrating fisherfolk or pastoralists) and still have traditional claims to its resources.

II. Summary of lessons learned from participatory management case studies

Refer to Section III, Chapter 2.1 for more detailed information

10. **Incentives for local and indigenous people's involvement and wise use are essential: everyone must benefit in the long term**

a. Local and indigenous people benefit from participatory management arrangements through the maintenance of sustainable livelihoods, including activities such as:

i. fishing and hunting;
ii. farming and haying;
iii. reed harvesting and collection of forest products;
iv. salt extraction;
v. recreational uses and ecotourism ; and

Note to 4th edition of this Handbook

Participation - the new "P" in "CEPA"

The Ramsar Convention has had a concerted programme on Communication, Education and Public Awareness (CEPA) since 1999. The first programme was referred to as the "Outreach Programme" (see Resolution VII.9), later re-named the "CEPA Programme" on being re-cast for the 2003-2008 period (Resolution VIII.31). The Ramsar Standing Committee at its 36th meeting (Gland, Switzerland, 25-29 February 2008), was introduced to the concept of expanding the scope of CEPA to encompass "participation", in part to signify a greater emphasis in the Programme towards practitioners and implementers.

The Programme for 2009-2015, adopted by COP10 in 2008 as the Annex to Resolution X.8, duly kept the acronym "CEPA" but substituted the word "participation" for the word "public" - "CEPA" is now therefore interpreted as "Communication, Education, Participation and Awareness"; and relevant Convention documents have been amended accordingly.

The CEPA Programme now includes, in its Appendix 1, an interpretation of "participation" as "the active involvement of 'stakeholders' in the common development, implementation and evaluation of strategies and actions for the wise use of wetlands". It acknowledges that levels and kinds of participation can be highly variable, depending upon both the specific context and the decisions of the individuals and institutions leading the process. An indicative list of the range of possible levels and kinds of participation is given, comprising:

1. Manipulative participation
2. Passive participation
3. Participation by consultation
4. Participation for material incentives
5. Functional participation
6. Interactive participation
7. Self-mobilization

(For comments on each of these, see the CEPA Programme itself).

The CEPA area of the Convention's website, www.ramsar.org/CEPA-Programme/, contains a range of relevant resources, including a downloadable *Guide to Participatory Action Planning and Techniques for Facilitating Groups*.

For more information see Handbook 6, Wetland CEPA.

vi. water for domestic consumption.

b. Other benefits of participatory management for local and indigenous people include:

i. maintaining spiritual and cultural values associated with a wetland;
ii. more equitable access to wetland resources;
iii. increased local capacity and empowerment;
iv. reduced conflicts among stakeholders; and
v. maintaining ecosystem functions (e.g., flood control, improved water quality, etc.).

c. Government agencies benefit from participatory management arrangements through:

   i. improved ecosystem viability;
   ii. reduced management costs;
   iii. assistance with monitoring and surveillance;
   iv. fewer infringements; and
   v. enhanced social sustainability and quality of life for communities dependent on wetlands.

d. Incentives such as tax concessions, subsidies, conservation easements, special arrangements for licenses, increased market access, financial compensation schemes, increased infrastructure, and development activities can, if appropriately structured, further wise use objectives when directed to local and indigenous stakeholders.

11. **Trust among stakeholders is essential and must be developed**

Refer to Section III, Chapter 2.2 for more detailed information

a. Development of trust among stakeholders takes time, effort and attention. Elements that contribute to building trust include:

   i. a willingness to seek joint objectives cooperatively;
   ii. mutual effort;
   iii. mutual respect;
   iv. open and ongoing communication;
   v. clear and realistic expectations about process outcomes;
   vi. satisfactory and timely completion of agreed tasks;
   vii. following through on commitments; and
   viii. participation of all sectors of the community.

b. Participatory management works best when stakeholders' interests are openly stated.

c. Clearly stated terms of reference and objectives assist in the establishment of management partnerships.

d. Participatory management processes require strong facilitation that builds trust among stakeholders. Independent brokers with strong leadership skills are most effective (often this is a role for NGOs).

e. Appropriate legal or policy frameworks (such as the right to organize, legal recognition of NGOs, conservation easements, etc.) assist in the establishment of participatory management arrangements.

f. Forums, study groups, and workshops can be useful means to increase shared understanding of Ramsar principles and the value of resources being conserved or sustainably used.

12. **Flexibility is required**

Refer to Section III, Chapter 2.3 for more detailed information

a. There is no one level of local and indigenous people's involvement that fits all contexts.

b. There is no one approach or recipe that will make the process work in all contexts.

On incentives for local involvement…

Income from tourism

The costs and benefits of tourism, both in terms of environmental impact and the distribution of income from tourism-related activities, is an important issue in the context of local involvement. In the case of **Kampung Kuantan, Malaysia***, unique environmental conditions in these mangroves at the mouth of the Selangor River foster the reproduction of fireflies. Over the past 20 years the fireflies developed into a minor tourist attraction, and one local businessman and amateur ecologist was able to translate his love for the mangroves into a lucrative boating and tour operation. With time, however, tourism development – including new housing construction and motorboat rides – threatened the very firefly habitat upon which the industry was based. Stricter controls on tourism development were required in order to sustainably use this resource. The same situation is facing **Le Cesine, in eastern Italy***, where tourism development (primarily related to local beaches, but also to the wetland reserve) is a potential threat to ecosystem integrity.

The social costs and benefits of tourism need to be assessed. In the case of **Keoladeo National Park in Rajasthan, India***, several thousand Western tourists a year pass through the Park's gates, paying a modest 25 Rupee ($0.60) entry fee [as at 1999]. Local hostelries have benefited from the large influx of outsiders, but these benefits are not widely shared within the community. Other Park policies prohibiting the grazing of water buffalo in the Park had a detrimental effect on local incomes. By raising Park entry fees modestly, all costs of running the Park could be covered and some of the excess could be used to aid the local communities. In the case of **Djoudj National Park in Senegal***, local residents were given training and resources to revive traditional crafts production, and were provided with shop space in which to sell their wares. This served to increase local income from tourism, gaining important support for the Park.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

Wetland education and visitor centres, such as this at Lake Hornborga in Sweden, can boost local economies while providing a focal point for awareness-raising. *Photo: Torsten Larsson.*

c. For participatory management regimes to be successful, it may be necessary to meet basic development needs in the process of pursuing wise use objectives.

d. "Learning by doing" approach (i.e., ongoing assessment of process and outcomes) allows for re-orientation as needed.

13. **Knowledge exchange and capacity building are fundamental**

Refer to Section III, Chapter 2.4 for more detailed information

a. Government agencies often require capacity building in participatory management approaches, such as those specified below for stakeholders.

b. Stakeholders often require capacity building in:

   i. establishing and maintaining appropriate organizations;
   ii. effective relations with government agencies;
   iii. negotiating and contributing to decision-making;
   iv. technical aspects of wetland management and Ramsar's principles;
   v. monitoring of wetland ecology and identifying changes in ecological character;
   vi. evaluation of participatory processes; and
   vii elaboration and design of project proposals to obtain funding.

c. Local environmental knowledge can make a significant contribution to wetland management strategies, especially when blended with the best available science

d. Engaging local stakeholders in site monitoring and process evaluation makes a valuable and substantive contribution to achieving participatory conservation objectives.

e. A multidisciplinary approach utilizing biological and social science expertise is vital for establishing participatory management regimes.

f. Site monitoring can take advantage of a "marginal cost" approach: technical experts may be engaged, and established facilities (such as university laboratories) may be used at minimal cost.

g. Networking mechanisms such as regular meetings, newsletters, and radio programmes fulfil information exchange and educational purposes.

h. Basic Ramsar concepts, stewardship principles and ecological values can be conveyed through the educational curriculum of local schools.

See also Handbook 6, Wetland CEPA

i. Wetland Centres can:

   i. catalyse active and informed participation of local and indigenous people;
   ii. serve as demonstration sites for sustainable wetland management;
   iii. support formal, informal and non-formal educational programmes that involve a wide range of stakeholders;

On trust among stakeholders…

The need for written agreements

Different opinions exist on whether or not written agreements are necessary to "cement" either local involvement or government agreement to community involvement in wetland management. Written agreements may be most useful where private land owners, with a high degree of autonomy in making land-use decisions in relation to their property are to be involved in wetland management.

In many cases, and probably in the early stages of all participatory arrangements, agreements need to evolve in parallel with the general understanding of the situation. Therefore consideration must be given to whether or not setting out agreements in writing would make it difficult to revise them in line with changing understanding and changed conditions.

Nevertheless there are other situations in which written agreements are useful. For example, in the establishment of a participatory coastal resource management regime in the **Tanga District of Tanzania***, clearly defining roles and responsibilities in written agreements signed by all concerned parties has been shown to be an effective measure for ensuring that all parties have the same understanding of the arrangements for resource management. It also contributed to establishing trust among the stakeholders.

In some cases written agreements may not be appropriate, for example, if they are not a part of the local culture, or if the local people have a history of being deprived of their resources through treaties or similar documents. For example, among local communities around **Lake Tegano in the Solomon Islands***, written agreements and contracts are not part of their culture. To ensure long-term commitment to a programme it is considered more effective to arrange an annual meeting of stakeholder groups to reaffirm their support for the participatory management agreement.

Among the Beafada people of **Rio Grande de Buba, Guinea-Bissau***, long traditions of reciprocity and respect for commitments mean that local agreements to restrict fishing for barracuda are respected and enforced by local peoples, without a need for written agreements or new legislation.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

iv. help to bring local and indigenous people's concerns to the attention of decision-makers; and
v. provide information and advice on wetlands and their management.

14. **Continuity of resources and effort is important**

Refer to Section III, Chapter 2.5 for more detailed information

a. Establishing participatory management takes time.

b. As with any management regime, participatory management may never be fully self-financing.

c. Financing through donor and/or government channels is important for sustainability.

d. Appropriate legal and policy frameworks at national and local levels contribute to continuity.

e. High-level political support, ideally from a number of the appropriate Ministries, is important for maintaining government commitment to participatory management regimes.

III. Engaging local and indigenous people

Refer to Section III, Chapter 3 for more detailed information

15. **When involving local and indigenous people in the participatory process, those who facilitate or coordinate such efforts should**:

a. Ensure that all stakeholders understand the role of the facilitators/ coordinators.

b. Regularly verify that all stakeholders agree upon the basic objectives of the initiative.

c. Raise awareness of wetland conservation and sustainability issues. Involve local and indigenous people in preparing and running awareness-raising activities.

d. Ensure the involvement of influential individuals in the community and all sectors of the population, and especially the women and youth of the community.

e. Encourage stakeholder ownership of the process and participatory management arrangements, ensuring that no key participants are excluded.

f. Involve and strengthen local organizations and traditional structures that represent different stakeholders among local and indigenous people. Assist in the establishment of such organizations if they do not already exist.

g. Develop local capacity including organizational and negotiating skills, keeping of records and financial accounts, and conflict management, and provide (as necessary) the meeting place, telephone access, basic equipment, and transportation.

h. Ensure that persons acting as facilitators and coordinators are properly trained in participatory assessment and planning techniques and possess the necessary facilitation skills.

i. Work with public-sector stakeholders to build capacity for developing and administering participatory management processes.

j. Ensure that key parties have a clear understanding of each other's needs, responsibilities and limitations.

k. Ensure that local and indigenous people learn participatory assessment and planning techniques so that they can be applied to other community concerns.

l. Ensure that all commitments are met.

On knowledge exchange…

Indigenous Knowledge Systems (IKS)

After hundreds or thousands of years of living in a landscape, indigenous communities often have complex practices for the sustainable management of their land. These systems may appear very different to those of western science, yet indigenous approaches can complement and improve on scientific conservation management in ways that can be much more relevant to landholding communities. Indigenous land management practices are often well tested, can produce similar results to western approaches, can be cheap, and, through religious or spiritual sanctions, can sometimes be more effectively enforced (Clay 1988).

The **Tonda people of the southern savannas of Papua New Guinea** * and the **Maya of Quintana Roo, Mexico,*** have a number of resource management approaches that are important for biodiversity conservation. These provide the basis for a more informed management approach in their respective regions.

1. **Landscape zoning**: Among the Tonda, land is traditionally divided by vegetative and use characteristics into big bush, open bush country, open places or clear places, and seasonal swamps. Among the Maya, forests are divided in respect to the types of limestone soil, of which they recognize 10 major categories. Only the four best categories are used for slash and burn agriculture; all other forest categories are used to gather plants and timber and for game hunting, including seasonally flooded forests and grasslands. Permanent wetlands are used for fishing.

2. **Areas with entry restrictions**: Among the Tonda, certain areas are barred from entry to all or certain parts of the population. Major and minor storyplaces generally have strong restrictions on entry or use, including hunting. Origin places, where a clan or moiety is thought to have been created, are often closed to entry or may be entered only on permission of a custodian.

3. **Areas with activity restrictions**: Among the Tonda, the areas with entry restrictions also generally carry restrictions on the harvest of wild animals, cutting of forest, planting of gardens or the removal of certain plants. Other significant sites include old village sites and burial sites which carry restrictions on certain activities such as building and gardening. The Mayan zoning scheme is a gradient including settlements, slash and burn agriculture, timber extraction and forest management, hunting/fishing and plant gathering, and strict conservation. Some pristine tracts of forests are conserved as a home for the forest spirits.

4. **Periodic harvesting restrictions**: Among the Tonda, seasonal restrictions can be placed on the hunting of animals or the collection of plants. This may be to prevent overuse during stressed seasons or for ritualistic purposes.

5. **Species harvest restrictions**: Among the Tonda, certain species, such as crocodile or eagle, have totemic significance and may be barred from hunting, and size limits are traditionally placed on some wildlife or fish.

6. **Fire control**: Among both the Tonda and the Maya, fire is a widely used management tool. However, there are traditional controls on when and why they may be lit.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

m. Develop a site monitoring and process testing programme using local resources to check progress.

n. Ensure that tasks taken up by various stakeholders are within their capabilities.

o. Keep funding agencies aware of issues and progress of participatory management approaches.

p. Establish networks among communities involved in wetland management and encourage regular contact and sharing of experiences.

q. Support the application of traditional knowledge to wetland management including, where possible, the establishment of centres to conserve indigenous and traditional knowledge systems.

IV. Measuring local and indigenous people's involvement

16. The following list is a brief, non-exhaustive checklist of indicators that can assist to measure the extent of local and indigenous people's involvement. The sections below correlate with those in paragraphs 10-14 to assist cross-reference.

17. **Incentives**

a. Local and indigenous people have achieved an economic stake or other interest in the wise use of wetland resources.

On continuity of resources and effort…

Political support

In the **Mexican wetlands of coastal Sonora***, where the introduction of participatory management is being facilitated by a local NGO, participation is officially accepted as a valid approach to wetland management. The municipal government is committed to its implementation but participatory management is apparently perceived as operating in parallel with (and to some extent, in competition with) existing sectoral approaches to resource management. The concept is not yet recognized at high levels as being an integrative approach requiring involvement of, and changes to, all sectoral interests in the wetland.

In contrast, high level support by the then governor of Quintana Roo, Mexico, led to the establishment of the **Sian Ka'an Biosphere Reserve*** and a plan for sustainable forestry management for surrounding areas. Sustainable use of the region's resources may have been aided by the fact that there were fewer, and less well established, competing economic interests than in Sonora State.

In the **Danau Sentarum Wildlife Reserve in Indonesia**, the UK-funded project to introduce conservation management was obviously approved at very high levels. However, the apparent lack of official endorsement of the participatory approach, or recognition that significant changes would be necessary, resulted in a reluctance by regional officials to approve local people's enforcement of traditional management systems.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

b. The government agency has stated policies supporting participatory management.

c. Appropriate legal and financial incentives for participatory management are in place.

d. A more equitable sharing of benefits among stakeholders has resulted from the participatory management process.

e. Stakeholders have expressed satisfaction with their involvement in the process.

18. **Trust**

a. There is a clearly stated and widely known policy or legal document that makes a commitment to involving local and indigenous people.

b. All key stakeholders (particularly government) acknowledge participatory management as legitimate and desirable.

c. Local and indigenous people are now involved in making substantive decisions affecting the wetland resource use and management.

d. Local organizations to advance participatory management are respected within the community.

e. Representatives of the local and indigenous people are truly representative and accountable to them.

f. There are resource use and participation rules which are appropriate to the local situation.

g. A management agreement exists between stakeholders (oral or written, formal or informal).

h. The management agreement has clearly defined boundaries and membership.

i. The management agreement specifically defines stakeholders' functions, rights and responsibilities.

j. The management agreement has been approved by at least the resource-using stakeholders and key decision-making groups.

k. Parties to the agreement meet their commitments.

l. Non-compliance with approaches, rules, rights, and responsibilities outlined in the management agreement is deemed to be at an acceptable level.

m. Any system of graduated sanctions for infringement of rules has been agreed upon by all key parties.

n. There is evidence that resource management controls are being implemented.

On engaging local and indigenous people…

Information exchange among stakeholders

The **Australian Great Barrier Reef Marine Park Authority*** employs a number of different methods for promoting involvement of local people in the management of this World Heritage wetland. One of the most innovative has been the establishment of six Issue Discussion Groups whose local community group members are linked with each other and Authority staff to allow timely and informal involvement. Similar issue discussion groups have been set up in the **Coastal Firths in Scotland***.

The **Djoudj National Park in northern Senegal*** has annual stakeholder meetings in which important management issues are discussed among all stakeholders, including the National Park Directorate, IUCN, local communities, and researchers. Delegates from communities represent local concerns *vis-à-vis* the site management, and learn about implementation of the overall management plan. Regular informal meetings are held between the staff of the facilitating NGO (IUCN), the Park director, and local communities. An environmental education component is built into the local school curriculum, a newsletter entitled "Njagabar" (which means pelican in the Wolof dialect) is circulated to all communities, and a weekly radio programme is dedicated to wetland wildlife and habitat.

The Djoudj National Park, Senegal.
Photo: Pat Dugan.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

19. **Flexibility**

    a. There is the potential for collective modification of the rules relating to resource use by those affected.

    b. There are "nested" management units (different bodies at different levels).

    c. There is evidence that the local and indigenous people can influence the speed and direction of change in relation to the resources with which they are concerned.

    d. Facilitators/coordinators practice "learning by doing" and adaptive management.

20. **Knowledge exchange and capacity building**

    a. There is an awareness among stakeholders of new management approaches, rules, rights, and responsibilities.

    b. There is a two-way flow of information and communication between local and indigenous people and relevant government agencies.

On measuring involvement…

Process flexibility

In the establishment of the management plan for the **Blyth/Liverpool wetlands on aboriginal lands in northern Australia*** the need for flexibility was recognized at an early stage. No firm decision on the identity of stakeholders was made at the outset, and during a long period of dialogue a number of parties joined the process at different times. The facilitating agency commenced the process with no preconceived view on how it would proceed or how long it would take. When conflicts and misunderstandings arose, these required consultation, dialogue and the flexibility to make changes in direction when necessary.

At the **Pevensey Levels in Sussex County, England***, a study group meets regularly to determine water levels in the agricultural fields and ditches that provide important habitat for a wide range of bird species and a rare species of spider. This is adaptive management at its best, meeting various stakeholder needs by negotiating optimal water levels for different times of the year.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

c. Information reaches local and indigenous people in a timely and accurate manner, and in a form which is readily understandable.

d. Local and indigenous people participate in site monitoring and in evaluation of the participatory process.

e. There is evidence of respect by key government agencies for local human systems and local ecological knowledge.

f. Stakeholders are demonstrating necessary skills and empowerment (e.g., capacity to make decisions, monitoring skills, etc.).

g. Measurement methods, established by the stakeholders, demonstrate and quantify the degree to which local participation was intended to, and actually has improved or conserved the recognized "functions and values" of the wetland and its wise use.

21. **Continuity**

a. There are one or more organizational structures that facilitate local and indigenous people's involvement (e.g., a council, management body, women's group, etc.).

b. A random sample of local and indigenous people is able to identify the community's role in wetland management, and the individuals who are directly involved can accurately describe the objective of their involvement.

c. The government agency and its staff have a demonstrated commitment to participatory management, and can accurately describe the objective of local and indigenous people's involvement.

d. There is an appropriately long-term source of funding for ongoing participation and resource management.

e. Local and indigenous people have provided in-kind support (time, labour, traditional knowledge and expertise) to implement the participatory management agreement.

f. Conflict management mechanisms exist, and there is an appeals process in case of conflicts within the management partnership.

g. There is integration between local wetland management and management of the entire catchment.

V. Testing the participatory approach

22. Local participation in wetland management is a tool for advancing the Convention's objective to achieve wise use of all wetlands. Administrative Authorities of the Ramsar Convention, managers, and process facilitators and coordinators need to be aware of existing wise use guidance and need to continuously apply this guidance in the participatory management decision-making process. The decision-making process should, at each stage, consider the implications of actions in terms of the following Ramsar standards and principles:

    a. Ramsar's Wise Use concept [Conceptual Framework incorporated in Handbook 1 of the Ramsar Handbook Series];

    b. Ramsar's Management Planning Guidelines [incorporated in Handbook 18 of the Ramsar Handbook Series];

    c. Monitoring ecological character of the site (Article 3; Recommendation 5.2, and Resolution[s] VI.1, VII.10, [VIII.8, VIII.14 and X.16, and Ramsar Handbook 18]).

    d. Standards for managing for wise use:

        i. there is an increase or maintenance of species diversity, size of wetland area, and water quality;
        ii. resource use is sustainable;
        iii. the precautionary principle is being applied;
        iv. cost-benefit analyses consider wetland functional values;
        v. the participatory process takes a catchment perspective and decisions within that framework consider what is best for the wetland(s); and
        vi. degradation of wetlands has been replaced by efforts to restore and rehabilitate them.

Section II

Participatory Environmental Management (PEM) as a wetland management tool

(adopted as the Annex to Resolution VIII.36 by the 8th Conference of the Contracting Parties, Valencia, Spain, November 2002)

Relevant implementation commitments made by Contracting Parties in COP Resolutions

Resolution VIII.36: Participatory Environmental Management (PEM) as a tool for management and wise use of wetlands

THE CONFERENCE OF THE CONTRACTING PARTIES

15. RECOGNIZES Participatory Environmental Management (PEM) as a useful tool for achieving sustainability in the use and management of wetlands.

23. Resolution VIII.36 *Participatory Environmental Management (PEM) as a tool for management and wise use of wetlands* was adopted at COP8 in November 2002 as a tool to assist Parties in achieving sustainability in the use and management of wetlands. With its emphasis on participatory approaches to management as well as the need for effective communication with, and training of, the full range of wetland stakeholders, PEM demands a range of CEPA skills.

24. The annex to the Resolution is reproduced below in paragraphs 25-31 and offers guidance on the benefits of PEM as a wetland management tool as well as identifying some aspects to be taken into account in the preparation and application of PEM strategies.

Introduction

25. Participatory Environmental Management (PEM) is a tool that by including knowledge from many sources – traditional, scientific, technical and administrative, among others – permits an integrated approach to problems and priority activities. This makes the management of ecosystems, specifically wetlands, more efficient, effective and lasting in social, environmental and economic terms. Because it optimizes resources and makes management more effective, PEM is now considered to be a process that can contribute to overcoming poverty in many regions.

Benefits of PEM

26. Participatory Environmental Management:

    a) is a tool that can help reduce poverty and improve the quality of life;

    b) facilitates a coherent definition of the needs in accordance with the context and reality of the region;

c) by allowing incorporation of all actors (the public and private sectors, local communities, universities and others), strengthens and provides training for the structures of local organization;

d) identifies more efficient, effective and lasting solutions in economic, social and environmental terms, thus creating collateral benefits;

e) optimizes resources (technical, financial and cultural) available for environmental management strategies;

f) by incorporating knowledge from many sources and points of view (especially those directly related to the wetlands in question), facilitates the exchange of knowledge;

g) promotes capacities from the base up and the cultural appropriation of the territory;

h) by improving communication and exchange of information among actors, creates an environment of confidence;

i) can be used for settling environmental conflicts; and

j) promotes opportunities for participation in other areas.

27. It should be taken into account that PEM, as any process, requires time and adequate planning, both in terms of land use and in relation to the required economic resources.

28. However, there are external elements that if "used" adequately can strengthen PEM strategies, such as those related to the development or application of legal mechanisms of social participation in the management of natural areas.

29. Two aspects that can lead to positive short-term or medium-term results are: a) the signing, application and compliance with international agreements, namely the Convention on Wetlands (Ramsar), the Convention on Biological Diversity (CBD), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), among others; and b) the strengthening of transnational networks for the exchange of experiences, access and diffusion of information and improvement of local technical capacities in the taking of joint decisions and the management of resources.

30. Equally important long-term but tangible results may be obtained through: a) mechanisms for international environmental cooperation that include the requirement of a specific commitment to use PEM techniques in the development of environmental projects; b) incentives for social participation in management strategies for natural areas; and c) advice and technical assistance for development of PEM projects.

Some aspects to be taken into account in the preparation and application of PEM strategies

31. Some of the main aspects to be taken into account for preparation and application of PEM strategies or for strengthening existing PEM strategies:

a) education and environmental awareness at all levels;

b) training of all participants;

c) identification of the need to assign specific funds for activities aimed at strengthening PEM;

d) equitable access to information;

e) application of participatory mechanisms through identification of local or regional leaders; and

f) monitoring and participatory research on the socio-cultural context and integrated analysis for identification of priorities and possible lines of action, and for early detection of conflicts.

Outstanding experiences of Participatory Environmental Management in wetlands of the Americas

by the Foundation for Participatory Environmental Management (FUNGAP- Grupo Antigua)

Produced in response to both Resolution VIII.36 on Participatory Environmental Management and Resolution VII.8 on Participatory management, this publication is based upon a total of 41 experiences in participatory management in Spain and 12 countries in Latin America. All case studies were assessed according to a set of 23 criteria that considered the socio-economic, cultural, environmental, gender, organisational, institutional, sustainability and participatory strengths of the studies. Fifteen of these case studies were evaluated more thoroughly and seven were finally selected as the most outstanding PEM experiences and were considered in more detail by the study.

The authors concluded that, despite their heterogeneity, there were common features in the seven selected case studies that contributed to success. The most successful initiatives arose where it was recognised by all stakeholders that management is a shared responsibility, and where there was a clear interest in improving living conditions or in maintaining or restoring a threatened natural resource. It was also concluded that successful initiatives had long term objectives, recognising that participatory management is a process that requires a considerable time to integrate all stakeholders (including local communities) in the management and decision-making processes.

The publication usefully presents brief descriptions of some of the tools used in the case studies that were considered to have produced positive results, and it proposes some specific actions that will strengthen communities, organisations and institutions in promoting adequate conditions for applying the mechanisms for environmental management identified in environmental agreements.

This publication can be downloaded in Spanish from the FUNGAP web site here http://www.fungap.org/docs/libros/libro_fungap_01.pdf[, and a summary of the findings is available in English at http://www.ramsar.org/pdf/lib/hbk4-07pem_e.pdf.

Section III

Involving local communities and indigenous people in wetland management – a Resource Paper

By Alex de Sherbinin and Gordon Claridge

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[Note: the views expressed by the authors of this paper do not necessarily reflect the views of the Ramsar Convention Secretariat and have not been endorsed by the Conference of the Contracting Parties.]

Chapter 1. Introduction

1.1 Why local involvement is beneficial

Local and indigenous people's involvement in the management of wetlands is beneficial for two principal reasons. The first is that without it, the long-term sustainability of many wetland ecosystems would be in jeopardy. The second is that local and indigenous people benefit from the sustainable use of wetland resources for livelihoods, recreation, and socio-cultural or spiritual reasons. Although these are the most significant rationales for greater local involvement, there are many other management-related benefits that deserve consideration.

Experience has shown that management regimes that involve a variety of stakeholders – and especially local residents and indigenous communities – tend to be more sustainable than those which are developed in the absence of local involvement. By involving local and indigenous people in:

- identifying the problems;
- deciding upon the solutions;

- implementing management plans; and
- monitoring the effectiveness of agreed measures to address the problems and opportunities

it is possible to achieve enhanced sustainability of management activities. Some refer to this as "social sustainability", an inseparable component of the ecological sustainability of wetland resources.

Specifically, sustainability will be enhanced because of the following benefits of participation:

Acceptance of local responsibility

Local stakeholders become responsible and accountable for the sound management of the resource. The level of non-compliance, where communities look for ways to get around the restrictions placed on them by an outside body, begins to diminish and is replaced by an attitude of stewardship, partnership and cooperation. If one specific agency is in charge, that agency will see its burden shared and thereby lessened. If no specific body is in charge, the degradation of open-access lands due to lack of clarity on rights and responsibilities can also be avoided. The basic mechanism of joint-committees, in which different groups have to account for their actions, provides the means of applying pressure to comply with jointly agreed measures.

Community commitment

Local stakeholders become co-owners of the conservation process and thereby develop a sense of commitment and are more prepared to make a longer-term investment in sound resource management. By building a partnership with communities in which there is a commitment to implement decisions taken together, greater trust is developed between government agencies and stakeholders. If communities are likely to lose out because of the conservation measures, management mechanisms can provide compensation. Most importantly, alliances between government agencies and local stakeholders are generally effective at fending off resource exploitation from non-local interests, which often represent the main threat to conservation and sustainable use practices.

Utilisation of local knowledge and skills

Local knowledge and skills are made available to assist in the ongoing identification of problems and solutions. Often this information is difficult to access and special participatory processes are needed to bring it to the surface (see Chapter 3).

Effective monitoring

By involving local stakeholders in day-to-day management, the monitoring of natural resources becomes easier and more effective. Since local people live and work on or near the site, problems are more likely to be identified and mistakes corrected more quickly than if monitoring is carried out by professionals on a sporadic basis. For instance, local people can guard against detrimental activities such as illegal hunting and polluting discharges.

Enhanced environmental awareness in the community at large

See also Handbook 6, Wetland CEPA

Involving local stakeholders in the management and monitoring of their natural resources raises the consciousness of citizens concerning the value of wetlands, and the impact of human activities upon them. The knowledge and networks they acquire through their involvement can also increase their ability to identify and deal with future environmental *and* development problems in their region.

Community reassurance

Local stakeholders are less likely to feel threatened by the restrictions on future use of the resource if they, or their representatives, have been involved in determining these restrictions and the compromises they may involve. This is particularly important when the communities are reliant on the wetland resources for their own survival.

Reduction of enforcement expenditures

Over the long term, delegation of some management responsibilities to local communities can be less costly than traditional "protectionist" approaches. Local involvement also contributes to a reduction in enforcement expenditures because of voluntary compliance.

In general, participatory processes contribute to building a society in which local stakeholders take upon themselves a variety of social functions and responsibilities. However, it is important to recognize that involving local communities in management initiatives can also involve costs as well as benefits. Briefly, these may include the following:

Initial investments

Local involvement may require substantial initial investments – especially in terms of the time required for participatory appraisals, awareness raising and education (if necessary), negotiations, and trust-building – in order to get the process underway. For many government agencies, it also implies a different way of doing business which may require capacity building of staff.

Costs to the community

It is sometimes overlooked that communities may incur substantial costs by being involved in a management partnership. This includes the cost of travelling to and attending meetings, income foregone while participating in management tasks, and income foregone in curtailing activities that affect the wetland. At the very least, these costs need to be acknowledged. In the best case, they might be partially or fully covered by the relevant government agencies if the resources are available.

The balance of costs and benefits will vary from place to place, and depends on the level and scope of local involvement. Short consultations or "open meetings" with local communities in order to obtain input for management plans are not as costly, perhaps, as participatory appraisal and planning. Nor will the benefits necessarily be as great. In reality, the cost of implementing participatory management may sometimes appear to be high simply because there was no management in place before efforts to involve the community were initiated.

1.2 Evolution of "local involvement" in the Ramsar context

See also Handbook 1, Wise use of wetlands

Within the context of the Ramsar Convention, there has been recognition for well over a decade of the importance of community involvement and participation in management decision-making for Ramsar listed and other wetland sites. However, very little guidance on this topic [has been] available to the Contracting Parties. The antecedents to Resolution VII.8 (*Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands*) can be traced back to COP3 held in Regina, Canada (1987). At this meeting the benefits of wetlands for people – and not just wildlife – were first given special emphasis as a rationale for the protection of wetlands. Under the umbrella of "wise use," which was defined [at that time] as "the sustainable utilization of wetlands for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem", the Contracting Parties identified a major entry point for the involvement of communities in wetland management.

At the Montreux Conference of the Contracting Parties in 1990, this was further amplified in the Annex to Recommendation 4.10 (*Guidelines for the implementation of the wise use concept*). The recommendation includes provisions for "the establishment, implementation and, as necessary, periodic revision of management plans which involve local people and take account of their requirements". The emphasis was upon increasing the awareness of decision-makers and the public of the benefits and values of wetlands, training of appropriate staff in the implementation of wetland policies, and reviewing traditional techniques of wise use. In other words, local people were seen as a source of information and knowledge for the decision-makers and staff to manage the resource wisely.

Following the Montreux Meeting, the Wise Use project and working group were established to study experiences and provide examples of wise use of wetlands. The working group's conclusions were adopted in Resolution 5.6 at COP5 in Kushiro, Japan (1993). The working group suggested that the Contracting Parties "might establish procedures which guarantee that local communities are involved in the decision-making process related to wetland use, and provide local communities with sufficient knowledge of planned activities to ensure their meaningful participation in this decision-making process". Under a section on integrated management planning, it was also suggested that "a management authority charged with the implementation of the management process should be appointed; [and] strong cooperation and participation from governmental and non-governmental agencies, as well as from local people, needs to be achieved".

Thus, the evolution of the idea of local involvement in wetland management began with a recognition of the interests in, and traditional uses of, wetlands by local communities throughout the world. This developed further to recognizing the need to consult local people so that decision-makers and resource managers can take their interests into account. Finally, it became clear that local people need to be actively involved in the decision-making and management processes along with other interest groups.

1.3 The project in response to Ramsar Recommendation 6.3

Based on these important precedents, Recommendation 6.3 of COP6 (1996) called upon the Parties "to make specific efforts to encourage active and informed

participation of local and indigenous people at Ramsar listed sites and other wetlands and their catchments, and their direct involvement, through appropriate mechanisms, in wetland management". The Parties assigned the Bureau of the Convention (the Secretariat), working with IUCN-The World Conservation Union, the World Wide Fund for Nature, Caddo Lake Institute (USA) and Kushiro International Wetlands Centre (Japan), the task of developing guidelines to assist the Contracting Parties in such efforts. In response to this request, a project was set up by the IUCN Social Policy Group (SPG) in close coordination with a steering committee composed of representatives from the aforementioned organizations, plus the USA's NGO Ramsar Committee, which became actively involved in the process.

It was decided early on that the project should exemplify the same participatory and open process that the project principles sought to promote for wetland management. The project began in May 1997 when the first of three workshops was held as part of an information gathering and knowledge sharing process. This first workshop, in Alexandria, Virginia, USA, considered case studies from North America and the Neotropics region. At this same workshop the Steering Committee, through the Ramsar Convention Bureau and the networks of its respective participants, distributed an announcement to Contracting Parties and NGOs involved in wetland management soliciting further case study proposals. Out of 60 proposals received, the project Steering Committee selected 21 case studies covering the seven Ramsar regions, to which were added two case studies from a previous IUCN project on ecosystems management (see Appendix I). These case studies represent a balanced variety of wetland ecosystem types, conservation issues, and forms of local involvement. Table 1 summarises major participatory management issues addressed by the different case studies. In September 1997, the case study authors were sent detailed guidelines on topics to address in the case studies. SPG provided comments on first drafts, and authors submitted final drafts before the end of the year.

From the case study material, SPG synthesised the lessons learned and policy recommendations to produce a first draft of criteria and guidelines for local and indigenous people's involvement in wetland management. This draft was circulated to all the case study authors, the steering committee and wetland management experts in February 1998, and two further technical workshops were organized in order to discuss case study findings and review the draft guidelines, one at the Kushiro International Wetlands Centre, Hokkaido, Japan, in March 1998, and another at the American Wetlands Conference, Arlington, Virginia, USA, in April 1998. The technical discussions at these workshops, along with comments received from external reviewers, were incorporated into a subsequent draft of the guidelines, and a draft decision document was produced. These were distributed for a much wider review by indigenous people's organizations, practitioners of participatory natural resource management, and wetland experts.

The draft Resolution and Guidelines were endorsed by the 21st meeting of the Ramsar Standing Committee (October 1998), discussed in a technical session at COP7 in May 1999, and ultimately adopted by the Conference. This Resource Paper covers the same subject matter but in much greater depth, providing extensive resource material in the area of participatory management. The Resolution, Guidelines and this Resource Paper reflect the inputs of over 200 organizations and individuals around the world. (See also Box 1.)

Table 1 - Participatory wetland management issues and related case studies

1. Traditional knowledge systems/Local environmental knowledge

Australia – Blyth/Liverpool wetlands
Mauritania – Diawling National Park
Mexico – Sian Ka'an Biosphere Reserve
Papua New Guinea – Tonda Wildlife Management Area
Senegal – Djoudj National Park
Solomon Islands – Lake Tegano
Tanzania – Tanga Coast

2. Customary ownership

Australia – Blyth/Liverpool wetlands
Brazil – Bahia do Castelo
Malaysia – Kampung Kuantan
Mexico – Sian Ka'an Biosphere Reserve
Papua New Guinea – Tonda Wildlife Management Area
Peru – El Balsar de Huanchaco
Solomon Islands – Lake Tegano

3. Gender issues

Cameroon – Waza-Logone
Guinea-Bissau – Rio Grande de Buba
Mauritania – Diawling National Park

4. Tourism development/Management

India – Keoladeo National Park
Italy – Le Cesine
Japan – Yatsu Tidal Flat
Malaysia – Kampung Kuantan
Mexico – Sian Ka'an Biosphere Reserve
Papua New Guinea – Tonda Wildlife Management Area
Russia – Dubna "Homeland of the Cranes"

5. Major commercial stakeholder (agricultural/ fishing/mining/industrial)

Brazil – Bahia do Castelo
China – Yellow River Delta
Mexico – Coastal Wetlands of Sonora
Russia – Dubna "Homeland of the Cranes"
Scotland – The Firths
Tanzania – Tanga Coast

6. Research/Education

Australia – Blyth/Liverpool wetlands
England – Pevensey Levels
Mexico – Sian Ka'an Biosphere Reserve
Senegal – Djoudj National Park
Slovak Republic – Morava River Floodplains
USA – Caddo Lake

7. Ecosystem rehabilitation

Cameroon – Waza-Logone
Italy – Le Cesine
Japan – Yatsu Tidal Flat
Mauritania – Diawling National Park
Senegal – Djoudj National Park

8. Participatory wetland monitoring

Australia – Blyth/Liverpool wetlands
Canada – Grand Codroy Estuary
USA – Caddo Lake

Chapter 2. Lessons from community involvement

Sections 2.1-2.5 of this chapter examine the key lessons learned from research undertaken on community involvement in wetlands management. In a sense these lessons can be interpreted as *requirements*, because they describe some of the supporting conditions and practices that are necessary for participatory management. Examples from the commissioned case studies and other relevant research are used to illustrate specific issues.

2.1 Incentives

A key lesson from the case studies is that, in order for local involvement to be successful, all parties must gain something. Although the guidelines are primarily focused on the benefits to local communities, indigenous people, and government agencies, it is equally true that research institutions, the private sector, and other

Box 1

On involving local communities and indigenous people…

When should local people be involved?

One of the tasks assigned to the project in response to Ramsar Recommendation 6.3 was to develop *criteria* for when the involvement of local and indigenous people in wetland management was needed, and if it was needed, whether it was likely to be feasible, effective and sustainable. In the course of the technical workshops, however, it rapidly became apparent that there are simply no universally acceptable criteria for determining this. The difficulty stems in part from the breadth of the term "involvement", which ranges from consultations with local people to full delegation of management authority (Borrini-Feyerabend 1996), and from the fact that many conditions, if not already present, can be created.

Many of the factors that are supportive of local involvement are covered in Chapter 2 on lessons learned. In the course of the technical workshops, some participants felt that there needed to be a legal basis for local involvement. And yet, examples from other parts of the world demonstrated that participatory management could be implemented even without supporting legislation. Others felt that there needed to be a strong "conservation ethic" and stewardship values; i.e., a belief that resources were held in trust for others such as future generations. But even here, it was recognized that awareness-raising and educational activities could reinforce stewardship values where they are weak.

In the end, it was agreed to include a set of conditions in the guidelines which, if met, would indicate that it is advisable to involve local and indigenous people in a management partnership. These conditions include the following:

- the active commitment and collaboration of stakeholders are essential for the management of a wetland (e.g., when the wetland is inhabited or privately owned);
- access to the natural resources within the wetland is essential for local livelihood, security and cultural heritage;
- local stakeholders have historically enjoyed customary/legal rights over the wetland;
- local interests are strongly affected by the way in which the wetland is managed;
- decisions to be taken are complex or controversial;
- the existing management regime has failed to produce wise use;
- stakeholders are ready to collaborate and request to do so; and
- there is sufficient time to negotiate among stakeholders in advance of management decisions being made.

Local people should be involved in decision-making and management in situations where the needs and demands of communities may be compromised by threats to wetland areas; a coastal region in Iran. ***Photo: D.A. Scott.***

parties should be included in management planning, and feel that they benefit from any agreements that are reached.

The principal ways in which local and indigenous people benefit from wetlands include direct support to livelihood, contributions to quality of life, and ecosystem services. Livelihood benefits of wetlands are especially prevalent in developing or transitional countries, where local people depend on wetlands for fishing and hunting; collection of reeds or forest products; and farming, aquaculture and haying. The use of wetlands in these cases can be both for direct subsistence and, through market mechanisms, for cash income. In addition, there are other "cash" benefits of wetlands such as ecotourism opportunities and hunting operations, which generate revenues by attracting people from outside the area (see text on 'Income from tourism' on page 12).

Communities also benefit from effective wetland management through improved quality of life, such as recreational opportunities, aesthetic benefits, and maintenance of spiritual or cultural values associated with wetlands. Lastly, wetlands perform important ecosystem functions (flood control, water filtering, habitat for a wide variety of flora and fauna, etc.) that directly and indirectly benefit humankind. All of these factors provide important justifications for greater community involvement.

Other incentives for local involvement have less to do with the values and functions of wetlands *per se*, and more to do with the benefits to communities of engaging in participatory management and taking on more responsibility for the health of the ecosystem. If properly implemented, participatory management can lead to more equitable access to wetland resources, increased local capacity and empowerment, and reduced conflicts among stakeholders.

In some cases, the livelihood benefits to local people may be the only incentive necessary for them to take an active role in site management. In other cases, it may be necessary to provide additional incentives such as tax concessions, subsidies, conservation easements, privileged access to resources (compared with non-locals), increased market access, infrastructure and development activities, or outright payment (Box 2). Government agencies and international NGOs need to determine the appropriate level of incentives depending on the context. Experience in many developing countries suggests that if basic development needs are not met, establishing meaningful local involvement in wetland management is difficult.

Sometimes the incentives to government agencies or local authorities are overlooked. However, if there are insufficient incentives for the agencies responsible for wetland management to engage in participatory approaches, their successful implementation is far from guaranteed. Briefly, some benefits to government agencies and local authorities may include the following: improved ecosystem viability, reduced management costs (over the long term), assistance with monitoring and surveillance, fewer infringements, reduced conflict and enhanced social sustainability (see Chapter 1 for a longer description of these benefits).

By entering into a management partnership, a government agency necessarily gives up full control over a resource (even if in practice its control may have been limited by infringements, illegal poaching, etc.). This may not be easy for the agency or its staff, and facilitators of participatory management agreements need

Additional information

The Ramsar Convention and incentives

Through Resolutions VII.15 and VIII.23, the Ramsar Convention has recognized the need to encourage incentive measures to support the wise use of wetlands, and to address perverse incentives. In particular, actions for Contracting Parties and others on incentives include:

i. continuing to review existing legislation and practices in order to identify and remove perverse incentives such as taxes and subsidies, and to carry out participatory consultative processes to define clear and target-oriented incentive measures which address the underlying causes of wetland loss;

ii. developing supportive legal and policy frameworks for the design and implementation of incentive measures;

iii. ensuring that incentive measures are taken into consideration when applying the *Guidelines for developing and implementing National Wetland Policies* (Resolution VII.6, Handbook 2) and the *Guidelines for reviewing laws and institutions to promote the conservation and wise use of wetlands* (Resolution VII.7, Handbook 3);

iv. giving special consideration to the introduction of incentive measures designed to encourage the wise use of wetlands, and to identify and remove perverse incentives where they exist when implementing the *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands* (Resolution VII.8) (this Handbook);

v. sharing their experiences and lessons learned with respect to incentive measures and perverse incentives relating to wetlands, biodiversity conservation, and sustainable use of natural resources generally, through providing appropriate materials, case studies indicating lessons learned, guidelines, and sources of advice on incentive measures relevant to wetlands; and

vi. continuing to identify wetland-related elements of existing guidelines on incentive measures, so as to recognize important gaps where such guidance is failing to meet fully the needs of the Parties, and to investigate possible ways of filling such gaps.

See also Resolution VII.15 *Incentive measures to encourage the application of the wise use principle* and Resolution VIII.23 *Incentive measures as tools for achieving the wise use of wetlands*

to think through the kinds of incentives that exist or may need to be created in order to sustain the partnership. One incentive that should not be overlooked is the legal framework governing resource access and use. If agencies are mandated by parliament or the judicial system to involve communities, this can provide a strong incentive for agencies to develop the necessary capacity to carry out participatory management.

2.2 Trust

Participation in wetland management involves a number of different parties working closely with the common goal of sustainable resource management. At the present time, involvement in participatory processes is a new experience for most stakeholders, including government agencies and communities. As a result,

Box 2

On incentives…

Two examples of use of incentives

In the Inuvialuit Final Agreement for Co-Management of the **Western Arctic in Canada***, the Inuvialuit people are paid stipends for meetings they attend to develop management plans for the several parks and wildlife refuges that exist in their territory. This is in recognition of the fact that there are opportunity costs for local people to participate in workshops and meetings. In addition, a certain number of paid positions are reserved for Inuvialuit in any research activities that are undertaken in the territory, greatly increasing the interchange of traditional and scientific understanding on various topics of importance to wildlife management.

One approach that is being experimented with in the area surrounding **Waza National Park in northern Cameroon*** is conditional territorial exclusion, in which local residents and some traditional resource users (including herders and migrating fishermen) are granted preferential access to grazing lands and fishing holes in the Park and its buffer zone. Those without traditional ties to the area (either through residence or seasonal resource use) are excluded from participation in these agreements, and therefore from access to the resources. This arrangement provides an incentive for local residents to sustainably manage resources, and to prevent illicit use by outsiders.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

involvement requires changes in roles and expectations for all parties – changes that are often seen as being fraught with risk. For the process to be successful it needs to be implemented in an atmosphere of trust.

Development of trust among stakeholders takes time, effort and attention. Two key attributes of trust are benevolence and reciprocity. Essentially, these reflect a willingness to seek joint objectives cooperatively (rather than being solely motivated by individualistic concerns), and a willingness to put some effort into the maintenance of a beneficial arrangement with the expectation that other parties will put in a similar amount of effort (Moore 1995). Other ingredients of trust include: mutual respect; open and ongoing communication; clear and realistic expectations about process outcomes; and satisfactory and timely completion of agreed tasks and commitments. Note that trust is not just important between "the community" and government representatives, but among different interest groups *within* the local community. A community may have a variety of different interest groups – such as women and men who harvest reeds, collect salt, fish or herd cattle – and for each party there needs to be a willingness to work cooperatively for mutual gain, to compromise, and to put some effort into maintaining beneficial arrangements.

Participatory management is based on transparent dealings among all parties and democratic decision-making. It works best when stakeholders' interests are openly stated, when the roles of the parties involved are clearly spelled out, and the objectives of the exercise are understood by everyone. Government agency staff or project managers require a sense of receptivity, modesty, honesty and

Box 3

On trust…

Facilitation

In virtually every situation of significant involvement of local people in wetland management in developing countries, there has been some third party, usually an NGO or a project group, which facilitated the establishment of involvement. The facilitator has many important roles: facilitating participatory processes; providing expertise; and acting as a channel for funds and as an "honest broker" among different parties.

Even in developed countries the facilitation model has been recognized as increasing the likelihood of successful involvement. In Australia, with many years of experience in Landcare and more recently with Coastcare, facilitators are typically engaged at government expense to assist in the establishment of community activities. Sometimes the facilitation may be an unintentional role adopted by a "neutral" government agency such as a research institute.

It seems likely that involvement of local people will proceed more smoothly when there is a conscious decision to utilise the services of a facilitator with appropriate expertise in this area. All of the case studies commissioned for this project included a facilitation agency in some form.

A good example of the importance of external facilitation is **El Balsar in Peru**[*], an artificial coastal wetland that was established by the Moche-Chimú indigenous people over 1,500 years ago and used to this day for reed cultivation. Because their management system has such deep historical roots, the communities surrounding El Balsar never had a need for external facilitation until recently. However, with the advent of increased development and tourism activities near their wetland, they gladly participate as a key stakeholder on an externally facilitated committee that considers land-use policies and practices in the area. El Balsar is a good example of a traditional use of wetlands that has been maintained and even encouraged through government action and the collaboration of NGO partners.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

sensitivity so as not to raise expectations unduly. Key process steps for the early stages of establishing community involvement, such as using local languages, cultural sensitivity, etc., are outlined in Chapter 3.

In the early stages, facilitation is a crucial factor. Participatory management processes require strong facilitation that builds trust among stakeholders. The facilitators need to exercise leadership without overly influencing the process or outcomes – a difficult balance to strike (Box 3).

Appropriate legal or policy frameworks are important for building trust and assist greatly in the establishment of participatory management arrangements. Perhaps the most important factor is a recognition of the rights of access to wetland resources. If local people know that they, individually or collectively, have the legal right of access, then they will be more willing to put effort into managing the ecosystem and safeguarding their natural resources. The rights and claims of indigenous people to traditional resources or territories need to

be addressed forthrightly as part of a negotiation process. Other rights that are important to the establishment of participatory processes include the rights to organize, form NGOs, and freely choose local representatives. In the absence of any of these, participatory processes will have difficulty getting underway.

Mutual understanding and trust can be developed through forums, study groups, and workshops, though moderation is important. Too many meetings and workshops without concrete results can, over time, serve to reduce trust levels and incentives to participate.

It is important to recognize that trust among the parties to a participatory management arrangement is fragile and can only be maintained through continuous effort. Simple misunderstandings, such as arise from a failure to explain the significance of an action to other parties before carrying it out, can damage trust. Similarly, failure to keep commitments can undermine trust. This applies to such apparently minor details as holding meetings at agreed times and carrying out commitments made at those meetings. (See also Box 4.)

2.3 Flexibility

Participatory management implies a new way of doing business. Flexibility and adaptive management, as opposed to blueprint plans and top-down decision-making, are keys to success. There will not necessarily be one "right" approach or recipe that will lead to the desired goal, and the goal itself will depend upon the circumstances.

Examination of a very wide range of case studies of local involvement in wetland management reveals an equally wide range of approaches to establishing that involvement. Each situation is clearly tailored to the prevailing ecological and socio-economic situation, and particularly to the capabilities of the stakeholders (including both local communities and government agencies). The range of

Box 4

On trust …

Taking time to listen: understanding leads to trust

In the development of a participatory management approach to **Canada's Grand Codroy Estuary*** in Newfoundland, one of the crucial factors in promoting involvement was winning the trust of local people. The most effective approach seemed to be a non-judgemental assessment carried out by a field crew who spent an entire summer season in the local area. This select group, headed by a person with world-wide experience in conservation stewardship with the Canadian University Service Overseas, conducted a door-to-door contact programme, gathering local opinions and knowledge. This effort developed trust. The crew also spoke to the local school and community groups on the value of the wetlands and wildlife of the estuary. They offered to lead bird watching groups and took the time to listen to the experiences and observations of bird sightings among those amateur naturalists. A critical factor was a knowledge of local culture and traditions which was tested and proven every day in contacts with the people.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

different participatory mechanisms has been likened to a spectrum that includes (from most to least involvement):

- local community control of wetland areas;
- delegation of management responsibility from government to local community;
- sharing of wetland resource management responsibility between government and the local community;
- consultation with the local community on major issues and decisions;
- participation by the local community in physical management activities;
- review of management plans by the local community;
- advice from local experts to government managers; and
- participation through election of local officials.

While it may seem that local control is the most desirable situation, in fact experience and common sense suggest that there is no universally "right" level or mechanism for local involvement in wetland management. This conclusion has been reached in a number of studies of community involvement in resource management (e.g., Ostrom 1990; Claridge and O'Callaghan 1997). What is important is that the involvement is meaningful and appropriate to the capabilities and characteristics of the community concerned and to the administrative and ecological situations.

Often, the level of involvement will be greater in developing country contexts – where dependence on wetlands for livelihoods is greater – than in transitional or developed countries, but this is not always the case (Box 5). In developed countries the range of agencies with wetland management responsibilities can restrict local people's involvement. Statutory controls and sectoral mechanisms can tend to limit the involvement of local people even where there is a desire on the part of the government and local people for participatory management. Until now, most local community involvement in wetland management in developed countries has tended to be either at an advisory level or a practical level, such as monitoring or rehabilitation activities. However, a promising new array of stewardship tools has been developed that involves agreements with land owners to protect ecosystems on their properties (Box 12). Clearly, approaches to fostering local involvement in wetland management in developed countries need to take into account the different social and bureaucratic situations which are found there.

Because of the range of variables and risks inherent in the process of establishing local involvement in wetland management, it is important that those facilitating the process show a great deal of flexibility in their approach. The need for flexibility is particularly great in the common situation where the community has not been involved in the early stages of needs assessment and project design. In such cases it will generally be better to commence the process of establishing involvement with an open mind as to the techniques to be used and the time that it will take (see text on 'Process flexibility', page 21).

Because of the need for flexibility in the establishment of participatory management, funding support needs to be similarly flexible. Insistence by funding agencies on sticking to initial estimates of inputs and timetables will defeat the overall objective (Box 6). Similarly, funding agencies need to recognize the long-term nature of the process (see Section 2.5). Case studies clearly show that a lack of continuity of inputs is one of the greatest threats to the process of

Box 5

On flexibility…

Participatory management in different development contexts

Developing Countries

Among developing regions, full community control of wetlands is commonly found in Oceania, where customary ownership of natural resources is relatively common. In Asia, the extensive **Indonesian Danau Sentarum** wetland complex in West Kalimantan Province has a traditional wetland management system dividing the area into village territories. Within village territories, resource use is controlled by the community according to their own set of rules, including a system of land-use zonation. These controls are continually evolving in an attempt to meet emerging pressures. Government influence over resource use in the area is very limited, so that this situation is effectively very close to local community control over the wetland area (Harwell 1997).

Transitional Economies

In the case of the **Dubna wetlands of Russia*** and the **Morava River Floodplains of the Slovak Republic***, the movement toward participatory management is beginning with education and awareness-raising activities by local or national conservation NGOs. After years of central planning, environmental education provides the "door" through which greater citizen involvement is generated. Still, current economic difficulties and citizen apathy towards community affairs means that active involvement is only slowly taking root.

"If it's good for nature, then it's good for people." Information for the public near the Dubna wetlands. *Photo: L. Smirnova*

Developed Countries

Local communities in the vicinity of the **American Caddo Lake wetlands*** in the states of Texas and Louisiana are involved in wetland management through the participation of local academics and students in monitoring and research activities. The information gathered is channelled to decision-makers by the Caddo Lake Institute, a local NGO with four full-time staff. This represents an expert advisory structure that is somewhat unusual in that it utilises the human and technical resources of local educational institutions to carry out wetland surveys and monitoring.

There *are* instances of greater involvement in wetland management in the developed world. Small-scale fishermen in developed countries provide a common example, as do reed harvesters in Japanese wetlands. Sturgess (1996) describes a fairly complex fishery management arrangement developed and implemented by local estuary and lake fishermen in southeastern Australia. This "informal" system includes most of the elements of a fully fledged fishery management regime, but operates outside of, and is more effective than, the official management regime.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

Box 6

On flexibility…

Flexibility on the part of donors

The development of infrastructure in the **Diawling National Park in Mauritania*** provides a number of examples of the need for flexibility. During project implementation, local people pointed out that sluice gates were needed to allow fish migration. These had not been foreseen in project planning, but with the agreement of the funding agency the money provided for an embankment was diverted to this more important purpose. A sluice gate at another location, which had been included in the project planning, was found to be unnecessary and its construction would have destroyed a beautiful site. The funding agency agreed that it need not be built.

On another occasion, when the local population requested an expensive all-season road and a piped water supply for isolated coastal communities, another donor was located who was willing to fund this. The flexibility shown by the project managers and the funding agency not only improved the sustainability of the initiative but also demonstrated clearly to the local people that their knowledge and concerns were being taken seriously, and this increased their trust in the participatory management approach.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

establishing involvement. Even periods of a few months when project support is withdrawn, for whatever reason, can severely undermine the process of establishing community involvement and reduce community confidence in government commitment to the process.

Funding to support the participatory process and funding of associated development or income-generation activities – vital for the establishment of participatory management – need to be treated equally. The funding of these activities needs to be particularly flexible, since relevant priorities and opportunities only emerge as the process unfolds. The need for flexibility in establishing local involvement in wetland management is an important lesson for funding agencies.

2.4 Knowledge exchange and capacity building

One of the greatest advantages of participatory management is its potential to blend local environmental knowledge with scientific understanding for more effective wetland management. Local people, particularly if they are users of wetland resources, have the opportunity for continuous observation of their surroundings, and often have detailed knowledge of the local ecosystem.

Often this local environmental knowledge (LEK) has been built up over many generations, so that a good understanding is accumulated of the long-term cycles acting in the area and the long-term impacts of particular resource uses. Where wetland resource managers are receptive to LEK they can avoid costly mistakes and eliminate or reduce the need for extensive research programmes. In order to benefit from LEK, resource managers need to show respect for local knowledge and a willingness to involve local people in wetland management

Box 7

On knowledge exchange…

LEK in ecosystem rehabilitation

In the **Diawling National Park in Mauritania***, local ecological knowledge contributed to both the design of the wetland hydraulic system and its management. Different groups of fishermen pointed out the need for one sluicegate to allow fish migration and for another to allow shrimp migration, based on their detailed knowledge of the life histories of wetland fauna.

This case study also highlighted the need to be sensitive to gender differences in LEK. Whereas men proposed an early flooding of the wetland because they knew that *Tilapia* wrasses were ready to spawn as early as July, women insisted that *Sporobolus* and other grasses used for handicraft production needed rain before flooding to achieve optimal growth, suggesting a need to delay flooding of the wetland. As a compromise it was decided to simulate rainfall by initially flooding with a shallow layer of water to cover the crucial grasslands in the floodplain, with a delay of one month before full flooding.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

Local fisherman in Mauritania.
Photo: Jim Thorsell.

(see text on 'Indigenous Knowledge Systems', page 16). They also need to accept and interpret local ecological, taxonomic and other concepts which may be quite different to western scientific approaches.

Combining local knowledge systems with scientific ways of looking at wetland ecology and resource management in a participatory and non-judgemental manner is no small task and requires dedicated effort and an open mind. The process needs to be viewed as a legitimisation of LEK rather than exploitation of it for useful information. However, if the management is to be truly participatory there needs to be a two-way flow, with relevant scientific knowledge being translated into terms relevant to the indigenous knowledge system as well as *vice versa* (Box 7).

In addition to the knowledge exchange aspects of local involvement, there are often specific capacity building needs that arise. Government agency staff need to *understand* the participatory approach and to be *committed* to it as a key part of carrying out their responsibilities. Once this understanding and commitment exists, government staff also need to have the capability to carry out their roles within the participatory process. This frequently requires further training because of the new skills involved (Box 8). It is important that the range of government staff receiving training is not restricted to only those having day-to-day contact with the local community. Supervisors at district, regional and national level need to understand these issues, as do planners, magistrates, prosecutors, and police. It

Box 8

On knowledge exchange and capacity building...

Government capacity

In the **Tanga Coastal Zone in Tanzania***, collaborative management of coral reefs and fisheries could not get under way until training had been given to:

- extension workers in different agencies in communication and facilitation skills, animation approach, coastal ecology, coastal culture, and planning;
- supervisors of extension workers at District and Regional levels in coastal ecology, planning and analysing skills, community-based project planning and implementation, monitoring and evaluation, the animation approach, and community-based/ collaborative resource management;
- magistrates, prosecutors, and marine police in coastal ecology.

This has led to improved understanding and cooperation and villagers having a strong sense of ownership of the process.

The Office of Environment and Conservation in Papua New Guinea has a strong policy framework of recognition of indigenous management rights and capacity, supported by the PNG constitution. However, putting this into practice in the **Tonda Wildlife Management Area*** has been constrained by:

- a lack of understanding of strategies and tools for community involvement;
- limited recognition of successes of community involvement;
- difficulties in dealing with conflict within and between communities;
- limited resources for maintaining relationships with communities; and
- poor relations with local and provincial authorities.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

is also important that staff in government agencies which are likely to impact on the wetland and its communities also receive some training in these matters.

Attitudinal issues can represent a significant constraint to effective implementation. Where rangers or other government agents once looked down on local people as "uneducated" or "poachers", they may now be required to work closely alongside them to manage the natural resource. Commitment on the part of the agency and effective communication between line managers and field workers can help to ease this transition by explaining the rationale for collaborative management.

Government agents are not alone in their need for capacity building: dealing with government agencies and more organized stakeholders (such as business interests) may be new to local communities and they may need training in a variety of organizational and negotiating skills. They may need to learn how to establish and maintain appropriate organizations, develop effective relations with government agencies, and negotiate and contribute to decision-making. In

addition, they may need technical training in aspects of wetland management and monitoring of wetland quality (e.g., biodiversity or water quality).

The fact that the community is involved in the process of establishing participatory management suggests that they have objectives which they want to see met. These may or may not be the same as those of the government agencies involved and, even if similar, are likely to be perceived differently by community and government. Communities will be able to identify indicators which would tell them whether or not their objectives are being met. These indicators can then form the basis for a monitoring programme, possibly carried out by the community (but certainly "owned" by them), to determine whether or not the process is on track to provide successful involvement and to achieve the management goals that they have in mind (see Guidelines, paragraphs 17-22, as examples). Until now very few projects have assisted communities to establish monitoring programmes. Most monitoring programmes are based on government or funding agency perceptions of project objectives and are oriented toward providing information that those agencies require.

Participatory management benefits greatly from multi-disciplinary research drawing on biological and social science expertise. The importance of creating a sense of ownership of the participatory process applies to this aspect of management as much as the others. Thus, management-relevant research should not be seen solely as an activity identified, carried out and interpreted by

Box 9

On knowledge exchange and capacity building…

Management-related research

In the development of a management regime for the **Blyth/Liverpool wetlands in northern Australia***, aboriginal people were closely involved in research and survey work. The steps that were taken to establish their ownership of this process provide some excellent guidelines for other such activities, for example:

- identification of the research issues by the local community with assistance from researchers;
- visits by members of the community to the research headquarters and laboratories;
- local community participation in agreed surveys as advisors, guides, field assistants;
- participation of local community members in research based on interest, traditional land ownership and availability;
- training of local community rangers in some sampling techniques (one community ranger was given short-term employment in the research centre);
- initial interpretation of the results being done in the field; and
- the aim of rapid submission of technical reports to the community, with later "popularised" accounts planned.

Clearly these efforts have been appreciated by the local people. The community is building a ranger station which includes a field laboratory so that they will be more closely involved in collaborative research which will be a part of ongoing management of the wetland.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

"experts." Local people with an interest in the wetland need to be involved and can be encouraged to develop a degree of ownership of research activities that is consistent with the level of their interest in the resources (Boxes 2 and 9).

See also Handbook 18, Managing wetlands

Networking mechanisms such as regular meetings, newsletters, and radio programmes achieve information exchange and educational purposes (see text on 'Information exchange among stakeholders', page 19). Basic Ramsar concepts, stewardship principles and ecological values can be conveyed through the educational curriculum of local schools. Lastly, Wetland Centres can catalyse active and informed participation of local people; serve as demonstration sites for sustainable wetland management; support formal, informal and non-formal educational programmes that involve a wide range of stakeholders; help to bring community concerns to the attention of decision-makers; and provide information and advice on wetlands and their management.

2.5 Continuity

One of the most important lessons of the case studies and other experiences is that setting up a participatory management arrangement takes time. The need to allow relatively long periods for the establishment of involvement is closely related to the need for flexibility and derives from the same considerations. There is a need for time to plan and carry out activities jointly, and sufficient flexibility to try different paths. In addition, it must be recognized that local communities have their own time schedules and their own priorities, and these need to be respected. The time that must necessarily be taken to establish trust among the parties to a participatory management arrangement (see Section 2.2) also plays a part in prolonging the process.

Naturally the time taken will depend on the level of involvement that is desired (remembering that even the appropriate level of involvement is often not known at the outset). Projects which have sought to develop a significant level of local involvement in wetland management typically take several years to achieve this goal. Time spans of five years or more are not at all unusual.

Funding is also important to continuity. It is generally agreed that the establishment phase of securing local involvement in wetland management requires funding over and above that required for existing management. In the short term there will be additional expenditure on items such as meetings, surveys, training, and community development priorities.

In the long term, participatory management can lead to reductions in the cost of management through such effects as:

- reduced need for law enforcement;
- community contribution to monitoring;
- reduced need for research due to utilisation of local ecological knowledge; and
- reduced need for rehabilitation.

However, as with any management regime, participatory management may never be fully self-financing.

Continuity can be assisted greatly by high- and mid-level political support. Participatory management is almost always a radical change from previous approaches to resource management. Unless there is high level official approval

Box 10

On continuity…

The pace of implementation is important

As well as allowing sufficient time to develop involvement, it is also important that the pace of the process is acceptable to the community. Sometimes communities may feel that the process being used is taking too much time. In the **Tanga District in northern Tanzania*** local people expressed concern at the time they were spending on developing a management plan. Their solution was to give the management committees, which they had established, the mandate to further develop the management actions. This was conditional on the final action plan being approved by a meeting of resource users, but demonstrated that considerable trust had been generated during the process as well as clearly showing that the community felt comfortably in charge of the process.

In other situations there is a risk that the pace may be too rapid for local people. Those assisting the Bawinanga people in the **Blyth/Liverpool wetlands of northern Australia*** to establish a management plan for their wetlands, were aware of a need to ensure that the pace of technical input did not outstrip the local capacity to participate and give direction.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

of the concept, government officials at the regional and local levels are unlikely to provide the cooperation necessary to put participatory management into effect (see text on 'Political support' on page 17).

This high level involvement cannot be restricted to mere signing of papers approving the introduction of participation. It is important that consent to develop participatory mechanisms is accompanied by understanding of the ramifications of the participatory approach and support for its implementation, including support for necessary changes to administrative structures and approaches. For example, if participation is to be effective it needs to be carried out within an integrated approach to resource management which cuts across sectoral administration. Such integration will be unlikely to occur unless there is official commitment to the change. Experience shows that official statements about the desirability of involvement, without official commitment to adoption of participatory processes and associated changes, do not lead to sustainable changes.

See also Handbook 3, Laws and institutions

Good governance and legal and policy frameworks can greatly facilitate participatory processes and contribute to continuity. In well functioning democracies there is a recognition of citizens' rights to participate in decision-making which affects them. Citizens also have rights to organize, freedom to access information, and recourse through the legal system should one party take unfair advantage of the agreements in place. If these safeguards are not present, or if excessive corruption exists, there may not be the confidence in place to sustain local interest in the process.

In many countries there is a process of decentralisation of government functions underway, which grants significant power to local authorities and even to communities over management of natural resources (Box 11). This represents an

Box 11

On continuity…

Policy frameworks and decentralisation

In Madagascar, a new law was passed in 1996 on local management of natural resources. The policy, which is known as GELOSE (an acronym for *Gestion Locale Securisée*, or "secure local management"), is intended to hand over many management rights to local communities. This shift from government control to community control greatly assisted a process in the **Antsalova wetlands** to re-establish traditional rules, taboos and sanctions related to fisheries in a set of three lakes that are home to the endangered Madagascar Fish Eagle. The participatory process, facilitated by The Peregrine Fund, took advantage of the policy shift to reassert the rights of the traditional *Tompondrano* ("keeper of the lakes") to manage lakes that had been increasingly settled by migrating fisherfolk.

In Cameroon, a similar decentralisation process took place in tandem with a move toward multi-party democracy. In the early stages, however, democracy was misinterpreted as total liberty and open access to all natural resources within an area, irrespective of existing rules. This served to undercut the authority of traditional chiefs. The project managers for the **Waza-Logone*** conservation and development project had to educate local stakeholders that "democracy" implied responsibilities as well as freedoms, while also working with the chiefs to reassert some control over local resources (with citizen input). At the same time, the government's forestry law – which mandates the involvement of local people in forest and protected areas management – has facilitated the project's work. However, just as the notions of democracy were unknown to local people, project field workers have had to raise awareness of the new law among local authorities and to educate them about its implications for the way they work with communities.

*A summary of this case study can be found in Appendix I; the full text is available at www.ramsar.org/hbk4-07cs.

Local fisherfolk selling smoked fish; Waza-Logone conservation and development project, Cameroon.
Photo: A. de Sherbinin

opportunity for participatory management, and one that creates an important basis for sustainability. Nevertheless, the decentralisation process can be hampered by lack of resources and capacity at the local level, poor coordination between national policies and local administrations in environmental management, or passivity on the part of local governments towards problems they view as being outside their purview (OAS 1997).

Chapter 3. Implementing participatory approaches

The following operational guidance on implementing participatory approaches has been developed on the basis of the lessons learned from the commissioned case studies and the experience of many individuals working in the area of participatory natural resource management. It is not a blueprint. Rather, it is intended as a checklist of actions to be taken which can be referred to at different points in the establishment of local involvement in wetland management. Contracting Parties wishing additional guidance on how to set up participatory management processes are recommended to contact the Ramsar Convention [Secretariat] or to review some of the publications and Internet resources contained in the Additional Resources following Chapter 4.

The steps listed below will not be equally relevant in every situation. In particular, there will be a difference between situations where local people's livelihoods are strongly dependent on wetland resources and situations where they are not. Box 12 provides a brief description of stewardship approaches which are particularly relevant to developed country contexts in which many wetlands are privately owned.

The following step-by-step checklist of actions is particularly relevant for the implementation of participatory wetland management in contexts where there is a significant degree of dependence on wetland resources. Furthermore, it is assumed that there will be two main sets of partners: local/indigenous communities (including interest groups within them) and government agencies.

3.1 Getting started

1) **Ensure that the community understands the reason for the presence of the facilitators, project team, etc:**

   - make sure all stakeholder groups share this understanding, including government agencies whose responsibilities may impact on the wetland;
   - elicit the involvement of appropriate sub-groups (e.g., student groups, nature societies, etc.) within the community;
   - check regularly during the course of establishing participatory management that all groups understand the basic objectives of the initiative.

2) **Raise awareness of wetland conservation and sustainability issues:**

   - explain the cause and effect of resource sustainability problems;
   - involve local people in preparing and running awareness-raising activities to develop improved understanding and skills;
   - use appropriate social communication techniques (e.g., community meetings, street theatre, school curriculum, newsletters, etc.);
   - involve government agency staff in awareness-raising activities.

3) **Involve key stakeholders in the community (Box 13):**

   - identify individuals in subject areas such as resource use, ecological knowledge, etc.;
   - identify respected individuals who are enthusiastic and supportive;

Box 12

On implementing participatory approaches…

Stewardship tools

Based mostly on experience in North America, a new array of flexible tools is being developed to enable protection of land and biodiversity outside of protected areas, and especially on privately held lands. The new approaches fall under the umbrella of "land stewardship", which is defined broadly as people taking care of the Earth. These approaches are actively employed by state and local authorities, land trusts, and conservation organizations. The following are the most important tools, listed according to the level of formal commitment, effort and involvement required (from least to most).

Education and information: this is the most basic stewardship technique, which entails raising awareness among land owners of the natural values of their land and the simple measures they can take to protect them.

Recognition: this can be achieved through, for example, stewardship award programmes which can create enthusiasm for the approaches among landowners.

Verbal agreement: such agreements between the landowner and a stewardship organization create a sense of duty to landowners unwilling to pursue devices that are more legally binding. These are sometimes associated with technical assistance to the land owner.

Creative development: in some areas it may be appropriate to allow certain types of development on parts of a property, especially development that seeks to cluster commercial or residential uses while leaving larger blocks of open space.

Management incentives: this includes any programme designed to keep land in an appropriate use, such as wet meadow or swamp forest.

Management agreement: these fixed-term written agreements are used when active management of an area is sought, sometimes with compensation by the landowner. For example, the North American Waterfowl Management Plan has negotiated voluntary agreements with private land owners for improved management of wetland habitats.

North American Waterfowl Management Plan
Plan nord-américain de gestion de la sauvagine
Plan de Manejo de Aves Acuáticas de Norteamérica

Conservation easement: this is the fastest growing method for conservation in North America. It entails a restriction on the land deed prohibiting certain uses and allowing others. Owners may benefit materially through tax relief, though often the greatest motivation is a concern for the decisions future owners of the land might make (e.g., to develop or drain the wetland).

Acquisition: acquiring all rights to a property through purchase or donation is the most clear cut technique. The greatest impediment to this approach is the cost of purchasing and then managing the land.

Adapted from Mitchell and Brown, 1998.

Box 13

On getting started…

Whose claims are valid?

Given the potential variety of social actors who could play a role in wetland management, which ones are actually entitled to do so? This question can be approached by examining how the various actors justify their claims to management. The following are some examples:

- existing legal rights to land or resources (e.g., ownership, right of use, tenancy, legally recognized customary rights);
- direct dependency for subsistence (e.g., food, medicine, communication);
- mandate by the state (e.g., statutory obligation of a given government agency);
- dependency for gaining basic economic resources;
- historical, cultural and spiritual relationships with the wetland resources;
- unique knowledge of, and ability to manage, the concerned land and natural resources;
- ongoing relationship with the land and resources (e.g., local residents compared with recently arrived immigrants, visitors, tourists);
- loss and damage suffered as a result of management decisions and activities;
- present or potential impact of the social actor's activities on the land or resources;
- opportunity to share the access to resources and the benefits of resource use in a more equitable way;
- general, social recognition of the value of a given point of view/position (e.g., based on scientific knowledge, local traditional knowledge, etc.); or
- compatibility with national policies or international conventions and agreements.

Obviously, not all societies or groups within a society recognize *all* management claims from all other social actors. In an ideal process, the groups would organize themselves, express their interests and concerns, define themselves as institutional actors, stimulate society to recognize their claims as entitlements, and participate in negotiating an equitable division of management benefits and responsibilities. In this process, the actors with socially recognized entitlements could then be subdivided between primary and secondary institutional actors, and thus accorded different roles in management.

Adapted from Borrini-Feyerabend, 1999

- include both women and men.

4) **Involve local organizations that represent different stakeholders among local and indigenous people:**

   - identify organizations that are representative and accountable to the local people;
   - assist in the establishment of such organizations if they do not already exist;
   - give preference to adapting existing, traditional structures over creating new organizations.

5) **Provide the necessary assistance to local organizations to increase their capacity and capability:**

- include basic organizational skills such as conducting meetings, keeping records and accounts, conflict resolution, etc.;
- do not overlook necessary basic infrastructure such as a meeting place, telephones, transport, etc.

6) **Encourage ownership of the process and the participatory management arrangements at every opportunity:**

- ensure that the key government agencies are not excluded by community ownership; in a partnership these agencies also need to feel identification with, and ownership of, the process.

3.2 Participatory assessment and planning

7) **Use participatory assessment techniques to describe the existing situation and to identify community concerns (a wide array of participatory assessment tools and techniques are available; see Additional Resources following Chapter 4):**

- ensure facilitators of participatory assessment are skilled and experienced in the technique;
- make sure that root causes of problems are identified and not merely the results of problems;
- involve all groups in the community;
- ensure that there is scope for the local people to identify and prioritise all of their development concerns, not just those relevant to wetland resources;
- ensure that concerns with aspects of government agencies are raised if these are relevant - do not restrict the issues to those within the community;
- identify wetland resource access and tenure arrangements and any associated issues;
- identify any traditional resource management mechanisms and rules, including the rules for conflict resolution, and build upon them;
- avoid raising false expectations;
- avoid creating the impression that the activity is to gather data for "others" - make sure information coming out of the process is shared with the community and that they share in its interpretation;
- use data collected as a baseline for later monitoring and evaluation of the results of the participatory management process;
- make sure that local people learn the participatory assessment technique so that it can be used for other issues of community concern, and so that they can train members of other communities who seek extension of the approach.

8) **Carry out a needs analysis of key government agencies and local authorities (where appropriate) to determine what inputs will be required to allow them to play their role in participatory management, and provide necessary training and infrastructure:**

- do not overlook the need for new skills and major changes in attitude relating to participatory processes;

Box 14

On participatory assessment and planning…

Participatory mapping

Community mapping is a fully participatory methodology. The role of community organizers is to conduct training in the mapping technique, facilitate group discussions and village assemblies to discuss natural resource mapping, village land-use planning and institution building. Mapping facilitators should actively promote and explain the necessity of involving all neighbouring communities and ensure a broad representation of social groups within a village community in order to avoid land-use conflicts among villagers or neighbouring villages. Community mapping should be perceived as a tool for conflict resolution to foster practical, harmonious solutions to competing interests and claims to land territories and natural resources. Whether mapping is facilitated by a professional team, or by trained volunteers from villages that have expressed interest in mapping their customary lands, depends on the objectives of the mapping programme.

Adapted from Momberg et al.*, 1996*

- pay attention to the level of understanding of local wetland ecology, local culture, traditional resource management regimes, extent of local ecological knowledge;
- use members of the local community to provide training inputs;
- avoid a reliance on classroom approaches - for example, field visits led by local community members can be used;
- do not focus only on field staff – supervisors and regional managers must share the understanding gained by local workers and support the new approaches to wetland management.

9) **Ensure that key parties have a good understanding of each other's needs, responsibilities, limitations and culture:**

- facilitate communication between the various stakeholders within (and outside) the community;
- explain to the stakeholders the framework and constraints within which government agencies work;
- do not assume that communities understand the roles of government agencies, even if they have regular contact with them;
- arrange workshops where local people and government staff can communicate and explore their separate objectives in relation to wetland resources;
- establish mechanisms for regular communication between community representatives and staff of key government agencies.

10) **Carry out participatory planning and negotiation among stakeholders to develop a strategy for achieving local involvement in wetland management:**

- ensure facilitators of participatory planning are skilled and experienced in the technique;
- avoid raising false expectations;

Box 15

On participatory assessment and planning…

Results of the participatory assessment and planning phases

Too often the phases of participatory assessment and planning end without a clear sense of the steps needed to transform the acquired information and plans into an operational participatory management agreement. If the following results are achieved at the end of the participatory planning and negotiation phase, there is a reasonably good chance that the management partnerships and "institutions" (defined in the broadest sense) will be sustained over the long term.

1. A **common vision** of the long-term future desired by all the actors concerned. The vision is legitimated by an appropriate socio-cultural ritual which renders it sacrosanct.
2. A **strategy** to achieve that vision, sub-divided into key performance areas, with clear ecological, social and economic objectives in the short and medium term.
3. Some **agreements** (possibly contractual agreements) among the institutional actors to pursue objectives for each key performance area (including an analysis of feasibility, impacts, cost, etc.). These specify the sharing of functions, tasks, benefits and responsibilities of natural resource management.
4. One or more **participatory management institutions** to implement and remain in charge of the activities specified in the agreements for each component of the strategy.
5. A **follow-up protocol** to monitor and learn from the participatory management agreements, institutions and rules (performance, results and impacts).

Adapted from Borrini-Feyerabend, 1999

- involve different stakeholders in the community;
- ensure that necessary training and infrastructure required for local people to carry out management responsibilities are included as part of the plan;
- ensure that any necessary community development and alternative livelihood initiatives are identified;
- negotiate agreements;
- circulate the results of the participatory planning and allow time for informal discussion before holding a review meeting to revise the strategy;
- organize a debriefing session and, and in order to "legitimate" the participatory planning and negotiation, invite authorities with more extensive powers than those who participated in the process;
- ensure that local people learn the participatory planning technique so that it can be used for other issues of community concern, and so that they can train members of other communities who seek extension of the approach.

3.3 Implementation and learning-by-doing

11) **Ensure that all commitments are carried out, including arranging meetings and carrying out tasks agreed at meetings (this applies to all parties - local community members, government staff and project staff):**

- have the community elect or appoint individuals or committees to carry out agreed upon tasks;
- ensure that theses committees and individuals are accountable to the community;
- see that agreements by government agencies to provide material or financial assistance are adhered to.

12) **Assist the community to develop a monitoring and evaluation programme to check progress and success of the strategy (see Chapter 4):**

- assist the community to identify indicators of success that are meaningful to them;
- provide any necessary advice on indicators and monitoring programme design that will improve the validity of the results, making sure that the community retains ownership of the programme and is satisfied with the indicators;
- provide assistance, if necessary, on how to collect and interpret monitoring data through on-site training with members of the community;
- aim to leave complete data sets with the community;
- be willing to sacrifice statistical rigour in favour of approaches that the community understands and in which it has confidence;
- make sure that monitoring results are widely disseminated and understood in the community;
- remember to include government agencies in the monitoring programme(to monitor their performance) and its interpretation.

13) **Ensure that tasks taken up by various stakeholders are within their capabilities and that they have the time available to do them:**

- have regard to their level of understanding of the nature of the task;
- have regard to seasonal demands on local people's time, e.g., agricultural and ceremonial cycles;
- be aware of prejudicial attitudes (e.g., lack of trust between local people and agency staff).

14) **Ensure that funding agencies are kept up to date with the emergence of issues and the development of participatory management approaches (in this way they will be more prepared to accept necessary changes in direction or allocation of funds).**

15) **Establish networks among communities involved in wetland management and encourage regular contact and sharing of experiences:**

- organize study tours among such communities;
- organize conferences and/or regular informal information exchange;
- extend networks to key local figures such as media representatives, business people, politicians, etc., who may be able to support the community's participatory initiatives.

16) **Prepare for replication and extension from the beginning of the initiative:**

- avoid the trap of facilitators feeling that they are the only ones who can extend the approach to new communities;
- train local people and build their confidence so that they can train people in other communities;
- do not attempt replication too early in the project;
- beware of "me too" requests for replication in other communities which are motivated only by a general impression that there are material benefits associated with participation in the initiative.

Chapter 4. Monitoring and evaluation

The subject of monitoring and evaluation is well documented. This chapter is intended to provide a summary of the most important issues. As with the previous chapter, it is recommended that those seeking additional guidance on this subject contact the Ramsar Convention [Secretariat] or refer to the Additional Resources section following this chapter.

Monitoring is a continual process of checking to see if project activities are being completed in a timely and participatory manner, and the desired outputs are being achieved. Evaluation is usually carried out towards the middle and at the end of a project cycle, and is intended to measure the degree to which the project has achieved project outputs, the effects of those outputs (on the local population or the wetland), and progress towards achievement of project goals. Monitoring and evaluation can be defined as the collection, analysis and use of information (data) about project inputs, activities, outputs, objectives and goals so as to increase project effectiveness. Such data can also be useful for replication of project approaches in other communities.

In most resource manuals, a distinction is made between monitoring and evaluation that is carried out by experts or professionals and that which is participatory. In participatory wetland management, local stakeholders should be involved in selecting relevant indicators and, wherever possible, in carrying out the monitoring and evaluation. This will ensure that the initiative is meeting community goals and expectations. Involving local people in this way is likely to increase their commitment to wetland conservation and the participatory management process, as well as their sense of ownership of that process. Other reasons for involving people include the following:

- people like to know what the results of their efforts have been;
- people feel more committed to a community project when their opinions about it are asked for and valued;
- people generally like to learn how to do things better; and
- people feel more in control and comfortable if they can critically evaluate their own work rather than having it judged by outsiders (Woodhill and Robins 1998).

4.1 Participatory monitoring

Terminology in the field of monitoring and evaluation is specialised, and terms such as "outcomes" and "impacts" often take on very specific meanings.

Box 16

On participatory monitoring…

Four kinds of project monitoring

Monitoring is the collection and management of data that relate to predefined target values for specified indicators. Monitoring information is collected on a continuous basis throughout the implementation phase of a project.

Institutional monitoring: this category refers to internal monitoring of financial, physical and organizational issues affecting the project. Financial monitoring tracks project inputs and costs by activity within predefined categories of expenditure. Physical monitoring tracks the distribution and delivery of project activities and outputs/interventions. Organizational monitoring tracks sustainability, institutional development and capacity building in the project and direct partners.

Context monitoring: the process of tracking the context in which a project is operating, as it affects critical assumptions and risks to the project. This includes monitoring institutional and policy issues that may affect the capacity of the project to act or the capability of the target population to respond to the project. These concerns are handled to some extent during monitoring, but principally during evaluation.

Results monitoring: the process of tracking project effects (target population responses to project outputs/interventions) and project impacts (the contribution that the project makes to fundamental and sustainable change for the target population). Concerns about effects are handled to some extent during monitoring, but mostly by evaluation. Assessment of impacts is rarely dealt with by monitoring, and is principally in the domain of evaluation.

Objectives monitoring: the process of tracking project objectives and strategies for continuing relevance to the target population and its changing needs.

From Barton, 1997

An example of some common forms of project monitoring and their related terminology is found in Box 16. For the sake of simplicity, the discussion which follows is restricted to two important aspects of monitoring. The first is *process monitoring* which measures progress in securing project inputs (such as money, training, etc.) and delivering project outputs (such as training sessions conducted, number of hectares revegetated, etc). This is generally required by funding agencies and is relatively simple to carry out, and relevant indicators are easily established. Often the indicators can be taken directly from the goals and objectives as described in a project document or from a logical framework approach.

The second is *performance monitoring* which reveals trends towards or away from the objectives of the project. These might include, for example, measures of biodiversity conservation, ecosystem health, improvements to local livelihoods from the sustainable harvest of natural resources, or the extent of local involvement. An example of some measures of the success of local involvement can be found in paragraphs 17-21 of the Guidelines (pagesXX). Correct page numbers in the 4th edition will need adding here at layout stage] The indicators contained in the Guidelines are not exhaustive, but represent a first

approximation of whether or not participatory management has taken root and is likely to be effective and sustainable in the long term.

An example of community-established indicators for biodiversity monitoring is found in Box 17. Here, the community had a stake in the sustainable harvest of one particular species of shellfish, which, as it happened, was also dependent on the quality of the coral reefs. Similar examples of community-based ecological monitoring are found in the case studies for Australia and Tanzania (see Appendix I). Choosing a species of direct relevance to local communities for livelihood purposes will often ensure that biodiversity conservation objectives are also met. Monitoring can also be integrated into something that community members are already doing, such as monitoring water quality when they collect water or measuring the quantity of fish harvested during a specified time period.

If the community is sufficiently vested in the participatory management process, specialised training can be provided in the use of various tools and techniques for ecological monitoring. Facilitators can help the community to design a well-targeted, culturally appropriate, and simple monitoring plan. A number of the same participatory techniques that are used in participatory assessment and planning (e.g., mapping, semi-structured interviews, flow diagrams, matrix analysis, etc.) can also be very useful for participatory monitoring. A large and growing number of manuals provide descriptions of these techniques (see Additional Resources, following this chapter).

Although it is important to involve locals in the analysis and use of monitoring data, this does not mean that local people must necessarily collect the monitoring data itself. Being involved in the identification of indicators of success and in receiving and interpreting the monitoring results already constitutes a significant role. Some local groups may have lifestyles that are not conducive to regular monitoring (due, for example, to agricultural planting and harvesting cycles), or may lack some of the skills and knowledge necessary for the task. Furthermore, where a donor or conservation NGO has specific conservation objectives (e.g., increased migratory bird counts) that are not a direct priority for the community, it would be better for this data to be collected by outsiders with the relevant interest and expertise.

4.2 Participatory evaluation

In the literature on monitoring and evaluation, there is often an assumption of a distinct project that has been conceived and implemented by a single agency with well-defined objectives in mind. This is not always the case with participatory wetland management. A government agency or NGO may begin working with a community on one set of issues (e.g., nutritional status of the population or contaminated water), and find that these are tied to environmental concerns such as the health of the wetland ecosystem (e.g., declining fish catches). Thus, the work on wetland ecosystems may evolve organically from community concerns, not from a predefined project plan. In these cases, objective-based evaluations (measuring project outputs and impacts in relation to predefined objectives) will not provide a full picture of the project's impacts. Rather, a more open-ended approach is needed, examining how the project succeeded or failed, or if there were any unintended (good or bad) outcomes. This is often termed "learning-by-doing" or "adaptive management" (Box 18).

Box 17

On participatory monitoring…

An example of community-based ecological monitoring

For centuries, the people of Fiji have relied on marine ecosystems for their food and livelihood. Today, however, community members in **Verata Tikina**, a county of seven villages, are worried about threats to their marine resources caused by overharvesting and siltation. They want to control overharvesting and, at the same time, find alternative sources of income.

In Fiji, marine resource tenure is community-based, and communities know the reefs extremely well. Fijians live in highly structured, tight communities and possess strong traditional ecological knowledge of their ecosystems. In 1996, the Verata communities participated in resource assessments that prioritised their villages' needs. Community members mapped their villages, identified perceived problems, and discussed how to solve them. Then, in April 1997, a two-week workshop in participatory biological monitoring was held in Verata. Representatives from all seven communities participated and numbers swelled as more villagers, intrigued by the activity, joined in. Participants identified local marine resource-management problems, developed action plans to meet the challenges, and designed monitoring plans to judge the success of the interventions. Two *tabu* sites (no-harvest zones) were identified and approved by villagers to allow comparison of the levels of organisms in harvested and non-harvested sites, to study recovery rates, and to conserve biodiversity.

Aaron Jenkins, Wetlands International - Oceania, leading a training course for wetland managers in Fiji, February 2001.

At the end of the workshop, the villagers invited 40 government managers on a field trip to view the monitoring in action. They were so impressed that they asked for a training workshop to be held for their own government departments and also brought in NGOs. Through the monitoring, communities are seeing, for example, that controlled harvesting is allowing the recovery of the saltwater cockle, known as "kaikoso," in the no-harvest areas. Kaikoso was chosen by the community as an impact indicator. It is easy to count and measure, and it is a resource that the community values. As a result of this monitoring, the Verata council produced a motion to ban coral harvesting.

Adapted from Biodiversity Support Programme, Lessons from the Field, *No. 1, 1998.*

To facilitate learning-by-doing, it is important not only to collect data but also to adopt an appropriate management attitude. If mistakes are regarded as an opportunity for learning and if people are rewarded for identifying problems and promoting innovative solutions, learning-by-doing will be strongly encouraged. On the other hand, it is important that innovations, and in particular innovations to management plans agreed to by all stakeholders, are not introduced without the prior consent of all parties. Even if these innovations are potentially useful,

Box 18

On participatory evaluation…

Adaptive management and evaluation: learning-by-doing

For some projects it is easy to identify from the outset what needs to be done and why. For example, in building a community centre it is easy to have a very clear set of goals and objectives and an ordered approach to monitoring and evaluation. However, for natural resource management, many of the problems are ill-defined and complex, making it necessary to learn as you go and continually adapt the goals and objectives of the project. This non-linear, cyclical or learning approach is now commonly referred to as adaptive management.

The implications of this for monitoring and evaluation are two-fold. First, textbook approaches that consider evaluation as a neat, linear process – defining measurable objectives and performance indicators at the outset of a project and then monitoring those indicators over the project's life – are often unrealistic. Second, in such a situation, monitoring and evaluation actually becomes much more important as it provides information critical to adapting the project objectives and implementation. Where initial knowledge and objectives are unclear, more regular cycles of feedback are needed.

Adapted from Woodhill and Robins, 1998

they could invalidate the monitoring and evaluation, and thus the process of learning-by-doing.

Unlike monitoring, which is a continual process, evaluation usually implies a longer period of analysis and reflection. Evaluation might occur on an annual or bi-annual basis, or at the end of a specific phase of implementation. The focus of a participatory evaluation will be on matters of concern to the community, with an emphasis on what the community can do, together with government or NGO stakeholders, to improve upon the participatory management arrangement. After all, communities do not think in terms of "project periods"; the question of wetland management is part of their day-to-day life and may be critical to their own survival.

Many of the participatory techniques used for assessment, planning and monitoring can also be used during the evaluation phase. However, evaluation goes beyond measuring outputs (activities accomplished) and outcomes (changes in behaviour or in the environment), but also measures the impacts (degree to which project goals are achieved) and changes in the context that may invalidate the assumptions upon which the project is based. Examples of the latter could be a change in government, a new market for wetland products, expanded licenses to multinational fishing fleets, or political instability. All of these are factors external to the project context over which the community has little control, but which the participatory management agreement will need to address.

The results of participatory evaluation should be fed back into the management process so that both community livelihood concerns and ecosystem sustainability can be addressed. As the term "learning-by-doing" implies, this is an ongoing process of adjustment and re-negotiation of plans and agreements.

Additional Resources

[Editor's Note: The weblinks in this resource list have not been updated since the second edition] [

This list of publications and Internet resources is intended to help practitioners locate additional materials on participatory management. Reference manuals and Internet resources of particular interest are preceded by an asterisk (*).

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Internet Resources

Biodiversity Support Program website, http://www.BSPonline.org. The publications section of this web site has an electronic version of Beyond Fences, listed above, as well as other resources. [This now redirects to http://www.worldwildlife.org/bsp/ , but the publication referred to here seems no longer to be there]

* Collaborative Management Forum list server. This Internet discussion list can be subscribed to by sending an email message to hq@indaba.iucn.org with "subscribe cm-forum" in the text of the message.

FAO's Community Forestry website, http://www.fao.org/montes/fon/fonp/cfu/default.htm. [No longer available] Participatory wetland management holds much in common with participatory management of any other natural resource. This site includes many useful tools for community natural resource management.

* International Institute for Environment and Development (IIED) Resource Centre website, http://www.iied.org/resource. This web site provides a searchable catalogue of the entire IIED holdings related to participatory learning and action and community wildlife management. Photocopies and delivery of materials in IIED's Resource Centre are available free-of-charge to non-OECD countries subject to funding availability.

IUCN's Social Policy Programme website, http://iucn.org/themes/spp [now http://www.iucn.org/about/work/programmes/social_policy/sp_about/]. This web site includes the full text version of Collaborative Management of Protected Areas, listed above, [no longer findable] as well as other resources.

* NRM_Changelinks: Improving Community Participation in Environment and Development website, http://nrm.massey.ac.nz/changelinks. This web site includes important material on capacity building, collaborative planning and management, conflict management, and action research, and also has information on listservers and hyperlinks to other sites. [Not findable]

Appendix I

Case study summaries and author contact details

[Note: These case studies provided essential material for the development of the Guidelines and the Resource Paper. Some of the details on the activities they describe and the groups involved, etc., may now be out of date and readers are advised to contact the authors or their institutions for information on the most recent developments.

While the Ramsar Convention Secretariat is grateful to the authors for the role they have played in the development of this Handbook, the views they have expressed in the case studies do not necessarily reflect the views of the Ramsar Convention Secretariat and have not been endorsed by the Conference of the Contracting Parties.]

The case studies

The following case studies were commissioned by the project in response to Ramsar Recommendation 6.3. They provide important additional lessons about the varied mechanisms and approaches for local involvement in wetland management. Note that due to space limitations, it was not possible to include full summaries for each of the 23 commissioned case studies, and therefore a number of them are only described briefly. [Full texts of all case studies are available at the Ramsar website at www.ramsar.org/hbk4-07cs.

The 23 commissioned case studies

1 Australia: Blyth and Liverpool Wetlands, Northern Territory
2 Brazil: Baia do Castelo, Mato Grosso do Sul State
3 Cameroon: Waza-Logone Floodplain, Extreme North Province
4 Canada: Grand Codroy Estuary, Province of Newfoundland
5 China: Yellow River Delta, Shandong Province
6 England: Pevensey Levels, East Sussex Country
7 Guinea-Bissau: Rio Grande de Buba
8 India: Keoladeo National Park, Rajasthan State
9 Italy: Le Cesine, Province of Apulia
10 Japan: Yatsu Tidal Flat, Tokyo Bay
11 Malaysia: Kampung Kuantan, Selangor State
12 Mauritania: Diawling National Park, Senegal River Delta
13 Mexico: Coastal Wetlands, Sonora State
14 Mexico: Sian Ka'an, Quintana Roo State
15 Papua New Guinea: Tonda Wildlife Management Area, TransFly Region
16 Peru: El Balsar de Huanchaco, Trujillo Province
17 Russia: Dubna "Homeland of the Cranes", Moscow Region
18 Scotland: Focus on the Firths Initiative
19 Senegal: Djoudj National Park, St. Louis Region
20 Slovak Republic: Morava River Floodplains, Western Slovakia
21 Solomon Islands: Lake Tegano, East Rennell Island
22 Tanzania: Tanga Coast, Tanga Region
23 United States of America: Caddo Lake, States of Texas and Louisiana

Case study summaries

1. Australia

Case study area: Blyth and Liverpool Wetlands, Arnhem Land, Northern Territory
Wetland type: Large freshwater floodplain and delta
Stakeholders: Aboriginal land holders, government agencies
Conservation issues: Weed infestations, tourism, mining, feral buffaloes and pigs

The wetlands of the Blyth/Liverpool Rivers in northern Australia include a variety of habitats such as intertidal marshes and saltflats, mangrove swamps, lakes and freshwater marshes and flooded forests. These wetlands are a major conservation resource and provide a subsistence living to the local indigenous people, who, in addition to their cultural connections to the land, have extensive knowledge of the habitats and their biota.

The indigenous people own the land under inalienable freehold title and are keen to maintain aspects of their traditional lifestyle. Land ownership is vested in the local people through patrilineal linkages which are augmented by custodial responsibilities emanating from matrilineal linkages. These links are based on traditional rights and are not underwritten by formal documentation, although contracts for specific activities, such as crocodile harvests, are agreed to by individuals and small groups.

In order to deal with encroaching threats (such as weeds and feral animals) and management issues (such as applications by external mining interests to develop commercial enterprises), the local communities have participated in a consultative process to develop management prescriptions that emphasise their aspirations and connections with the land. Broadly speaking they do not favour the development of intrusive industry (e.g., mining, grazing, tourism), preferring to maintain a resource base that can support many aspects of a traditional lifestyle.

Management planning for the wetlands is facilitated by a statutory authority, the Northern Land Council, with funding from the Australian Federal Government and support from technical land management and research agencies. The process adopted has concentrated on consultation with the local community and has been mediated by a local association, the Bawinanga Aboriginal Corporation, which comprises elected representatives from traditional people resident in the area. The local people control the planning process through this corporation, which facilitates visits by scientists and management advisers.

Through this consultative process, key management issues and concerns for the local community have been identified and steps taken to assist the community to obtain the training and resources to initiate appropriate management actions. Many of the management actions (e.g., weed control) have been undertaken by, or in conjunction with, a group of community rangers who were specifically trained and engaged to provide a focal point for land management activities. Ecological surveys and preliminary sustainable harvesting programmes (e.g., crocodile egg collection and hatching) are jointly undertaken by researchers, community rangers, and other local people.

The surveys and analyses are contributing to an information base that will be used for management planning purposes. In collaboration with the Bawinanga

Aboriginal Corporation, outside experts conduct formal and informal surveys that feature an exchange of scientific and traditional knowledge. Local people accompany the outside experts and share knowledge and expertise. The material collected from these surveys and exchanges is lodged in a library resource associated with a newly constructed field laboratory. This laboratory was specifically constructed to attract further external surveys.

Together, the collaborative research and consultative process will, it is hoped, lead to a formal management plan for the wetlands. Extensive consultation will be undertaken within the local community before any agreement on management prescriptions is reached. This consultation is essential to complete the cycle of ensuring that the process is driven by and owned by the community.

The interests of the local community are addressed through cooperative processes and an exchange of traditional and non-traditional knowledge occurs. This interactive process encourages further consultation and the establishment of trust between the local community and research and management personnel from various agencies. Based on the existing local administrative structure, and augmented by external assistance, the local community has been able to obtain some training and experience in formal resource management and sustainable harvesting that reflects their aspirations.

Although the collaborative process has thus far been quite successful, several areas of concern remain. First, there is a need for capacity building in resource management within the communities. Further, once a management prescription is agreed there is uncertainty over how this can be enforced. The local community are empowered to make decisions about their wetlands but they do not possess the judicial power to enforce decisions on access or to prevent poaching by people from outside the region.

Funding for the consultation and management planning exercise is not secure and there is concern that the development of large commercial projects such as mining concessions, though lucrative in the short term, could erode the traditional resource base. Thus, wetland management cannot be divorced from other issues that affect the lifestyle of the local community, all of which require a secure funding base.

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2. Brazil

Case study area: Baia do Castelo, Mato Grosso do Sul State
Wetland type: Floodplain, seasonal lakes and permanent lakes
Stakeholders: Small cattle ranchers, hotel owners, water transporters, university agricultural research institute
Conservation issues: The state of conservation of the Pantanal is excellent but it is being threatened by a major project (the Hidrovia) to dredge and straighten the Parana River; this would significantly alter flood cycles vital to the floodplain ecosystems

Description

Located in the sparsely inhabited Pantanal Region, Baia do Castelo includes a variety of inland wetland types, including riverine floodplains, permanent freshwater lakes, and seasonal freshwater lakes. The Pantanal functions as a major water buffer system, releasing very slowly the water accumulated during the rainy season. The major conservation issue is the construction of a proposed inland water highway (the Hidrovia), that entails dredging a channel which approximately follows the course of the upper Paraguay River as far as Mato Grosso State in the North, a major grain producing area. This would greatly modify the seasonal flooding patterns which are so important for the maintenance of the region's unique assemblage of plants and animals. Given the low population densities, there are few stakeholders near Baia do Castelo apart from a wealthy farmer/land owner and some small commercial enterprises. They have become awakened to the value of the ecosystem through the activities of several conservation organizations and the Center for Agricultural Research in the Pantanal (a governmental research center), but they are not directly involved in management activities *per se*.

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3. Cameroon

Case study area: Waza-Logone flood plain, Extreme-North Province
Wetland type: Large freshwater, Sahelian floodplain
Stakeholders: Sedentary fisherfolk, nomadic and transhumant stock breeders, traditional chiefs, government decision-makers and technical services, and conservation NGOs
Conservation issues: Drought and water diversion drastically reduced flooding

The Waza-Logone area comprises 800,000 hectares in the Extreme-North province within the Lake Chad Basin. It contains a vast floodplain known as the *yaéré* which is an important wetland in this part of the country. The annual average rainfall varies from around 750 mm in the South to 600mm in the North and the wet season lasts only five months – from mid-May to mid-October – while little

or no rain falls during the rest of the year. Temperatures vary from an average annual maximum of around 41°C to a minimum of 13°C.

The main river of the area, the Logone, flows in a northerly direction and receives the greatest part of its flow from higher rainfall zones to the south. During September and October the peak flow reaches the lower floodplain, and except in very poor rainfall years, the river overtops its banks and floodwaters spill onto the floodplain. Because of the almost complete lack of relief the flood spreads over a large area. Traditional techniques for exploiting the flooded areas include fishing from artificial canals dug from the banks of water courses, indigenous rice cultivation, and, once the floods have receded, grazing on the rich pasture.

In the past, two principal seasonal rivers rising in the Mandara mountains also contributed to the inundation. In 1978, a dam was constructed for an irrigated rice scheme which greatly restricted the seasonal flows of water from these rivers to the plain, and led to extensive ecosystem degradation and negative impacts on traditional livelihoods. Since 1994, the hydrological condition of the wetland has been improved by the opening of two seasonal watercourses connecting the Logone river to the Logomatya river, from where significant flows spread onto the floodplain. The resulting rehabilitation of fisheries and pasture, both vital to the subsistence economy, opened the door for negotiations on collaborative management of the region's natural resources.

The Waza-Logone area, like the rest of the national territory, is primarily state property, although there exists some private property with title deeds. The area also contains two national parks – the 171,000 hectare Waza and 4,500 hectare Kalamoué – which are globally important centres of biodiversity. The traditional rights of access to resources on the floodplain are well established. Land that is not under cultivation, such as grazing land, is open access, but the users (e.g., nomadic groups with their cattle) must pay a tribute to the *Lamido* (cantonal chief) for grazing rights. The tribute or tax (locally known as *zaka*) is estimated at 10% of production.

For those wishing to settle in the area, applications must be made to the village chief, who is locally responsible for land management. Due to scarcities of land suitable for cultivation and for settlement (the amount of land above the flood levels is limited), these requests for land need to be balanced with availability. The chief of the village is helped in his decision by a number of advisers who consider requests for all land-use types. Once the chief has made his decision, he must inform the *Lamido*, who has the authority to reverse his decision.

In 1996, the IUCN Waza-Logone Project facilitated a process whereby co-management agreements were developed between villagers and the authorities in charge of Waza National Park. Prior to this time, villagers surrounding the Park routinely entered the Park illegally for fishing, grass collection, and poaching. Poaching, grazing pressures and drought were leading to a dramatic decrease in wildlife populations (elephants, various species of antelope, and giraffe) in the Park. Collaborative management arrangements with villages surrounding the Park legalised villagers' abilities to undertake certain activities (depending on the zone: fishing, collection of grass for thatching, and bee keeping), while ensuring their collaboration in surveillance of Park resources.

For the rest of the floodplain, the project has started the process of setting up a management structure. Currently, a model of this structure has been defined

and the project approach is to negotiate management agreements for each type of resource with different stakeholders and formalise them. All together, these management structures are under the authority of an existing regional committee (the Permanent Committee) in charge of management of the entire Waza-Logone area. The role of this committee is to ensure that development activities in the Waza-Logone area are compatible with conservation purposes, and to adjudicate conflicts within the management structures (Park and flooded area).

The role of stakeholders in each structure depends on the natural resources at stake. For local subsistence farmers, fishermen and stock breeders, their role is to use natural resources in compliance with management agreements and rules, to protect these resources against outsiders, and to participate in the identification, planning and monitoring of eco-development and micro-project activities. Administrative authorities considered as decision-makers must check that agreements are respected and must adjudicate conflicts arising from the implementation of management agreements. Municipality authorities, who are responsible for local development plans, must take the clauses of management agreements into consideration. Heads of technical services (agriculture, forestry, stock breeding and fish) contribute to the control of natural resource use and advise local populations when important decisions relating to the exploitation of resources are being taken. The role of development agencies and NGOs with both development and conservation purposes is to facilitate the establishment of management plans and committees. For research institutions, their advice in the use of natural resources (especially in the Park) is necessary. The parastatal organization in charge of the irrigated rice scheme gives technical assistance for management of Lake Maga's water resources.

For the Waza-Logone region, participatory planning and management is an important tool for bringing the concept of ecosystem-based management into reality. This has ensured the involvement of target groups and provided flexibility in designing and implementing activities.

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4. Canada

Case study area: Grand Codroy Estuary, Province of Newfoundland
Wetland type: Estuary
Stakeholders: Local permanent and vacationing residents, small farms, provincial natural resource management department
Conservation issues: Critical habitat for several migratory bird species; also for bear, moose, beaver, and red fox

Description

Grand Codroy Estuary is located on the west coast of the Island of Newfoundland, approximately 30 kilometres North of Port Aux Basques. It is

part of the Atlantic Flyway of North America. There are no major threats to the wetland, but there is a potential for over-development of the area due to its attraction for second homes. Locals are involved by providing local ecological knowledge, participating in associations, supporting stewardship agreements, and providing labour and resources for conservation measures.

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5. China

Case study area: Yellow River Delta
Wetland type: Intertidal mudflat and reed marshes
Stakeholders: A state farm, six townships, the oil industry, a livestock and poultry farm, a military base, and the National Yellow River Mouth Administration Bureau
Conservation issues: Oil exploration and pumping, various pollutants, agricultural land conversion, illegal poaching and fishing

The Shandong Yellow River Delta National Nature Reserve is situated northeast of Dongying City in Shandong Province. It faces the Bohai Sea in the North and borders Laizhou Bay in the East. The Yellow River plays an important role in maintaining the regional hydrology. With increasing water consumption upstream, especially the rapid development of irrigation works, the river dries out frequently. The underground water includes saline water and slightly saline water which, due to its high mineral content, is not very suitable for industrial and agricultural production.

The total area of the reserve is 153,000 hectares, and it contains 131 kilometres of coastline. The reserve is mainly marine and coastal wetlands, with 7,966 hectares inland or human-made wetlands, including freshwater ponds and reservoirs dispersed throughout the reserve. With its abundant wetland vegetation and aquatic organisms, the reserve provides a habitat for breeding, migratory and wintering birds. Six kinds of habitat have been identified, including farmland and reed ditches, forest, reed and meadow wetlands, salt bush marshes, water areas and Seepweed *Suaeda forsk* mudflat. Seven species are listed in Appendix 1 of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), while 26 and 7 bird species are listed in Appendices 2 and 3 respectively. In addition, several species of marine mammals, reptiles and fishes have also been listed in CITES appendices or national priorities. The reserve is listed as a priority site of China's Biodiversity Conservation Action Plan and its Agenda 21.

The reserve includes several state-owned Forest Farms with a total area of 64,000 hectares, constituting 42% of the reserve. It has a 79.2 thousand hectare core area, a 10.6 thousand hectare buffer zone and a 63.2 hectare experimental zone. The core area can be used only for scientific research and the experimental zone can

be used for scientific experiments, field research and tourism. Resources in the buffer zone are used intensively due to population pressure.

The Shandong Yellow River Delta National Nature Reserve Administrative Bureau has total authority to enforce national laws and regulations, but is not always able to enforce its authority. The Reserve Bureau is responsible for the development, implementation and monitoring of a wetland management plan and developing regulations and standards on the basis of consultation with local communities. Ecological monitoring, scientific research and public education are also conducted in cooperation with Wetlands International-Asia Pacific and a number of key Chinese universities and other agencies. Public campaigns about the reserve have been carried out in both the print and broadcast media, at central, provincial and local levels.

Local communities use resources (e.g., agriculture, fishing, apiculture, fuelwood collection and oil extraction) under agreement with the Reserve Bureau. In most cases when there is a conflict, the government decides the outcome. The municipal, county and township governments have facilitated local community involvement, which has been carried out through both informal and official channels. In order to coordinate conservation issues and encourage stakeholder participation in wetland management, the Dongying Municipal Government set up the Shandong Yellow River Delta National Nature Reserve United Conservation Committee in June 1997. Members include directors of relevant authorities of the municipal government. Local regulations provide the legal basis for community involvement, particularly when conflicts arise.

Principles of the Ramsar Convention are important guidelines for community involvement in the Yellow River Delta. Due to the population pressure and demand for resources, current wetland management does not aim at strict protection of wetland resources. Therefore, the Reserve Bureau has based wetland management on the sustainable use of resources. Some results have been achieved in protecting the wetland biodiversity and facilitating involvement of local communities in wetland management. As a result of improved local awareness and implementation of the management plan, the number of bird species has increased from 187 to 265 over the last nine years, and the individual numbers of several species have increased substantially.

The Reserve Bureau has developed a comprehensive and detailed wetland management plan, including management guidelines, engineering design, tourism development, scientific research and the institutional framework. This plan is coordinated between relevant agencies, and the Bureau is responsible for monitoring illegal harvesting and hunting. The wetland area is a mixture of rural and urban districts, although the reserve is predominately rural and the main sources of revenue are oil and natural gas production and aquaculture. The infrastructure for these activities affects the reserve ecosystem, such as the road network and the oil derricks and pollution from oil and gas production.

Oil and aquatic food production are the two main economic activities in the area. In addition, large-scale reclamation was carried out in the past for farmland, but salinisation led to land abandonment and the cultivation on state farms has caused serious ecological deterioration in the Yellow River Delta.

The oil industry is the main source of pollution in this region, accounting for 40% of the total waste gas, 40% of the total waste water and 43.9% of the total

industrial residues of Dongying City. The main stream of the Yellow River and its large and medium-sized reservoirs have fairly good water quality; however, the water quality of small rivers has deteriorated due to agricultural runoff and industrial sewage. Eutrophication and red tides at the river mouth harm the aquatic ecosystem and decrease food production for waterfowl. In addition, poisonous pollutants affect the birds throughout the food chain. With the rapid development of the local economy, pollution will inevitably be an important threat to this coastal ecosystem.

The Shengli Petroleum Administration Bureau manages the Shengli Oil Fields, some of which are located in the reserve. While the oil fields have provided local communities with important infrastructure, such as roads and communications, they have also caused habitat fragmentation with derricks and roads crossing through the area, in addition to the pollutants of oil production, which affect the wetland ecosystem. The oil field production activities need to be coordinated with wetland management, but there are conflicts between the oil field and Reserve Bureau.

Due to the region's high population density, many local people still live within the reserve, and many more people in the surrounding areas regard the resources in the reserve as their main livelihood. Therefore the Reserve Bureau cannot successfully manage the reserve without local community participation. Due to the remote location and saline-alkaline soil, local residents have difficulty making a living and so illegal reclamation, grazing and hunting frequently take place. In recent years, with increased economic development, the market demand for seafood has increased, as has the harvesting of fish, shrimps, crabs and molluscs, which of course also affects the reserve ecosystem.

Although the Yellow River Delta has a wetland management system, it needs to be strengthened. Improvement of local awareness, including that of government officials, is still necessary for effective management. The current management system needs to have more authority to resolve the conflicts with the Shengli Oil Field. The challenges facing reserve management are complex due to population pressure and the need to balance much needed energy production and economic development with protection of the delta. Penalties and incentives to use clean technologies and to reduce pollution need to be put in place to protect the delta from the oil fields. Strategies for stakeholder participation will help to relieve some of the illegal activities.

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6. England

Case study area: Pevensey Levels, East Sussex
Wetland type: Marsh, wet grassland
Stakeholders: Land owners, National Farmer's Union, government environmental agencies, conservation NGOs, a wildlife trust, and researchers
Conservation issues: Drought and water diversion drastically reduced flooding

The Pevensey Levels face many of the challenges confronting the management of wetlands throughout the world. The numerous land owners have a variety of objectives for utilising the wetlands and there are overlaps and gaps in the responsibilities of the various agencies involved. The Levels were declared a Ramsar site on 2 February 1999 (World Wetlands Day), but have suffered degradation in recent years due to drainage improvement and agricultural intensification. This case study provides a good example of how the various stakeholders have been involved in the decision-making process, which will hopefully lead to more sustainable management and wise use of the wetland.

Of particular importance has been the establishment of a Study Group of local stakeholders, whose role has changed since its establishment in 1992 from identification of the issues facing the Levels to implementation of the Wildlife Enhancement Scheme, that compensates landowners for environmentally sensitive land use. More recently the Group has played a central role in the development of water level management plans for the Levels and in controlling an invasive exotic plant.

The Pevensey Levels lie between Eastbourne and Bexhill-on-Sea, East Sussex, the formation of which was dominated by the changing relationship between land and sea. The hydrology is dominated by the dynamics of the relationship between stream inflow, rainfall, outflow to the sea and evapotranspiration. Groundwater movement is not important, since a clay layer effectively isolates the Levels from the underlying chalk aquifer. Rainfall averages about 800 mm per year.

The earliest records describing the Pevensey Levels date from Roman times. At that time, all land below 4 metres was submerged at high tide and the area was a wide, tidally-influenced bay studded with an archipelago of small islands. The main feature that characterises the history of the wetland to the present day, has been the continuing effort of local peoples to utilise and exploit the marsh. Attempts to reclaim the marsh date as early as 772. Evidence from two Anglo-Saxon charters of the time and records from the castle *demesne* suggest that the land was ploughed, sown and harvested at this time, albeit on a small scale.

Reclamation began in earnest during the Middle Ages and was achieved by progressively enclosing portions of the marsh within sea walls. The development of a natural ridge blocking the propagation of seawater onto the marshes greatly facilitated reclamation, and by the end of the 17th century, ditches were dug to facilitate the drainage of freshwater, by far the biggest obstacle to agricultural exploitation of the Levels. The long history of human intervention with the local wetland environment has created a series of wetlands in a continuum from the natural state to intensively farmed land. Reclamation has produced a network of terrestrial and semi-aquatic habitats including pasture meadows and wet meadows intersected by a network of drainage ditches. The ditches are particularly rich biologically, supporting a great diversity of species including some which are nationally rare.

The national decline of characteristic avian species of wet grasslands is well documented and the Pevensey Levels provide a vivid example of the effects of drainage improvement and agricultural intensification on wetland species diversity. Pump drainage schemes have been instrumental in reducing the extent and duration of flooding and lowering the water table. Winter flood waters are pumped off the lowland and discharged to sea at low tide. Ditch water control and management is a crucial aspect of successful farming in these areas and some form of water control structure (sluices, bunds or penning boards) is present on most ditches. The general management principal of ditch water levels is to retain low levels in the winter to provide sufficient capacity to store flood water. However, this conflicts with wildlife conservation objectives.

In recent times the management of ditch water levels in wet grassland areas has come under increasing scrutiny due to the increasing difficulties in satisfying the ditch water level requirements of different stakeholders on opposite banks of the same ditch. Water Level Management Plans have become a statutory obligation in many wetland sites across the UK. The plans provide a means by which the water level requirements for a range of activities including agriculture, flood defence and conservation can be balanced and integrated. However, in the case of the Pevensey levels this has not been an easy task. The water level requirements of the stock farmer, the arable farmer and local wildlife are markedly different, particularly in terms of the annual cycle of fluctuations.

In response to these challenges, the Pevensey Levels Study Group was set up in 1992. Chaired by the Environment Agency, the group does not provide a statutory mechanism for decision-making, but rather is a forum for stakeholders to address issues relating to, and threatening the integrity of, the Levels. Among other things, the group: (1) exchanges ideas, information and issues pertaining to the Pevensey Levels and ensures consultation with appropriate organizations and individuals; (2) ensures that monitoring on the Levels is coordinated so as to avoid duplication of effort; and (3) is responsible for coordinating the development of Water Level Management Plans and for their implementation.

The group meets biannually, unless specific issues arise, and is composed of the Environment Agency, English Nature (a nature conservation organization), the Royal Society for the Protection of Birds, Sussex Wildlife Trust, the National Farmers Union, landowners, and technical advisors from research institutions.

Initially the Group discussed matters of a general nature. As time has passed, however, discussion has tended to become more focused on firstly, issues relating to the Wildlife Enhancement Scheme and secondly, on those arising from the development of the Water Level Management Plan. In all these areas, the Group has provided a valuable and complementary tool in resolving stakeholder problems. In managing the Wildlife Enhancement Scheme, for example, English Nature has benefited greatly from the wider-scale approach provided by the Study Group. In most other contexts, English Nature has to deal with individual signatories to its Scheme, but the Group provides the opportunity to speak to the farming community as a whole through the National Farmers Union representative who regularly attends meetings. Drafts of Water Level Management Plans have been circulated to all landowners, and Group members have been available to provide explanation where necessary, resulting in its rapid development.

A key element in the management of the Pevensey Levels has been the commitment to funding scientific studies to underpin decision-making. This has been very complementary to the stakeholder participation, as Study Group members have frequently asked for best scientific opinion or information when faced with a decision to be used alongside their personal experience and views. For example, based on scientific advice the Group devised a plan for dealing with an invasive species, the floating pennywort. The plan, which involved spraying of herbicides, would probably not have been publicly acceptable had it not been for the credibility provided by the Group's endorsement.

Whilst the Group has logged many successes, its future will be closely tied to specific activities such as implementation of the Wildlife Enhancement Scheme or development of Water Level Management Plans. Local farmers have made it clear that although they may be interested in conservation, they are first and foremost businessmen, with the farm as their business. A scheme has been devised to compensate farmers with a subsidy of £74 (US$120) per hectare for maintenance of high water levels during the winter months. Without a scheme to compensate farmers financially, they would not be able to agree to water levels that would affect their farming. Much depends on the situation of the landowner: for absentees who lease the land, it is an attractive subsidy, whereas it is insignificant for a sheep or beef farmer who can earn at least £3,750 (US$6,000) per hectare in a good year.

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7. Guinea-Bissau

Case study area: Rio Grande de Buba
Wetland type: Estuary
Stakeholders: Traditional fishermen, women's cooperatives, government agencies, and a conservation NGO
Conservation issues: Overfishing of barracuda, deforestation of the catchment

Rio Grande de Buba, situated on the southwestern coast of Guinea Bissau, is a brackish estuary with very productive fisheries, a high density of marine and terrestrial mammals, and a wide diversity of bird species (at least 270 species). Sixty-five percent of Guinea Bissau's 1.1 million people reside along the coasts and are dependent on the natural resource base. Since the early 1990s, IUCN has been facilitating the development of collaborative management arrangements between local villages and government agencies for the sustainable use of productive coastal fisheries.

With only 45,000 people, the region has a low population density and yet historical circumstances and lack of development have resulted in a steadily

deteriorating environment. During the war of independence (1962-1974), colonial powers destroyed the impressive dikes that local populations had erected over centuries for irrigated rice cultivation. As seawater invaded their lands, the local ethnic group (Beafada) was forced to clear small parcels in the forest for rain-fed rice, a practice that continues to this day. In addition, there is some deforestation by commercial firms from Bissau in search of the most profitable hard woods.

Traditional methods of fishing for local consumption dominated in the region until the 1980s, when foreign fishermen from Senegal started to arrive. Well organized, and with higher technology, they quickly began to overexploit the fish of highest commercial value, which they transported in ice chests back to their home country without ever participating in the local economy. Other groups came from the south (Guinea Conakry and Sierra Leone) who, due to their animist belief systems, were better accepted and began to settle along the coast. They practice mainly the smoking of fish for export to the Sahel. This practice also has a negative impact on forests in the area.

In the early 1990s, IUCN established a project based on the sustainable use of fish resources and participatory management of artisanal fisheries. Although there had been several artisanal fisheries projects in the past, for the most part they failed to gain local support because they disproportionately benefited foreign fishermen. To avoid this, the IUCN office identified two local individuals with strong leadership capabilities who had a desire to break with the non-participatory nature of past activities. Because they were local these individuals were able to work very effectively as facilitators among the Beafada people.

After a year of negotiations, seven groups of fishermen were organized, but the facilitators felt it too early to provide financial support. The problem of credit was difficult to resolve, but the facilitators decided ultimately to allow the system to organize itself on the basis of traditional structures, which although somewhat risky, proved more sustainable than rolling funds managed by the project itself. Fortunately, cultural traditions in the area are such that people respect their debts and responsibilities to one another.

After four years of operation, about 100 fisherman benefited from loans averaging US$200, in which reimbursement was at the rate of 90-100% depending on the community. The money was kept in a chest with four locks, and keys were kept by four different individuals in the community. Reimbursement to the chest was made in monthly meetings in which individuals paid their debts in full view of other community members. If a fisherman was unable to make payment, he would have to justify this before the community.

At the same time as the credit scheme got under way, research was undertaken by a national research institution on the acceptable level of fisheries exploitation. The researchers worked with the villagers to learn about local practices and to develop a series of sustainable fishing practices. In 1993, the project brought together representatives of the different fishermen's groups into a coordination committee. They arrived at a general objective: fish reasonably and respect the resource.

By 1994, it became clear that barracuda was being overfished. Rio Grande de Buba, being one of the principal reproductive areas of these fish, was targeted for limitations on the number of boats and the use of fine meshed nets during the rainy season, when reproduction is at its highest. The local fishermen's groups

were called upon to inform all fishers in the area, including the foreign boats, of the rules in effect. They also inform the authorities of those who break the rules. This system seems to work fairly well, and compensates for the lack of government resources to patrol the area.

Other activities developed by the project included the commercialisation of fish through women's cooperatives. As the women's cooperatives became more engaged in local and regional markets, they requested and received training in basic adult literacy and numeracy. In addition, the project helped to create a local market in the provincial capital, Buba, which began as a fortnightly affair, and very quickly developed into a daily market drawing on all the small villages in the area.

Quite independently of the project, the local fisherman's groups approached the National Fisheries Agency and requested to buy new nets. The director hesitated, but asked the fishermen to come to Bissau to discuss the matter. The fisherman's groups managed to purchase the nets, paying half in advance, and paying the remainder in record time.

Finally, in late 1996, a coincidence greatly helped the local economy. Salted cod, traditionally imported from Portugal at Christmas time, was in short supply due to decreases in the North Atlantic cod fisheries. By coincidence, salted and dried barracuda has a similar taste and the local woman's cooperative marketed this salted fish to Bissau and made significant profits (US$100 per woman).

Out of this local, self-led development process, with assistance from IUCN and modest government intervention, a number of important results have been obtained: the population of barracudas has stabilised and seems to be climbing, and the global catch of barracuda, which previously primarily benefited foreign fisherman, has been reduced, with a greater proportion of the benefit going to local communities. There is also an exceptional growth in the number of requests for training and support by villagers, the result of a successful, village-driven development effort.

Prior to the conflicts that engulfed the country in 1998, there were more than 30 different groups organized around different economic activities, representing 425 women and 125 men. Because men represent the main source of inertia for local changes, efforts will have to be made to involve them more fully. There are also dangers that poor fishermen from other areas will continue to come to Buba – and its relatively well preserved fisheries – to install themselves. For this reason, there will need to be efforts to develop a more integrated, regional approach to fisheries management.

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8. India

Case study area: Keoladeo National Park, Bharatpur, Rajasthan
Wetland type: Marshes
Stakeholders: Livestock herders, tourism operators, National Parks Department, international tourists, and a conservation NGO
Conservation issues: Conflict over uses of the wetland, and equitable benefit sharing of proceeds from conservation

Keoladeo National Park is located near Bharatpur town on the western edge of the Gangetic plains at the confluence of two tributaries, the Gambir and Bangane. The Park is known as *ghana* (dense forest) among the local people, and Bharatpur Bird Sanctuary to many outsiders. The Park contains considerable plant and animal diversity and is particularly noted for its birdlife, with over 354 recorded species.

The history of the Park is as fascinating as its biodiversity. The area was a natural depression, and the wetlands have existed in some form or other for several centuries. The Keoladeo was re-designed by the local kings to attract more migratory birds. The present wetland sites are reported to have been designed around 1750 after the construction of a small dam, Ajan Bund, by the famous local king Suraj Mal, who used the area as a waterbird hunting area. The Ajan Bund helps to retain soil moisture, supply water to crops, and maintain the groundwater levels.

The Park is a great tribute to water management design. It has many dykes and water gates that permit the controlled management of wetlands and forested areas. Though the initial design had nothing to do with biodiversity conservation, the place became a symbol of conservation and a source of inspiration for many naturalists, environmentalists, and ordinary people. Keoladeo was declared a National Park in 1980, became a Ramsar site in 1981, and was elected as a World Heritage site in 1985.

In response to the Government of India's Wildlife Protection Act (promulgated in 1992), the Park management constructed a three metre wall around the Park with barbed wire on the top, banned buffalo grazing (which had been practiced for centuries), and restricted free access to temples inside the Park. These measures were intended to improve the ecosystem and Park management, and to promote international tourism.

However, they were implemented without any consultations with the local communities. This led to a breakdown in relations and communication between the local people and the Park authorities and many incidents of overt conflict, non-cooperation, and passive resistance.

The prohibition of grazing also led to some conservation issues. After a decade-long study that cost nearly US$ 1 million, many of the organizations that had advocated the ban on grazing for conservation concluded that buffaloes were needed to control water weeds (particularly *Paspalum distichum*). Ironically, this was known by local people all along. Thus, the conflict between the local people and the Park management was not solely about extending economic benefits, but integrating resource use and ecosystem needs.

In light of the differences between Park regulations and local populations, an initiative was set up to help manage conflicts and to promote the involvement of

local people in wetland management. The prime objectives of the initiative were to:

- Facilitate a dialogue with the local communities in order to understand their concerns.
- Identify the key areas of agreement and disagreement between the local people and the authorities.
- Identify the measures, both short-term and long-term, leading to the conservation of wetlands which would be agreeable to both the Park authorities and the local communities.
- Initiate a process for establishing a local institution to manage the wetlands in cooperation with the Park authorities.
- Prepare policy and operational guidelines which could be helpful in similar situations within India and in other countries.

The initiative selected the Participatory Rural Appraisal method to conduct a local workshop. This method is considered as one of the best ways to facilitate a dialogue with local communities, particularly in the context of natural resources management, where local people have a significant understanding of the system. The World Wide Fund for Nature (WWF) organized this workshop at the invitation of the Department of Forests, Government of Rajasthan, India, which is responsible for managing the Parks. The director of the Park and another staff member were part of the 16-member team, as were local staff members of the Bombay Natural History Society and managers of other Ramsar sites. The team was aware that the methods are only tools and do not alone facilitate the process. Attitudes and behaviour are most important but are not easily defined or taught in training sessions and the whole process is dependent on developing the trust of the people.

The major outcome of the initiative was that a reconciliation began between local communities and the Park management. Other key findings were as follows:

- Conservation of the Park in the future may very much depend on the extent to which local people participate in the management of the wetland and its resources; the Participatory Rural Appraisal clearly demonstrated that people are willing to be involved if some of their traditional rights are respected.
- The rules, regulations and acts of conservation at a national level may not always contribute to the conservation of National Parks.
- The local communities around the Park are well aware of the relationship among birds, the wetlands and the surrounding semi-arid forests.
- Grazing inside the Park by buffaloes is needed for ecosystem management.
- Tourism is not significantly benefiting the local community: given the low entrance fees charged to foreign tourists, and the small proportion of the population involved in the local tourism industry, tourists are in fact subsidised by the government and local people.
- The people are willing to form local institutions to conserve and use the resources.
- Respecting traditional use and knowledge directly contributes to the conservation of the Park.

The initiative was quite successful in publicising results through a report and a video entitled *Conservation with a Human Face*. The report and video have received wide attention from conservation and development circles in India and many other developing countries. Since publishing the report in 1996, Park authorities have taken several steps. The most significant has been to initiate an informal dialogue with community leaders. As a result of this dialogue several agreements were made at local level leading to extension of fodder collection, and respecting passage rights and access to temples inside the Park. Some welfare measures and confidence building measures were also initiated by the Park authorities. As part of implementing the recommendations of the report, the entry fee for tourists has increased.

However, the most important measures, such as allowing limited grazing to control the weeds, transferring part of the revenue generated by the increase in entry fee to the community, and joint management of the Park, have not yet been implemented. This is not due to any lack of interest on the part of the Park authorities, but rather because such measures require a major policy change at the national level. Under the national policy, grazing is not permitted within national parks. Therefore, the implementation of management plans involving communities may require major national policy changes. This initiative was only a small step in changing such policies.

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9. Italy

Case study area: Le Cesine, Province of Apulia
Wetland type: Brackish lakes behind dunes
Stakeholders: Hunters, local students, farmers, tourism operators, conservation NGO (WWF)
Conservation issues: Potential for growth in tourism and related development to threaten these rare brackish lakes

Description

Le Cesine is an intertidal marsh located in Apulia, along the southern Adriatic coast, and is the last surviving stretch of what was once a vast marshland extending from Brindisi to Otranto. The primary conservation challenges include tourism development along the coast. Local opposition to the protected area was gradually changed to support through the environmental education efforts of WWF-Italy, and recognition that the marsh represents a valuable local resource that can also contribute to the local economy through its scenic value.

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10. Japan

Case study area: Yatsu Tidal Flat, Tokyo Bay
Wetland type: Tidal mud flat
Stakeholders: Upper income urban residents, conservation organizations, local authorities
Conservation issues: Industrial pollutants and urban run-off

Description

Yatsu Higata is a tidal mudflat located in the deepest northern end of Tokyo Bay. It is almost entirely surrounded by urban land but remains connected to Tokyo Bay by two narrow channels which allow inflow and outflow of tides. Given that 90% of tidal flats in Tokyo Bay have been reclaimed, Yatsu Higata plays an important role as a staging and wintering site for migratory waterbirds on the East Asia-Australasian Flyway. The primary threats to conservation relate to the water quality coming from Tokyo Bay. Local authorities, conservation organizations and citizens are involved in helping to manage the site through preparation of the management plan, waste collection, water quality monitoring, and bird monitoring.

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11. Malaysia

Case study area: Kampung Kuantan, Selangor State
Wetland type: Mangrove
Stakeholders: Villagers involved in tourism operations, village council, local authorities, and a conservation NGO (Wetlands International-Asia Pacific)
Conservation issues: Management problems in ecotourism and environmental pollution

Description

Kampung Kuantan is located 18 kilometres upstream from the estuary of the Selangor River. Mangroves in the area attract a species of firefly (*Pteroptyx tener*) which produces a synchronized flashing pattern, resembling the blinking lights of a decorated Christmas tree. A local entrepreneur developed a commercial

boating enterprise allowing tourists to observe the fireflies, which led to some further tourism development in the area. The primary threat to the firefly habitat is a river diversion project upstream, which will result in decreased freshwater flushing, along with uncontrolled tourism development in the area. Several local stakeholders – including the village security and development council and the local entrepreneur – are involved in site management through provision of technical assistance, advice on conservation and management issues, and dissemination of education and awareness materials.

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12. Mauritania

Case study area: Diawling National Park
Wetland type: Delta, estuary, mangroves
Stakeholders: Fishermen, women reed collectors, livestock herders, National Parks Department, and a conservation NGO
Conservation issues: Degradation of a productive ecosystem due to dam construction

Diawling National Park is a Ramsar site in southern Mauritania in the delta of the Senegal River, 30 kilometres north of Saint Louis, Senegal. Until the 1960s, the lower delta of the Senegal River was an area of extraordinary ecological richness. A mosaic of dunes, floodplains and estuarine zones with mangroves, the area was known for its rich birdlife and important fisheries. Several thousand people, practising a variety of activities, found a livelihood there. Since then, environmental quality has deteriorated, first by repeated drought and later by the alterations brought about by the large-scale hydraulic engineering works under the authority of the Organisation for the Economic Development of the Senegal Valley, a trilateral organization grouping Mali, Senegal and Mauritania.

Under this organization, two major dams were built in the watershed. The first was a storage dam at Manantali in Mali (completed in 1990) on the Bafing, the main tributary of the Senegal River and contributing 50% of its flow. This created a reservoir capable of stocking 11 billion cubic metres of seasonal rainfall on the Fouta Djalon mountains in Guinea, which could then be gradually released over a longer period than the natural flood. The second was a salt-wedge dam at Diama (completed in 1986), close to the river mouth. Both dams were intended to facilitate year-round irrigated agriculture along the river.

With the construction of the Diama dam, the estuaries of the Senegal River delta were effectively deprived of freshwater. The lower lying areas closer to the mouth of the river became hypersaline, and the once productive mangroves and fisheries nearly disappeared. In areas above sea level, the impact of prolonged drought, tree cutting for fuelwood and fodder, and engineering works resulted in seriously

diminished vegetational cover (trees, annual and perennial herbs and grasses), leading to vast desertified plains with windblown salt and moving sand dunes.

After ten years of controversy, the Diawling National Park was established in 1991. The Park's objectives provide a clear mandate to integrate conservation and development and to include all stakeholder groups of the lower delta, not only those whose traditional rangelands are inside the protected area. To support this innovative approach, IUCN and its local and foreign partners organized a visit in 1994 by a multi-disciplinary team composed of sociologists, hydrologists, agronomists, ichthyologists, protected area specialists, a botanist and an estuarine ecologist. In order to integrate the views of the local population, a participatory approach was favoured.

It was immediately clear that local knowledge of the former functioning of the system was highly developed and that it would be indispensable for the drafting of the management plan. The main conclusion of the study was that it would first be necessary to restore the pre-dam flood cycle. The return of productivity would allow the local population to take up their traditional activities (in the central Bell basin of the Park and the peripheral zone) and to develop or extend new ones, notably ecotourism and market gardening. This would be accompanied by measures to facilitate transport (access roads, embankments) and to provide an adequate drinking water supply.

During 1994 and 1995, detailed interviews were conducted with most of the stakeholder groups and additional scientific investigations were carried out. The first draft of the management plan was then circulated amongst the local partner institutions (Faculty of Sciences of Nouakchott University, Banc d'Arguin National Park, Direction de l'Environnement et de l'Aménagement Rural). The second draft was presented to a wide audience of stakeholders and government institutions in December 1996 and, after amendments, approved by the Ministry of Rural Development and the Environment in early 1997. In the meantime, a first phase of ecosystem restoration, training and equipping of the Park authority and some small scale pilot projects with the local population were started.

After explaining the major axes of the management plan and implementing some pilot projects on integrated rural development, a proposal was made to the commune to constitute a management committee which would assure the liaison between the Park and the local population for joint management activities. It was proposed by the Park that this committee would have representatives from the most important stakeholder groups (e.g., freshwater fishers, estuarine fishers, grazers, market gardeners, makers of handicrafts). The commune, in return, proposed to create a committee almost identical to the municipal council; a body essentially composed of village chiefs. However, some of the stakeholders communities felt they were not at all represented by this council, and some council members had very little knowledge of the functioning of the ecosystem. It was therefore not a very useful structure for input to the management decisions. As a compromise the Park has been continuously providing the municipal council with the key technical documents and informing them of visits of technical experts to the area. The day to day contact and exchange of management advice has been done on a village-by-village, stakeholder group and on an *ad hoc* basis.

Although discussions with stakeholder communities covered the entire lower delta, detailed studies and activities were initially concentrated on the three villages in closest contact with the Park and whose traditional rangelands

would be most directly and immediately affected by the new management. The approach was greatly helped by the fact that, at the Park's creation in 1991, some respected elders from various villages were recruited as guards and that the Park's head of surveillance is a respected local 'chief'. Clear instructions had been given not to take a repressive approach in surveillance, but rather to seek to educate poachers and those collecting cormorant eggs about the values of the species, and the necessity of sustainable use of the local resources.

To restore the flooding, sluices and embankments were built. The re-flooding, begun in 1995, had immediate beneficial effects on the ecosystem and local livelihoods. Two of the re-flooded basins located next to the Diama Dam reservoir saw a return of reeds (*Sporobolus*) used by women for mat production, fisheries, and pasturage. In the estuaries outside the basins, the mangroves that had been decimated by saltwater incursions and cutting began to regenerate. This brought with it increased reproduction of shrimp, and consequently shrimp fishing. In 1998 the largest shrimp catch in living memory was recorded.

As the fishermen have an extremely detailed knowledge of pre-dam hydrology and fish migration and spawning patterns, technical collaboration was very productive. Thus the Berbar sluicegate was added to the original scheme in order to allow fish migration to and from the spawning grounds in the Diawling -Tichilitt basin. Thanks to flexibility on the part of the funding agency, funds that were to have been allocated for an embankment on the Park's northern edge were re-allocated to construct the Berber sluicegate and a second one, Lekser sluicegate, for shrimp migration. This was added on the advice of the brackish water fishermen.

With the hydraulic infrastructure completed in 1996, the water in the Bell basin could be completely controlled. The fishermen proposed an early flooding as they knew *Tilapia* wrasses were ready to spawn as early as July. The women insisted that the *Sporobolus* and other grasses needed rain before flooding to achieve optimal production. Waiting for the rain would delay flooding to early or mid-August, which would considerably shorten the growth season of the fish. It was therefore decided to simulate rainfall by allowing only a thin layer of water to cover the crucial parts of the floodplain in July. This compromise scheme, early flooding to 1 metre above sea level (ASL) with a pause in water rise until early August, and then raising to 1.1 metre ASL, was tested in 1996. The test was highly successful with women collecting grass stems of over 2.5 metres in length.

Obviously, the return of productivity has had positive effects on wildlife. In 1993, the Park contained only 2,000 waterbirds, and in 1994 a waterfowl census recorded only 2 birds. In 1995 this increased dramatically to nearly 50,000, with the rest of the Mauritanian lower delta showing similar changes. Subsequent counts show a very clear relation between bird counts and the maximum water levels reached during flooding. The Park now regularly contains numbers of international significance of several species of waterbird and regular breeding of certain species has begun again in the lower delta.

Paradoxically, when the project began in 1994 it had the comparative advantage of finding an almost completely destroyed ecosystem with very little exploitation pressure. Therefore, the gradual restoration of the hydrological cycle over the years 1994-1996 was immediately perceived by the local population as a positive action. The project is now coping with the results of its own success. The presence of water in the Park basins has attracted entrepreneurial businessmen who want

to develop hundreds of hectares of vegetable gardens in the regenerating *Acacia* forest on the edges of the dunes, just to the west of the Park's borders. This would reduce the wetland's interactions with the surrounding dry land. Other entrepreneurs are also quickly taking advantage of the resurgence in the shrimp industry, and this may result in unsustainable exploitation. Finally, as there was very little grass elsewhere in the dry season of 1997, the Bell basin, which normally accommodates a few hundred local cows, was invaded by some 1,200 bovines from further north. It seems necessary to evaluate the carrying capacity and hold a round of talks with all local and outside stakeholders to determine who (with how many animals and when) will be allowed to graze in the lower delta. Otherwise, in a true drought year, the results could be catastrophic.

For their part, local villagers have clearly seen the interest in the rehabilitation project, and their opposition to the Park has turned to enthusiastic support for further extension of the Park boundaries westward (to include the mangroves). The project is now seeking to expand the flooding northward, and with the development of hydraulic infrastructure linking the Diama reservoir to the capital, Nouakchott, in the north, may be able to flood several thousand additional hectares. There is also a possibility of creating a biosphere reserve for management of the zone surrounding the Park.

Major issues in the future relate to the need to find an acceptable institutional arrangement to formalise exchanges among stakeholders and implement the management decisions, and to address the land tenure situation. In the case of the latter, the traditional system of collective ownership that prevails in the delta has no legal status. In principle, the law states that the land belongs to the person exploiting it, but only intensive forms of exploitation qualify (i.e., with visible infrastructure such as embankments, enclosures, and houses). It is relatively easy for influential city dwellers to obtain a temporary license to exploit the 'wastelands' that are part of the traditional multifunctional resource space, the commons, and turn them into areas of intensive agriculture. Issues such as these could be addressed in a biosphere management plan, leading to more sustainable use of the resources of the entire delta.

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13. Mexico

Case study area: Coastal Wetlands, Sonora State
Wetland type: Deltas, estuaries, lagoons and mangroves
Stakeholders: Indigenous people, artisanal fishermen, commercial fishermen, large-scale farmers, salt extraction companies, conservation NGO (Pronatura), State of Sonora Government

Conservation issues: The estuaries are polluted by agricultural run-off and overexploited for fishing and salt extraction; conservation issues were until recently inadequately addressed by state and federal legislation

Description

These coastal wetlands of southern Sonora are situated in three important deltas, those of the Yaqui, Mayo and Fuerte rivers. There are 62,000 hectares of wetlands, 62% of which are estuaries, and the rest of which are bays. These are wetlands of high biological diversity and are located along an important shorebird and waterbird migratory flyway. Effluents from intensive, irrigated agriculture pose the primary threat to conservation of the wetlands, followed by cattle husbandry, shrimp aquaculture and urbanisation. The primary stakeholders in the wetland are permanent and seasonal fisherman, ethno-linguistic groups (Yaquis and Mayos), aquaculturalists, farmers, livestock raisers, hunters, tourists, industrialists, and local residents. A strategic plan is now being developed by government agencies, academic institutions, NGOs and community representatives with support from the North American Wetland Conservation Council. Through a series of workshops beginning in 1994, stakeholders have had the opportunity to identify the major conservation issues confronting the wetlands and to provide input to the strategic plan.

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14. Mexico

Case study area: Sian Ka'an, Quintana Roo (Yucatan Peninsula)
Wetland type: Coral reefs, coastal wetlands, tropical forest
Stakeholders: Indigenous subsistence farmers, fishermen, tourism operators, government agencies, local research institutes, international conservation NGOs
Conservation issues: Deforestation, expansion of grazing lands, tourism development

Sian Ka'an Biosphere Reserve is a coastal limestone flat of 628,000 hectares located mid-way between Belize and Cancun on the eastern coast of the Yucatan Peninsula. It is a region where land and sea converge gradually into a complicated hydrological system. Extensive mangrove stands and creeks, salt and freshwater marshes are found even 40 kilometres inland from the coast. The coastline includes brackish lagoons and huge shallow bays of varying salinity, harbouring seagrass beds, and dotted by islets and mangrove keys. The coastal and wetland system is protected from the energy of the Caribbean Sea by a barrier reef growing all along the coast. This species-rich coral reef is part of the second largest barrier

in the world; its growth is dependent on the transparency of the waters, and is greatly affected by sediment laden waters from inland erosion. Coastal marshes and mangroves may be invaded by the sea during tropical storms, and particularly during hurricanes (one hurricane every 8 years as a mean in the last century). Thus, the reef protects the coasts, the seagrass beds and the mangroves, while the latter in turn prevent erosion, and so the degradation of the coral. The system is rich in marine and brackish species, most of which find suitable breeding and feeding habitats in the area, such as many commercial fishing species and particularly the Spiny Lobster (*Panulirus argus*).

This coastal area and its surrounding forests were sparsely inhabited by the Maya in pre-Columbian times. Over these poor and fragile limestone soils only the Maya had developed a self-sustained shifting agriculture, complemented by gathering practices in the forests and wetlands, a practice still followed today in some communities. By the mid-1970s, timber companies began to approach the coast, opening access routes and leaving deforested areas to be burned out and claimed by cattle ranchers. Cattle need over 30 hectares per animal on these poor, stony soils. Fires were extensively used to clear fields from secondary succession and to open new areas, and most non-flooded areas were rapidly transformed. All coastal areas and surrounding forests were still owned by the Federal state. However, by law, anybody who cleared and fenced the land gained legal title, providing an incentive for further forest clearing. At the same time, over 90% of the original dune vegetation on the coast had been claimed for coconut palms; over 100 fishermen had settled in the area and many more living in neighboring countries arrived seasonally to fish on the reefs and bays.

By 1980 the unplanned development, mainly based on forestry, tourism and unsustainable cattle ranching, was already generating a 17% annual demographic growth in the state of Quintana Roo. Deforestation proceeded at 6% a year, while hunting and fires were generalised. As in most tropical areas of Latin America at that time, deforestation was supported by the government, and banks would offer credit to introduce cattle almost anywhere. The rapidly growing tourism industry depended on scarce ground water, leading to salinisation of coastal wells. Tourism operators also claimed dunes and drained mangroves, while uncontrolled visitation over the fragile coral communities had locally killed important tracts of the reef. In some places, wetlands were used as a sink for sewage.

In the early 1980s, an ecological and forestry assessment clearly indicated that the rapid exploitation of natural resources and the fragility of the limestone ecosystem were driving a rapid and irreversible degradation. The combined recommendations of the assessments pointed to the development and promotion of sustainable economic activities, the conservation of the natural functions of the limestone ecosystems, and the urgent protection of representative samples of all habitat types and biodiversity. These were ambitious goals for a scarcely populated piece of land the size of Costa Rica. Specific objectives included:

1. land-use ordination based on (a) the capacity of the soils and natural resources; (b) ecological criteria (water and biodiversity protection); and (c) sociocultural priorities and capacities;
2. replacement of commercial timber harvesting with community-based sustainable forestry;

3. protection of the mangroves and reefs as a means to protect the coast from erosion, thereby sustaining fisheries, wildlife and tourism;
4. conservation of representative samples of functional ecosystems and the biodiversity they contain;
5. promotion of sustainable economic activities based both on traditional and on new appropriate technologies;
6. provision of sewage systems in urban population concentrations and alternative sources of water to stop degradation of the coastal water table.

The state government, at the time headed by a committed Governor, Joaquín Coldwell, agreed to proceed with the main short-term actions: ending timber concessions to private companies, the establishment of a community forestry programme with local *ejidos* (a Mexican system of communal land ownership), and the declaration of a biosphere reserve. It was reasoned that a biosphere reserve could attract cooperation from scientists and foreign agencies to an otherwise very marginal area; while an alternative plan to manage forests could raise the development capacity of the Maya communities, generate sustainable jobs, and help conserve the last forests.

On the basis of ecological studies carried out in 1982-83, Sian Ka'an was selected as the site for a Biosphere Reserve. In 1984, the government initiated a process to formulate a management plan with the participation of local communities. The main institutions involved from the state and federal governments created a steering committee with an operative technical commission to coordinate the field work. A local council was also established, including representatives of the fishermen, coconut growers, cattle owners, peasants, scientists and representatives of municipalities and of the steering committee. Since 1984 this council has held regular bi-monthly meetings. To ensure scientifically based management decisions, the state research centre and the Autonomous University of Mexico City established basic biological and ecological research projects during this time.

In the initial stages of establishing the reserve, forest concessions and cattle ranchers were asked to gradually leave the area, fishermen organized themselves to control their fishing grounds, education and awareness activities got underway, and the main roads into the area were controlled. Meanwhile a zoning scheme was drafted and discussed by representatives of the user groups, while regulations for each of the zones were proposed. The management plan was drafted, discussed, reviewed and finally approved by the State Government in 1986. The zones included:

- multiple-use zones, which are inland areas dedicated to agriculture, coconut, small-scale tourism;
- gathering zones, which in inland areas refer to traditional uses which do not disturb the structure of the forest (e.g., no logging), and in coastal areas are fishing zones under control of the fishermen's cooperatives; and
- core zones for strict protection of biodiversity, which on the coast include fish breeding areas, mangrove keys and coral reefs.

For each zone, particular regulations were proposed; these included control of road construction, house building, transportation, use of fires, pollution, research, visitors , management practices and the use of all natural resources.

Soon after its inception the project attracted attention from international conservation NGOs such as WWF-US and Conservation International. On their advice, a local NGO (*Amigos de Sian Ka'an*, or Friends of Sian Ka'an) was established in 1986 to develop and promote participatory field projects, education and awareness campaigns, and citizen participation in the conservation of the area. Influential individuals from Quintana Roo and Mexico City agreed to be founding members together with local landowners and conservationists. *Amigos* has promoted participatory research and development projects with the local communities inside the reserve (horticulture, lobster management, diversification of fisheries, management of useful wild palms, ecotourism) and in the surrounding *ejidos* (improved agriculture techniques, wildlife management, crocodile ranching). The Maya have a deep traditional knowledge of their ecosystem. Their right to gather in the wild and hunt for subsistence purposes was recognized by the zoning scheme. After land-use rights were granted in multiple-use areas, communities expected the development of economic alternatives. These were based on the sustainable use of local resources and the use of local environmental knowledge.

Simultaneous with the establishment of the biosphere reserve and its management plan, the community forestry programme was initiated with the *ejidos*. This coincided with the end of a 25-year concession to a timber company in this area. The local people organized themselves as the core decision-makers in land-use planning of the *ejidos*; identified the areas which should be subject to permanent forestry activities (100,000 hectares) and defined the management techniques, while the governmental Forest Service was asked to shift its role from control and vigilance to technical assistance. The first 10 *ejidos* created a Forest Producers' Society to produce and commercialise the timber. Mahogany *Swietenia macrophylla* had been over-harvested by timber companies, so locals initially reduced its exploitation by 50%, while focusing on a growing percentage of common and previously non-commercialised hardwood species. Rotation cycles were set at 25 years. Compared to previous earnings as workers in the timber company, Society members' income multiplied by a factor of 19 in the first year. With these encouraging results, another 16 *ejidos* of the Maya area joined the forestry programme in 1985, adding a further 150,000 hectares to the pilot forestry plan.

Land tenure issues needed to be addressed and resolved in order for participatory management to be successful. Since the Mexican revolution in 1910, the land in *ejidos* belongs to the communities. However, in the Biosphere Reserve the land was federally owned and local inhabitants, whose access could be considered illegal, were concerned about their future land rights. Conservationists recognized that locals needed to have some incentives to sustainably use the Reserve's resources, so the council proposed 90-year concessions for agricultural lots. Concessions are subject to the Reserve's regulations, and can be withdrawn. In a unique experiment, this concept was also applied to the sea. The lobster fishing grounds in the two bays were divided by the fishermen into fields; 110 fields were drawn in Ascension Bay for the 110-member cooperative. Strictly speaking, this modality cannot be legalised, but is already a traditional management structure in Sian Ka'an. Each fisherman cares for his "field", devoting efforts to improve the lobster habitat there; conservation is almost guaranteed and there is a strict vigilance by the cooperative against poachers or outsiders. This contrasts with fishing areas elsewhere in Mexico, where, for the most part, resources are claimed on a first-come, first-served basis, often by those with better fishing equipment.

In light of the success of these initiatives, there is a need for continued policy support. The concept of participatory management has been accepted by the government and internalised by the communities. There was no need to create new institutions, only to coordinate the existing ones. Most of the field action in both initiatives is still in non-governmental hands, which should guarantee continuity. The local capacity – in terms of community organization, sustainable production, technical assistance, financial administration and product commercialisation – has grown tremendously. The almost complete independence of these programmes from external funding agencies strongly contributes to their sustainability.

Perhaps the most serious remaining threat over the coastal areas is the potential economic pressure from the tourism industry that has so strongly developed in the rest of the State. Environmental sustainability is still the main question. The diversity and functionality of the ecosystem are locally protected, but the long-term response of some natural resources to global ecological changes and to present extraction rates also needs to be assessed.

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15. Papua New Guinea

Case study area: TransFly region including Tonda Wildlife Management Area
Wetland type: Subtidal aquatic beds, coral reefs, sand beaches
Stakeholders: Customary land holders, government agency, international conservation NGO
Conservation issues: Invasive species, fire control, logging, some mining/ industrial effluents

Tonda Wildlife Management Area, on the southern extremity of Papua New Guinea's (PNG) border with Indonesia, is PNG's largest and oldest conservation area and one of only two Ramsar sites. New Guinea, the world's largest tropical island, is not usually associated with savanna woodlands and yet this island of lush rainforest is also flanked along its south coast by important monsoonal savannas. Open acacia woodlands, grasslands and *Melaleuca* swamps extend across a broad area from the Merauke River in the Indonesian Province of Irian Jaya to the Fly River mouth in Papua New Guinea. The South New Guinea savannas cover approximately 2.5 million hectares on the New Guinea south coast, straddling the PNG and Indonesia border. While the remainder of PNG has rugged topography, the southern Fly platform (or TransFly region as it is locally known) is remarkably flat with a maximum elevation of 46 metres.

With around 1,500 to 2,000 mm of rain per year, this ecoregion is the driest in New Guinea, yet it has some of the most extensive and diverse wetlands in the Asia Pacific, almost all of which are in excellent condition. A rich mosaic of vegetation types are found here. Dry grasslands and savanna woodlands

dominated by *Acacia* and *Melaleuca* species are widespread. These are interspersed with mangroves, littoral forest, monsoon forests, gallery rainforest, swamp woodlands and herbaceous communities. It has equally high mammalian diversity and endemism.

Currently, the major threat is invasive species that have been introduced since the turn of the century. Rusa deer *(Cervus timorensis)* are found in large numbers, wild dogs are reducing native marsupials populations, and the recently introduced climbing perch *(Anabas testudineus)* is raising concern as it moves across into PNG river systems. Weeds are having an equal effect with water hyacinth *(Eichhornia crassipes)* now found in the Merauke area of Indonesia and the Fly River in PNG. Community use of fire has increased recently with some concern that this is changing vegetation structure. *Melaleuca* scrub is extending to engulf grasslands and bushfires have extended into Irian Jaya with serious effect. Industrial development is also now impinging on this inaccessible region. Heavy metals and silt are reported as concentrating in the Suki wetlands from effluent from the Ok Tedi mine in the Upper Fly catchment. Logging is proposed for the wetter (and unprotected) forests of the Oriomo River and there has been some test drilling for oil with consequent chemical spillage.

With a very few exceptions, the people of the South New Guinea savanna region are indigenous to the area, living in villages or small hamlets on ancestral land. Around 12,000 people live in the TransFly, making it the most sparsely settled area in PNG with an average density in the west of around 0.6 persons per square kilometre. Culturally, this region is remarkably rich. Along 300 kilometres of coastline there are no less than 14 distinct languages and more than 25 dialects, each of which also represents a distinct cultural group.

The TransFly people are primarily subsistence farmers, and their economy is based largely on yam cultivation and hunting. The remote nature of the area and poor rainfall and soils have left it largely untouched by industrial development. Cash income is low with very limited access to cash-earning opportunities. Government services are severely restricted and public health conditions are poor. Tourism, centred around a hunting lodge on the Bensbach River, is small but steady and provides a number of opportunities. Local communities are keen to increase their trade in wildlife and forest products (deer meat, crocodile skins, candlenut, saratoga, etc.) both to tourists and through markets in Daru and across the border. There is also a growing cross-border trade.

The Constitution of the modern state of PNG guarantees the right of customary communities to own their land and the resources within it (with the arguable exception of minerals). A previous colony of Australia, PNG became independent in 1975. Today, 97% of its territory is controlled by indigenous communities. As a result, major development decisions which impact on community resources must be undertaken with the participation and consent of land-owning communities.

Indeed, experience to date shows that for conservation and development activities to last and be adopted elsewhere, they must be driven by the communities themselves or be based on genuine partnership between communities and outside agencies. Furthermore, it demands that any activities must take place in a way that fits comfortably with PNG methods and community institutions. This means that agreements must be negotiated and implemented on a clan level. Often, there is intersecting (or competing) ownership of resources in any given location. One clan usually has primary rights of access, whereas another group (say,

new migrants or neighbours) may have obtained rights to habitation or use of certain resources. Furthermore, decision-making tends to operate on a modified consensus basis, with primary right holders having proportionally more influence than secondary right holders, again requiring extensive consultation.

This set of features has necessitated approaches to resource administration that are centred on indigenous consent, partnership and continual negotiation. For instance, forestry operations may only proceed if agreed to by representative resource-owner groups; mining operations must be conducted through development fora with strong landholder representation; and the innovative Wildlife Management Area and Conservation Area concepts allow for a form of conservation area where management rules are defined by resource-owning communities according to local custom and needs as well as conservation priorities. National Parks have proven a limited success in PNG due to the difficulty of the state acquiring customary lands and the lack of management capacity to protect purchased lands.

Tonda Wildlife Management Area, adjoining the Indonesian border, is the largest and the oldest Wildlife Management Area in PNG. Established in 1975 by the PNG Office of Environment and Conservation (OEC) in partnership with local communities, it seeks to conserve 590,000 hectares of savanna, protect wildlife species from over-hunting, and attract sustainable development. A game lodge (Bensbach Lodge) was negotiated and built on the Bensbach River also in 1975. The Area is entirely managed by an all-male committee of indigenous community representatives (the Tonda Wildlife Management Committee) according to a set of by-laws which they helped to develop. The initial rules of 1975 have been amended at least four times and now provide for the issuing of licenses (commercial, tourist and individual), restrictions on the use of guns, restrictions on hunting in certain areas, and limits on size and sex of fauna taken. The rules also set license and royalty fees on hunted animals and regulate the handling of monies received. Royalties are collected by the Bensbach Lodge Manager on all animals caught, and are paid, in equal proportions, to the landowner on whose land the animal was taken and to a trust account for development and welfare in the area. The customary owners are guaranteed the right to continue using the resources of their wetland on a sustainable basis for livelihood and income generation.

The tourist lodge (run by an expatriate) is a prime motivator in maintaining the Area and provides a significant model of corporate support for conservation. It is one of the more successful tourism operations in a country where visitation is not well developed. In 1996/97 the lodge received an estimated 1,000 bookings. Apart from the government, it is by the far the most significant employer in the region, has brought a number of services to the area (including airstrips, trade store and mail) and actively assists the Management Committee in performing its duties. While landowners recognize the importance of the lodge to the area and the Wildlife Management Area, they have continued to express concerns that it is not open to local shareholding and that its operations do not provide sufficient developmental benefits. In 1996 this led to some landowners blocking the airstrip at Bensbach and stopping tourists from entering. The situation was only addressed a year later after mediation by OEC and local government officers and a compensation payment for land at the airstrip.

The presence of the OEC has declined over time. In the late 1970s OEC operated a wildlife research and management station in the area, but since the early 1980s no government officers have been stationed in the Area. At the insistence of landowners, who felt abandoned by the government, OEC recently allocated funds for an officer to be placed at Balamuk. They have also established a wetlands working group that will oversee steps to protect PNG's important wetlands. While communities are eager to have a greater OEC presence in the Park, there is some recognition that their officers can be paternalistic in their approaches. OEC itself is making institutional changes to be more responsive to the needs of their primary client, landholding communities. Local government officers stationed through the area have been very supportive of conservation management, recognizing the development benefits it has brought and the protection of land rights and resources. Elsewhere in PNG, the system of communal ownership has been subject to exploitation by large timber or mining concerns.

Although there is much to build on in the way of traditional institutions, effective community management for conservation and sustainable development is still some way off in the TransFly. The Management Committee meets only rarely, is uncertain of its role, and, due to low levels of education and scientific understanding of conservation biology, has found it difficult to enforce management rules. At a broader level, there has been an absence of regional institutions to deal with larger resource management issues such as invasive species and bushfires. Communities have expressed the need for support to groups such as Management Committees to be able to combine traditional resource management practices with the skills of western conservation management. These issues are now being addressed by a bioregional project involving OEC and WWF called the Community Land Care project. This seeks to address the declining management framework of Tonda Wildlife Management Area through capacity building in conservation management and eco-enterprises, and to link it more solidly to regional development planning. Recognizing that the threats being faced by the region cannot be addressed entirely within political boundaries, the project also hopes to establish a 1.2 million hectare cross-border conservation area incorporating the Tonda Wildlife Management Area with Wasur National Park in Irian Jaya, Indonesia.

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16. Peru

Case study area: El Balsar de Huanchaco
Wetland type: Artificial coastal wetland, constructed 1,500 years ago
Stakeholders: Indigenous fishermen, local authorities, government agencies, conservation NGOs and university researchers
Conservation issues: Urbanisation, tourism development

The wetlands of El Balsar de Huanchaco consist of man-made *pozas*, or depressions, that fill from natural spring water but are slightly brackish owing to their coastal location. These *pozas* are used for growing a type of reed called *la tortora* (*Scirpus californicus*), used for construction of small fishing boats. The practice of growing reeds in this area is some 2,000 years old. Other values of the wetlands include tourism (mainly local and national, but also international) and their use as a resting area for migratory birds.

The major threat to the wetland is from urbanisation and tourism development along the coast. People are building second homes in the area, which is only 20 minutes from Trujillo, a regional capital. This circumscribes the wetland and affects the potential to build new *pozas*. In 1992, the regional government declared El Balsar de Huanchaco a regional protected area, which forbids any activities that would have a negative impact on the health of the wetlands. This same legislation gives the local inhabitants (through the fisherman's association) absolute control of the land and its resources.

The indigenous people (descendants of the Moche-Chimú) who own and manage the wetlands today are organized in an artisanal fisherman's association. The association has an executive council, including President, Secretary and Treasurer, who are elected for 2-year periods by association members. El Balsar currently has a management plan that is in the process of being legally adopted by the Provincial Council of Trujillo. It was elaborated with the support of WWF and in collaboration with an oversight committee composed of representatives from government offices and NGOs, including the Provincial Council of Trujillo, the District Council of Huanchaco, the Fisherman's Association, two NGOs working in the area, the University of Trujillo, WWF-Peru, Pronaturaleza, and the National Wetlands Program (a governmental and non-governmental research and action programme). The Plan was elaborated through a smaller planning committee, a member of which reports to the oversight committee.

A variety of activities is conducted, both for the creation of new *pozas* and the maintenance of old ones. These are mainly conducted at the household level rather than collectively. In addition, the National Wetlands Program has worked with the local people to demarcate the area, plant forests around the perimeter, and to conduct research. Overall, El Balsar is an example of sustainable use of wetlands resources. It is a good example of a traditional use of wetlands that has been maintained and even encouraged through government action and the collaboration of NGO partners. The local government has an incentive to maintain the wetlands owing to their unique ecological character and their tourism potential. Therefore, land-use planning is being put into place to ensure that the wetlands will be maintained despite growing pressure for real estate development.

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17. Russia

Case study area: Dubna "Homeland of the Crane"
Wetland type: Moss bogs, swamps and peatlands
Stakeholders: Collective farms, foresters, peat mines, government agencies, local authorities, conservation NGOs, research institutions, a hunting association
Conservation issues: Peat mining, water extraction for Moscow, housing development

The Dubna wetland and the surrounding area, called the "Homeland of the Crane", covers 40,000 hectares in the northern part of the Moscow region, Russia. Located in the southern part of the upper Volga lowland of the Russian plain, it is in the temperate continental climatic zone. Botanically, the area contains a complex of older-birch swamps, raised pine-moss and transitional bogs, mixed coniferous forests and farmlands. The major ecosystem products, functions, and attributes of the Dubna wetland include water quality enhancement; water retention and regulation of hydrological regime; wildlife habitat; migratory bird flyway; and berry production. Osprey, great spotted eagle, azure tit, merlin, curlew, beaver, bear, elk, and lynx inhabit the Dubna wetland. It is also of great importance for the European crane as a breeding ground and autumn gathering place in Central European Russia.

The Dubna lowland includes 20,500 hectares of preserved wetland which form part of eight protected areas or sanctuaries (*zakazniks*). This means that the land is in state ownership, and land and resource use are strictly limited or prohibited altogether. Specifically, woodcutting and hunting are prohibited. Just outside the sanctuaries there are several land-users, including forestry units and collective farms, peat mining enterprises, and hunting associations. All these land-users have agreed to restrict their use rights at the time when a given sanctuary was established, in a negotiation procedure with governmental conservation authorities.

The area is predominately rural. The largest settlement here is Taldom, a town of 30,000 people. A number of villages of a few hundred people surround the wetland. Population density has decreased this century. In the vicinity of the wetland, the population density fell by more than 50% in 200 years, from 54.8 people per square kilometre in 1774 to 22.4 people per square kilometre in 1996. The major source of livelihood for local people is corn and vegetable growing and cattle farming; incomes are generally low (approx. US$100 /month). Apart from the ecosystem services the wetland provides, local people collect food (cranberries, mushrooms) and medicinal plants, and use the area for recreation. The peat mining industry, wood, and silt have been the major economic value for other stakeholders. Most other local people are not dependent on the wetland resource for livelihoods. There is significant out-migration of younger people to urban areas, and seasonally there is an inflow of people into the area for summer vacations.

The main conservation threat is a planned project for ground water pumping to supply Moscow. As a recent EIA shows, if this project moves forward, it would significantly change the hydrological regime in the area. Certain threats could also be expected as tourism develops in the area. There are also some negative and positive consequences of land-use practices on adjacent lands. On the negative side, the drainage of neighbouring farmland and use of mineral fertilisers affects the edge plant communities, and pollution of surface and ground

water has been noted in the vicinity of cowsheds. On the positive side, many animals inhabiting the wetland are attracted by the good feeding conditions in the large cropland area adjacent to the wetland. This is favourable for granivorous birds and birds of prey feeding on mice.

Community involvement in wetland management started in 1978-1979, as a part of conservation measures for Dubna developed by the Druzhina (a student nature conservation group at Moscow State University and the oldest Russian environmental NGO, founded in 1960). The main objective was preservation of the wetland, and local community involvement was a vehicle to achieve conservation aims. The new stage of involvement of local communities began in 1994 with the special international project of the International Crane Foundation, Community Conservation Consultants and Druzhina. After the collapse of the Soviet Union, the current political system in Russia is a parliamentary democracy with emphasis on direct citizen participation. Towns and villages have a degree of autonomy from the national government with the establishment of municipal authorities. Local authorities, selected by local people, cooperate with representatives of the national government.

The concept of involving local communities in land management is relatively new in Russia. It is not yet used by most government authorities/agencies charged with conservation and management, and there are no specifically designed policies and government projects at the national level. Nevertheless, some positive steps in the process of involvement are made by local governments in partnership with government agencies and NGOs as a part of conservation work for certain important natural areas. The "Homeland of the Crane" is an example of such work.

There was an attempt by NGOs to develop a management plan for the area in 1995. It was carried out by an international working group including Druzhina, Biodiversity Conservation Center, and the Community Conservation Consultants. The group was not actively supported by authorities or other major stakeholders, and the attempt revealed the absence of bodies that could be responsible for implementation, monitoring, and evaluation of the plan. Therefore, an up-to-date management planning exercise has not been completed.

In most cases the initiative and awareness-raising activities to stop harmful projects came from Moscow-based NGOs, and sometimes these were supported by regional and district authorities. Other activities in the area, such as meetings with the authorities, international meetings, visits by outsiders, articles in the local newspaper, lectures at schools have changed the attitude of the local people towards the wetland and its cranes. People who took the wetlands for granted are coming to understand the importance of the area and value its natural heritage. The achievements over the last few years (a Crane Exhibit, a Crane Festival, a guidebook entitled *Homeland of the Crane: Stories about Nature and People*, etc.) were made with the participation of local people. With their improved ecological knowledge, it is expected that this assistance and involvement will grow.

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18. Scotland

Case study area: Coastal Firths in Scotland (Moray, Cromarty, Forth, and Solway Firths)
Wetland type: Estuary, mudflats and saltmarshes
Stakeholders: Local residents, commercial/industrial interests, local authorities, government agencies
Conservation issues: Pollution, intensive recreational uses

Firths are marine and coastal wetlands including large estuaries, sea areas and coastal hinterland. Firth is a Norse word meaning "arm of the sea". It refers to a sheltered sea area and estuary of a river, such as the Firth of Forth, or the sea surrounding a coastal district such as the Solway, Moray, and Cromarty Firths. They are transition zones where water changes from salty to fresh with a complex mosaic of different habitats, from huge expanses of mudflats and saltmarsh in the estuaries to sand dunes, beaches, rocky shores and cliffs at their outer edge. Firths contain some of Scotland's most valuable and unique natural sites. The landscapes, habitats and species compete with a large number of economic and recreational human activities, and firths tend to have a strong community culture resulting from the historical links and dependence of local people on the sea.

Scotland's long coastline is highly diverse. Its environmental, cultural and economic importance arises from both the large sections which are wild and undeveloped and the areas which are urban and industrial. In the firths particularly, the pressures of development, transport, fisheries, agriculture, aquaculture, aggregate extraction, power generation, recreation and leisure have caused major incremental loss of the natural habitats and species over recent decades. In common with coastlines in many countries, planning and management of firths is sectoral or locally based, by a diverse array of statutory bodies. It tends to be uncoordinated, without the communication between agencies required to ensure that a clear overall plan is followed, and with no overview of the extent to which resources are utilised or exploited across the whole site. Furthermore, the various activities in the marine areas are controlled by a wide variety of legislation, all this making coordinated and integrated decision-making a difficult process.

In response to the growing awareness of the need for better management, the Focus on Firths initiative was set up in 1992 by the UK government nature conservation agency, Scottish Natural Heritage, to promote and coordinate Integrated Coastal Management of these areas. Focus on Firths is designed to promote the wise and sustainable use of these systems. It aims to:

- secure integrated management strategies for the Solway, Forth and Moray firths and other significant firths by facilitating consensus and cooperation among all users and statutory authorities; and
- increase appreciation and understanding of the vital importance of the natural heritage of firths, through information collation and dissemination, the production of educational and interpretative materials, and the promotion of community involvement and local ownership.

Separate Integrated Coastal Management projects have been set up for each firth, each managed by a cross-sectoral, non-statutory partnership or "forum." Individual local people can and do participate in firths projects, projecting their own interests and concerns as well as those of their neighbours and the local community into the management planning process. In the UK. however, there are so many statutory controls and sectoral mechanisms in place that, inevitably, an integrated management initiative tends to become dominated by organizations and bodies, each contributing its statutory role or sectoral interest. Nevertheless, the organizations themselves are often staffed by local people with local community interests and concerns. Firth Fora are, therefore, an effective mechanism for community involvement, although the type of involvement is different from sites which have a much less developed administrative framework.

The non-statutory nature of the Firth Fora has been raised as their weakness because of the lack of actual authority to implement policies and recommendations. Voluntary agreements may be highly effective in circumstances where consensus can be obtained, but it is argued that without effective policing, they are unlikely to be respected by users of the site when conflicts arise. Others dismiss them as environmental lobby groups. Nevertheless, non-statutory Integrated Coastal Management, which relies on the voluntary support of partners, has the potential to put in place a process to guarantee the longer term sustainability of wetland sites. Statutory instruments can only protect to the extent of the regulation: they create an attitude amongst users of testing the regulations to their limits and are expensive to create and police.

The strength of a voluntary approach lies in the partners who, having seen the importance of the initiative, begin to invest their time and energy for sustainable management of the firths. Among stakeholders present in most Firth Fora are representatives of local government councils, the Ministry of Defence, regional tourist boards, harbour authorities, local fishing associations, local recreation bodies, Scottish Crofters Union (of small farmers), Scottish Landowners Federation (agriculture and forestry interests), conservation NGOs, Scottish Natural Heritage and the Scottish Environmental Protection Agency (both government agencies). Thus the influence which a coastal forum can exert may be very strong by virtue of the statutory remit of the organizations represented and the backing of the local community. The attendance of all sectors gives the resulting policies and recommendations a strong credibility, and recommendations can reasonably be expected to influence the policies and programmes of the statutory bodies managing the firths.

In the early years, firth projects have had varying levels of success in generating funding from other partners. Each forum is initially constituted as an unincorporated association, membership is informal and resources are provided unevenly by a few member organizations. Fora were initially established with Scottish National Heritage funding (and English Nature for the Solway) of about £40,000 (US$66,000) per project per year over five years. In-kind contributions of staff time have been received from all partner organizations represented on management and topic groups. The unincorporated structure can lead to concern about the forum's independence, making the achievement of consensus more difficult. For example, the Scottish National Heritage sponsorship of firths projects has created a perception amongst some partners that the conservation agenda has a disproportionately high profile.

Effective integrated management proposals must be based on good data if they are to generate broad ownership and consensus among local people. Some collation and analysis of existing data and information is, therefore, required. The firths approach is to use topic groups to analyse and report on a specific area of interest. The collation of these reports then contributes to the development of a targeted review or issues report which addresses the needs of the forum. Each forum typically has a topic group covering the following issues: pollution, natural and cultural heritage, land-use, fisheries, coastal defence, economic development, sport and recreation, tourism, data and research, education and awareness, and community involvement. The groups are cross-sectoral, comprising usually five to ten representatives drawn from various bodies with an interest in the topic. There is inevitably a degree of overlap between the various group reports, but that is eliminated when the reports are amalgamated to develop the management strategy for the firth.

Geographical Information Systems and the World Wide Web provide rapidly expanding opportunities to achieve much improved data collation, analysis and collaborative data exchange between partners. The data management systems are created with the flexibility to address future environmental issues and conflicts as they arise. The Internet provides opportunities for information exchange and communication with the wider forum. The Forth Estuary Forum has set up its own web site and is exploring the potential for communication and data exchange between partners. Firth projects have also placed strong emphasis on formal and informal education to raise awareness amongst local people about the environmental importance of the firth wetlands.

A major factor in the delivery of the objectives of the project will be the success of the partnership approach in resolving conflicts. The extent to which resources are provided by partners will affect the speed and quality with which management proposals are developed. Similarly, the enthusiasm and commitment to the projects by partner organizations will strongly influence the effectiveness of the implemented management proposals. Although voluntary compliance will be the principle mechanism for implementation of management proposals, there will also be requirements for further legislation at local or national level. The effectiveness and progress of such legislation will significantly influence the success of firth projects. There can still be pressure to pursue a more traditional "designation" approach to site protection, for example through Sites of Special Scientific Interest or protected areas. This approach is required in some areas where there is particular interest but is somewhat contrary to the Integrated Coastal Management approach, which seeks an accommodation of environmental, economic and cultural interests.

As of May 1999, management strategies were completed and agreed by partners for the Solway, Forth, Moray and Cromarty Firths. The projects have already achieved enhanced ownership and involvement by local communities in the management of their local coastal area. The strategies are generally divided into ten sections according to the topic groups which reported earlier in the process. They contain actions, usually with a lead organization identified as responsible for taking forward each action.

The projects are now developing structures and resources to implement the actions in the strategies. The Moray and Cromarty Firths have European Union funding towards the early years of implementation.

There will be a short and longer-term testing of the effectiveness of Firth Integrated Coastal Management projects. In the short term, their success will be dependent on the extent to which partners are willing to contribute resources to the delivery of the actions. In the longer term, the success of firths projects will be judged by the degree of sustainable use and development in these coastal areas and the protection they provide to threatened environments. Local communities have responded enthusiastically and participated fully in all consultations. It is crucial that projects move into effective implementation which includes continuing dialogue with local people. If they are not able to deliver on this, it is likely that the initial enthusiasm will turn to scepticism and the future of community involvement may be in jeopardy.

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19. Senegal

Case study area: Djoudj National Park, St. Louis Region
Wetland type: Delta
Stakeholders: Local villagers of different ethnic groups, rice farmers, hunters, researchers, government parks department, and conservation NGO (IUCN)
Conservation issues: A salt water intrusion dam is blocking salt water from its natural migration into the Park during the dry season; infestations of water weeds; some illicit hunting

Description

The National Bird Park of Djoudj was created in 1971, and is located entirely in the deltaic ecosystem of the Senegal River Valley. The initial creation of the Park saw the expulsion of a number of villages, some of which are now relocated on its periphery. This naturally engendered conflict, as the communities were deprived of access to the area that they had traditionally used for resource gathering, herding, and agriculture as well as to their sites of worship and their cemeteries. From the time of the creation of the Park in 1971 until 1994, the government and Park administrators attempted to enforce an exclusionary policy in which all activities within the Park's boundaries were deemed illegal. In 1994, a new policy was adopted with the assistance of IUCN, one which aimed to regenerate natural resources in the impoverished areas, define the rights of usage, and place a value on local knowledge and uses of the ecosystems. Collaborative management plans have been developed for resources within the Park, and small credit, water provision, and other eco-development activities have been established for communities surrounding the Park.

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20. Slovak Republic

Case study area: Morava River Floodplains, Western Slovakia
Wetland type: Oxbows, wet meadows, etc.
Stakeholders: Farmers, recreational hunters and fishermen, and conservation NGO (DAPHNE Foundation)
Conservation issues: Decline in farming is leading to a conversion of wet meadows to forest; water pollution

Description

The Morava River Floodplains are located in the most western part of Slovakia. The most valuable ecosystems are the floodplain's species-rich meadows. They make up the largest complex of alliance *Cnidion venosi* meadow communities in Central Europe, and are an important source of food and nesting places for rare and endangered bird species. The principal threats are an intensification of agriculture, river regulation, drainage and other destructive activities such as gravel mining. A project run by the DAPHNE Center for Applied Ecology is seeking to rehabilitate 150 hectares of arable or abandoned land in the floodplain to species-rich meadows, and to sustainably manage 1,000 hectares of degraded meadows by direct subsidies to farmers. In the context of this project, a detailed management plan for meadows is being prepared, a monitoring system for revitalization is being introduced, and a system for financial incentive measures is being designed.

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21. Solomon Islands

Case study area: Lake Tegano, East Rennell Island
Wetland type: Brackish lake on coral atholl
Stakeholders: Indigenous people, government natural resource agency, World Heritage Convention
Conservation issues: The lagoon is in good condition; potential threat due to sea level rise and invasive species

Description

The island of Rennell is a forest covered, coral atoll approximately 180 kilometres to the south of Guadalcanal, the main island in the Solomons Group. Lake Tegano, a World Heritage site in the eastern part of the island, is the largest lake

in the South Pacific (excluding New Zealand and Australia). The ecosystem is generally in good condition owing to low population density (only 1,500 people inhabit this island of 155 square kilometres) and its geographic isolation. Land is under customary ownership, and the resources of Lake Tegano are common property to the people from the four lakeside villages. The customary land and reef ownership system involves rights of resource use by family groups in specified areas. Participatory Rural Appraisals were conducted in the lakeside villages to assess present resource use and traditional management systems, and a resource management plan is being developed by the World Heritage/ Ecotourism Programme with input from the resource owners.

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22. Tanzania

Case study area: Tanga Region
Wetland type: Coral reefs, seagrass beds, estuaries, sand flats and mangroves
Stakeholders: Artisanal fishermen, commercial fishermen and government agencies
Conservation issues: Dynamite fishing, mangrove cutting, use of drag nets

Tanga is the most northern coastal administrative region in Tanzania, extending approximately 180 kilometres south from the border with Kenya. The area contains marine waters, subtidal aquatic beds, coral reefs, rocky and sandy shore lines, estuaries, intertidal sand flats and marshes, and mangroves. These habitats provide a buffer to erosion, centres for productivity and diversity, feeding and resting areas for marine and terrestrial species (especially migratory birds). The ecosystem is extremely important for maintaining the high levels of diversity found in the area as well as providing the main protein and income sources for local people.

The main human impact on the environment has been physical degradation from the use of dynamite on coral reefs, cutting of mangroves and the use of drag nets over seagrass beds. Over-use of areas is a common problem. Reefs in the northern section of the region, adjacent to the high population centres, are heavily overfished. Currently, tourism and recreational use is minimal and does not pose a threat. Local communities also face an increasing problem of beach erosion which causes property loss and may be related to the degradation of reefs. Future threats to the human-environment relationship include increased erosion and the rising need for food and income generated by a high rate of population increase compared with economic development. This is exacerbated by the lack of alternative income sources.

Infrastructure in the area is poorly developed and the potential for future development is limited through lack of funds. Artisanal fishing is by far the most important economic activity for locals, involving 70-80% of the adult male

population of some of the more rural villages. Agriculture and small-scale trading are the other most important occupations on the coast while a significant number of people are involved in boat building, house building, salt boiling, lime burning, charcoal making, mangrove pole cutting, seaweed farming, bicycle transport, labouring, livestock, palm tapping, and traditional medicine. The commercial interests of the coast include trawling, trading and exporting of fish and other marine products. People involved in each of these sets of activities make up the principal stakeholders, with the fishermen being the most important.

Before the advent of IUCN's Tanga Conservation and Development Programme in 1994, the government was the sole decision-making body. With the facilitation of the programme, collaborative management systems have been established for a number of resources in several areas. The problems with the solely government system were that decisions were rarely made, and, when they were made, they were hardly implemented. Before independence in 1962 there were few government regulations on resource exploitation. Local communities were very much left to themselves, and there was no traditional or indigenous management of resources. The community members themselves explained that, given plentiful resources and low population densities, there was little need for management systems.

The stakeholders in the Tanga coastal region are government agencies and the users mentioned above. Natural resources provide food and income for the stakeholders. Before the management agreements were formulated, only the government had legal jurisdiction over the use of resources. Customary use rights were not formally recognized. It was only with the enactment of the Marine Parks and Reserves Act of 1994 that the rights of communities in marine parks and reserves were explicitly acknowledged. In recent years, the government has recognized the need for community involvement, but implementation is not always effective.

The process started with the holding of workshops with villagers and government personnel to identify critical issues; the undertaking of participatory socio-economic and coral reef surveys; and a study on existing traditional management practices. Workshops held with the villagers of both Kigombe and Kipumbwi identified the major issues affecting them, their perceived causes and suggested solutions. The principal problems included illegal fishing techniques, destruction of coral reefs, commercial trawlers fishing close to the coast, and overfishing. The proposed solutions included restricting the use of illegal techniques, closing certain areas to fishing, development of alternative incomes, and increasing the mesh size of nets.

The villagers formed committees to take actions to deal with fisheries-related issues, especially the enforcement of regulations. These committees became the focal point for planning and implementation of agreed actions. A study conducted by the Programme has shown that this committee is representative of the stakeholder groups. District personnel (Natural Resources Officer, Fisheries Officer and Community Development staff) and Programme staff provided technical assistance to the village committees.

Programme staff facilitated a number of meetings in which users defined the area in which management actions would be implemented and village management committees developed the principles of management to be applied. The management committees defined how rules would be enforced, what the

penalties for non-compliance would be, and what training was necessary for effective enforcement. In addition, the committees identified who should be informed of the new management plan and how, and they defined a programme for monitoring and review. The plan was presented in all concerned villages, and they confirmed their support for it by signing written agreements.

The overall management strategy is one that can be best described as "adaptive management". This type of management strategy attempts to address the priority issues, monitors and evaluates the actions taken, and adapts future measures to meet the outcome of the evaluation. There has been progress made in stopping illegal techniques, with the incidences of illegal fishing having dropped to about 2% of former levels. Fish catches per fisher have also increased by about 10%. Reef closures have now been gazetted, attracting devices are being deployed, and agreements for net exchanges formulated, but their impact is still unknown. Participation has enhanced conservation of the area by facilitating the closure of some reefs and effective enforcement of laws, rules and regulations. This approach has been successful in bringing agreement between government and users as to what should happen and who should do it. There are still problems between parties regarding the pace of implementation. Villagers' expectations of government are too high, and some government officers outside of the Programme remain sceptical about the ability of the villagers to undertake their allocated activities.

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23. United States of America

Case study area: Caddo Lake, Texas and Louisiana border region
Wetland type: Cypress swamp, lake
Stakeholders: Local inhabitants, recreational fishermen, government agencies, local NGOs, and educational institutions
Conservation issues: Eutrophication, nutrient recycling, mercury and metals in fish and sediments, air and water-borne acid, nutrient and toxic metal pollution, oil and gas well spillage, invasive species, upstream hydrological manipulation, private shoreline development and large scale public water development projects.

The Caddo Lake Ramsar wetlands are part of a large, shallow wetland complex which sprawls across the Texas-Louisiana border in the south central region of the United States. Located in the Mississippi flyway, Caddo Lake's wetlands provide important habitat for wintering migratory waterfowl and neotropical birds which winter in Central and South America and the Caribbean. These wetlands are recognized as a unique assemblage of moss-dominated cypress swamp communities. They contain a rich diversity of plants and animals, including species which are rare, endangered or of special concern to state and federal governments and the conservation community generally.

Like much of the developed world, original indigenous populations have been extirpated or relocated, and no longer occupy ancestral areas at Caddo Lake. Today, few local people rely on these wetlands for their subsistence; most local people are employed in urban, industrial or agricultural activities. Significant populations are employed by, or otherwise engaged with, local educational institutions, or are retired. Few local people have the need or opportunity to use these wetlands, or to become familiar with their ecological values and functions, with the exception of the relatively small numbers who are involved in boating, hunting and fishing, or the government agencies which manage these activities.

The Texas-Louisiana border region is rural in nature, interspersed with small cities and settlements. It has good public and private infrastructure, but the region is considered underdeveloped by some of its residents and community leaders. The communities in and around the wetlands use the ecosystem for sports fishing, hunting, tourism, forestry and agriculture. The regional economy is dominated by oil, gas, coal and timber production, industrial-style agriculture (agribusiness) such as chicken production and processing. The ecosystem, while generally healthy, demonstrates symptoms of stress attributed to impacts of present land-use patterns and modest human populations. Caddo Lake is located 180 kilometres east of the Dallas/Ft. Worth, Texas metropolitan area, a rapidly growing population centre which already exceeds four million people. Regulations which limit private or commercial "private property rights" are culturally and politically resisted. Local regulation of land-use is limited or non-existent. State and federal regulation of suspected water pollution sources, such as agribusiness runoff and discharges and industrial air emissions of potential acid, nutrient and toxic metals, is permissive and highly politicised.

Several aquatic macrophytes are considered nuisance plants or invasive species at Caddo Lake. These plants obstruct navigation, contribute to high nutrient loading, cause low dissolved oxygen levels and accelerate eutrophication of the lake, all of which are believed to jeopardise its water quality and value as a sport fishery habitat. Management of invasive species is usually controversial: current examples include debates concerning the use of the herbicide 2,4-D and proposals to introduce sterilised grass carp, a non-native species, to control certain aquatic plants.

Most of the land around Caddo Lake is privately owned, in hundreds of small and large parcels. The strong "private property rights" culture in Texas resists both state and federal land-use restraints. Commercial interests, which resist governmental regulation, are well represented at state and local government levels. Large public ownership does exist, and more than 6,000 hectares of public and private lands at Caddo Lake have been designated or nominated as Ramsar sites. However, this is a small proportion of what is available for development.

The management of the Caddo Lake wetlands and their catchment basin is highly fragmented among different government agencies. Due to its location in two states and its status as a navigable water body of the United States, Caddo Lake's management falls under three authorities: the US federal government and the state governments of Texas and Louisiana. Each of these governments exercises a confusing number of limited-purpose management roles which are divided among several agencies of each government. The principal federal agency involved in hydrological management is the US Army Corps of Engineers (the Corps), which also has primary wetland conservation duties. Known for its

large-scale engineering works through the Mississippi valley, the Corps' periodic proposals for engineering projects in Caddo Lake and its catchment are sources of local concern. The Corps was responsible for construction and management of the dam and spillway on Caddo Lake that maintain present water levels, as well as upstream dams and reservoirs which manipulate inflows.

The US Environmental Protection Agency has regulatory authority over wetland protection and is responsible for issues related to water quality, toxic substances, and contaminants. US Fish and Wildlife Service (USFWS) and other federal agencies have limited programme-based interests in the wetland habitats and flyways of Caddo Lake. Under federal legislation, USFWS must be consulted for advisory opinions whenever federal land disposals or federally financed water development projects are proposed. The agencies which have the most consistent engagement with the lake and its wetlands are the state agencies of Texas and Louisiana. However, the stewardship roles of these agencies are constrained by their limited missions, e.g., management of wildlife, environmental protection, water development, or natural resource extraction.

Until recent times involvement of local citizens in management decision-making has been limited due to the lack of appropriate mechanisms and a cultural resistance to government management that might interfere with historic private uses. Out of concern for the lake and its biodiversity, Don Henley, a noted American musician and native of the region, established the Caddo Lake Institute in 1993, with the goal of protecting and enhancing the biological and cultural resources of the Caddo Lake eco-region. The Institute enlists the energy and support of environmental science professors at universities and colleges in the region to undertake a variety of ecosystem stewardship projects. It pays for the extra-mural services of these part-time "staff members" through a marginal cost compensation strategy, thereby mustering considerable experience for stewardship activities at the lowest possible cost.

Together with student interns, the scientists carry out a wide array of wetland education, management and monitoring tasks. Since 1998 they have assumed leading roles in designing and gathering data for Texas agency monitoring programmes, which will directly influence water pollution permitting decisions in Caddo Lake's 7,250 kilometre square catchment area.

Other academicians and teachers from regional educational institutions participate in specialised training which permits them to execute wetland science "campus plans" at their respective institutions. These plans usually include maintaining a part of the Institute's state-approved volunteer water monitoring network, which has collected sampling data monthly for over three years throughout the catchment. Other educational elements include specialised teacher training programmes and curricula for grade levels K-12 in eight local school districts, as well as advanced natural science curricula in four local colleges and universities.

On the international level, the Institute has been recognized for its innovative strategies in bringing guidance, following Ramsar principles, to the local level, by the use of monitoring and education initiatives in the US and "twinning" projects with other educators abroad. It was instrumental in the 1996 designation, and 1998 enlargement, of the Caddo Lake Ramsar wetland site. The Institute joined in the US Government's Brisbane Pledge to the 1996 Conference of the Contracting Parties to the Ramsar Convention, by agreeing to initiate the first US Regional

Ramsar Centre and an academy of wetland science education at Caddo Lake. It is actively assisting USFWS in the creation of a new National Wildlife Refuge, to include Brisbane Ramsar pledge facilities, at the 3,400 hectare surplus Longhorn Army facility. The Institute has also provided key support to the development of the project in response to Ramsar Recommendation 6.3.

Several obstacles to sustainable management of Caddo Lake still remain to be addressed, including partisan political and agency conflicts; cultural and commercial resistance to regulation of private activities; *ad hoc* and uncoordinated decision-making by limited purpose agencies; economically and politically powerful special interests which emphasise short-term resource exploitation; the tendency of local education and academic scientists to avoid involvement in policy debates that might provoke criticism of them or their institutions; and local abdication of decision-making to more remote government agencies and special interests. The Institute continues to work to address these issues in a coordinated manner through its Brisbane Pledge fulfilment activities; by expanding the ecosystem expertise and regulatory participation of its local academic scientists and thus expanding the stewardship missions of their educational institutions.

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Relevant Resolutions

Resolution VII.8

(adopted by the 7th Conference of the Contracting Parties, San José, Costa Rica, 1999)

Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands

1. RECALLING the *Guidelines for the implementation of the wise use concept* (Recommendation 4.10) and the *Additional guidance for the implementation of the wise use concept* (Resolution 5.6), which seek to encourage the involvement of local communities in the development of management plans for Ramsar sites and decision-making processes related to the wise use of wetlands;

2. AWARE of the relevant paragraphs of Resolution 1.51 of the World Conservation Congress in Montreal in 1996 in relation to indigenous people and the Narashino Statement from the International Wetland Symposium at the Yatsu-Higata Ramsar site in Japan in 1995, which called for active and informed participation by local people and communities in wetland management, and the United Nations Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-making, and Access to Justice in Environmental Matters adopted in Aarhus, Denmark, in June 1998;

3. AWARE of the International Labour Organization's Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries;

4. ALSO AWARE that in many contexts indigenous people and local communities are already involved in managing and using wetlands sustainably, and have long-standing rights, ancestral values, and traditional knowledge and institutions associated with their use of wetlands;

5. FURTHER RECALLING Recommendation 6.3 which in particular called on the Ramsar Bureau, in consultation with the World Wide Fund for Nature (WWF), the Kushiro International Wetlands Centre, the Caddo Lake Institute, IUCN - World Conservation Union, Contracting Parties, and other relevant NGOs, to evaluate the benefits of involving local and indigenous people in the management of wetlands and produce for consideration at this Conference guidelines on how the participatory approach can advance the adoption and application of the wise use principle of the Convention;

6. ACKNOWLEDGING that Operational Objective 2.7 from the Convention's Strategic Plan 1997-2002 describes actions intended to "*encourage active and informed participation of local communities, including indigenous people, and in particular women, in the conservation and wise use of wetlands*", including implementation of Recommendation 6.3;

7. NOTING that the case studies documented and analysed in preparing the Guidelines on how to implement the participatory approach have revealed that involving local stakeholders can accelerate the move towards achieving the Ramsar goal of wise use of wetlands in accordance with Article 3.1 of the Convention, when such participation is pursued within the full framework of actions encouraged by the Convention, and that the lessons learned from these case studies can assist Parties and others in fostering participatory approaches that avoid the mistakes encountered by others;

8. FURTHER NOTING that the theme of the 7th Meeting of the Conference of the Contracting Parties is *Wetlands and People - the vital link* and that Technical Session III of this Conference examined in detail the tools and mechanisms for promoting the involvement of local and indigenous people in wetland management;

9. ALSO NOTING that Technical Session III of this Conference considered and discussed the draft document prepared by IUCN - World Conservation Union, with the support of the Kushiro International Wetlands Centre, the Caddo Lake Institute, the World Wide Fund for Nature (WWF), and the Ramsar Bureau entitled *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands*; and

10. THANKING the Governments of Australia, Switzerland, and the United Kingdom for their financial support for the development of the draft Guidelines and the associated case studies;

THE CONFERENCE OF THE CONTRACTING PARTIES

11. ADOPTS the *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands* contained in the Annex to the present Resolution as further guidance to the Contracting Parties in the implementation of the wise use concept of the Convention and the Convention generally;

12. CALLS UPON Contracting Parties to apply these Guidelines so as to encourage active and informed participation, and the assumption of responsibility, by local communities and indigenous people in the management of Ramsar-listed sites and other wetlands and the implementation of the wise use principles at the local, watershed, and national levels;

13. FURTHER CALLS UPON Contracting Parties, when applying the Guidelines annexed to this Resolution, to give priority and special attention to involving women, youth and their representative organizations wherever and whenever possible;

14. URGES Contracting Parties to include extensive consultation with local communities and indigenous people in the formulation of national wetland policies and legislation and to ensure that these instruments, when introduced, include mechanisms consistent with the Annex to this Resolution, for actively engaging and involving the general community with implementation;

15. FURTHER URGES the Contracting Parties to create, as appropriate, the legal and policy context to facilitate indigenous people's and local communities' direct involvement in national and local decision-making for the sustainable use of wetlands, including the provision of necessary resources;

16. INVITES Contracting Parties to ensure that the stakeholders, including local communities and indigenous people, are represented on National Ramsar Committees or similar bodies, and that, where possible, these non-government stakeholders are represented in the national delegations to future meetings of the Conference of the Contracting Parties;

17. ENCOURAGES Contracting Parties to provide for transparency in decision-making with respect to wetlands and their conservation and ensure that there is full sharing with the stakeholders of technical and other information related to the selection of Ramsar sites and management of all wetlands, with guarantees of their full participation in the process;

18. FURTHER ENCOURAGES Contracting Parties, technical experts, and local and indigenous people to work together in the planning and management of wetlands to ensure that the best available science and local knowledge are taken into consideration in making decisions;

19. REQUESTS Contracting Parties to give priority to capacity building for the implementation of participatory approaches with special attention being given to the training of government administrators and local people in facilitation techniques, consultative processes, cultural sensitivity, and the application of the Ramsar Wise Use Guidelines;

20. INVITES Contracting Parties to seek, as appropriate, the involvement and assistance of indigenous people's and community-based groups, wetland education centres and non-governmental organizations with the necessary expertise to facilitate the establishment of participatory approaches;

21. REQUESTS Contracting Parties to recognize that in many cases financial mechanisms and incentives provide a catalyst for fostering participatory processes and should therefore gain priority consideration in efforts to promote the involvement of local communities and indigenous people;

22. URGES the bilateral and multilateral donor agencies supporting wetland conservation and wise use projects, and integrated water resource management projects in general, to take into consideration the Annex to this Resolution and the priorities for action at the national level identified herein;

23. DIRECTS the Ramsar Bureau to establish a clearing house, create a focal point, and liaise with other international organizations, including the secretariats of international conventions, for information exchange related to participatory approaches and indigenous knowledge systems in support of wetland management, and for information on training and other topics likely to be of use by the Parties in implementing this Resolution, as human and financial resources allow;

24. URGES the Ramsar Bureau and partners to further elaborate on these Guidelines by COP9 in the light of new experiences in establishing and strengthening participatory processes

at Ramsar sites and other wetlands, utilizing the experience of International Organization Partners, indigenous people's and community-based groups; and

25. DECIDES that as part of the National Reports to be prepared for COP8, special attention will be given to reporting on significant efforts in implementation of these Guidelines, and in particular on efforts to enhance the extent and effectiveness of involving local communities and indigenous people in wetland management.

Resolution VIII.36

(adopted by the 8th Conference of the Contracting Parties, Valencia, Spain, November 2002)

Participatory Environmental Management (PEM) as a tool for management and wise use of wetlands

1. AWARE that sustainable management of wetlands requires an integrated approach incorporating knowledge from many sources – local and regional, traditional and scientific – for identification and prioritisation of the most important problems and for proposing efficient solutions to those problems;

2. TAKING INTO ACCOUNT that the participation of all sectors in sustainable management of wetlands optimizes human, economic and environmental resources to the point that in many regions it is considered a process that can contribute to reducing poverty and improving the quality of life;

3. RECOGNIZING the close relationship between societies and wetlands and taking into account the importance of these ecosystems in the cultural, ecological, social, political and economic aspects of the life of local inhabitants;

4. RECALLING the *Guidelines for the implementation of the wise use concept* (Recommendation IV.10) and *Additional guidance for the implementation of the wise use concept* (Resolution V.6), which promote participation of local communities and indigenous peoples in the preparation of management plans and in the decision-making process regarding wetlands designated as Ramsar sites;

5. ALSO RECALLING Resolution VII.8, entitled *Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands*;

6. FURTHER RECALLING that the Johannesburg Declaration on Sustainable Development, paragraph 26, recognizes that sustainable development requires broad-based participation in policy formulation, decision-making and implementation at all levels, and that the Plan of Implementation of the World Summit on Sustainable Development, paragraph 128, underscores the importance of ensuring public participation in decision-making, so as to further Principle 10 of the Rio Declaration on Environment and Development;

7. ALSO AWARE of the need to involve many social actors (the public and private sectors, non-governmental organizations and local communities, among others) in the management and sustainable use of wetlands;

8. ALSO RECOGNIZING that strategies of local participation contribute to the implementation of activities that promote sustainable use and exploitation of the natural resources of wetlands;

9. FULLY AWARE that Participatory Environmental Management (PEM) is a learning process that helps improve joint capacities for study and action among all those involved in the conservation of wetlands;

10. ALSO TAKING INTO ACCOUNT that PEM promotes active and full participation of local communities and indigenous peoples in the adoption and application of decisions related to the use and sustainable management of wetlands;

11. RECALLING that Decision IV/4 of COP4 of the Convention on Biological Diversity on status and trends of the biological diversity of inland water ecosystems and options for conservation and sustainable use, Annex I, paragraph 9(e), recommends Parties to involve as far as possible, and as appropriate, local communities and indigenous people in development of management plans and in projects that may affect inland water biological diversity;

12. FURTHER RECOGNIZING that PEM improves communication and exchange of information, contributing to a reduction of environmental conflicts, promoting continuity and sustainability of management activities;

13. FURTHER TAKING INTO ACCOUNT that there are positive experiences of participatory management of wetlands involving local communities, indigenous peoples, the private sector, universities, non-governmental organizations and the public sector that sustainably manage resources within wetlands; and

14. NOTING the experiences and case studies around the world presented at the Third Technical Session of Ramsar COP7 on "Participation at all levels for conservation and wise use of wetlands";

THE CONFERENCE OF THE CONTRACTING PARTIES

15. RECOGNIZES Participatory Environmental Management (PEM) as a useful tool for achieving sustainability in the use and management of wetlands;

16 REQUESTS the Scientific and Technical Review Panel (STRP) to prepare for COP9 methodologies or guidelines for effective implementation of PEM, gathering case studies and taking into account the content of the annex to this resolution;

17 URGES the Contracting Parties to inform COP9 on progress and successful experiences in applying PEM strategies; and

18 ALSO URGES multilateral and bilateral donors to provide financial resources for projects that promote the use of PEM strategies for wetland management.

Regular consultations with stakeholders is an important element of keeping management approaches flexible; a meeting with stakeholders in Niger, 2001. ***Photo: Denis Landenbergue, Anada Tiéga***

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

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Handbook 7

Participatory skills

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