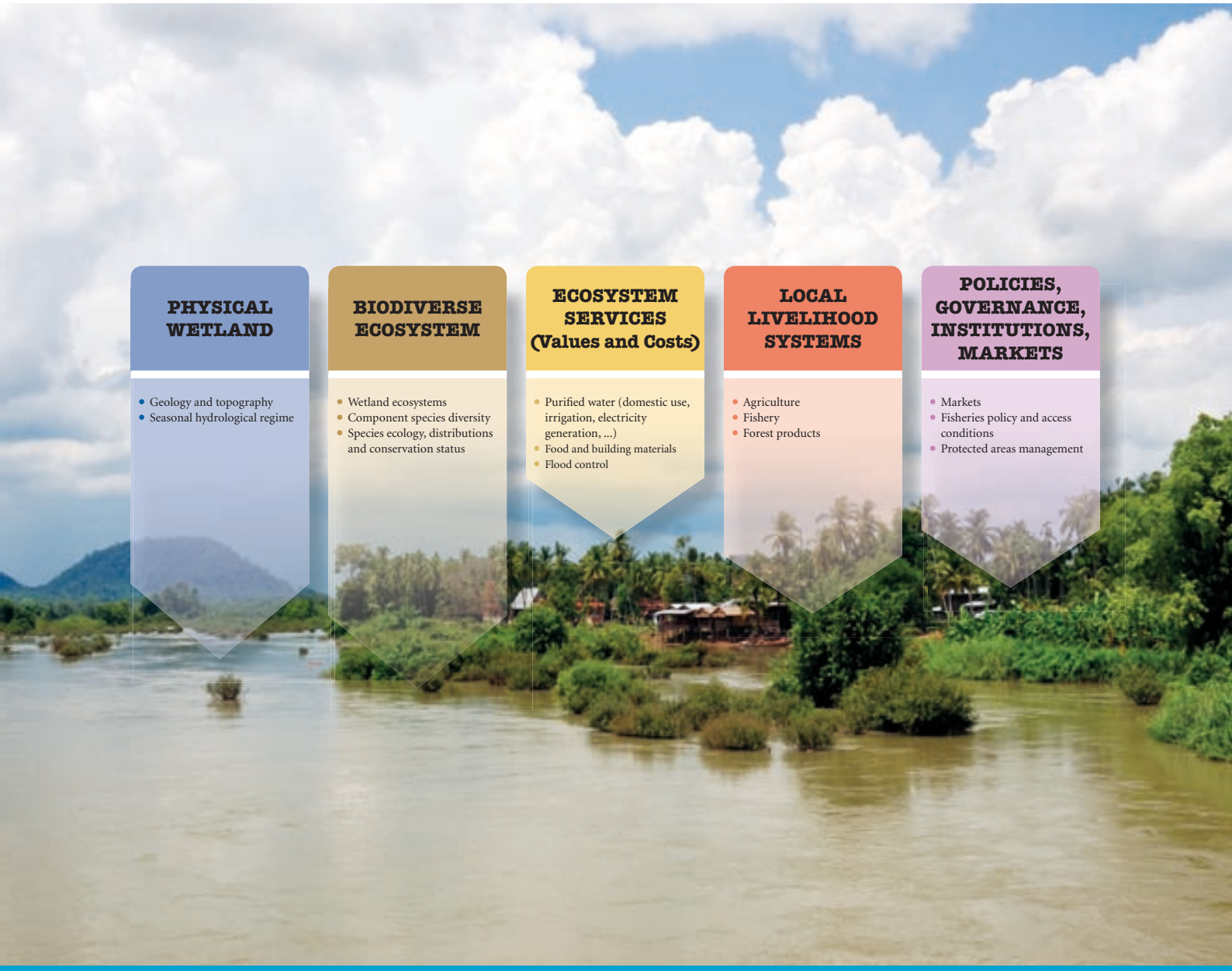
An Integrated Wetland Assessment Toolkit

A guide to good practice

Edited by Oliver Springate-Baginski, David Allen and William Darwall



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Refer to the reports for details of the case study technical report authors.

Mtanza-Msona case study, Tanzania (Chapter 7) http://intranet.iucn.org/webfiles/doc/SpeciesProg/FBU/MtanzaMsona_IWA_TechnicalReport_lowres.pdf

Stung Treng case study, Cambodia (Chapter 8): http://intranet.iucn.org/webfiles/doc/SpeciesProg/FBU/StungTreng_IWA_TechnicalReport_lowrest.pdf

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Stung Treng integrated wetland assessment case study, Cambodia

The study of the Stung Treng Ramsar Site was coordinated by Kong Kim Sreng, the project officer of the IUCN Cambodia Country Office. The project consultants were Alvin Lopez, Mark Dubois and Thuon Try.

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Mtanza-Msona integrated wetland assessment case study, Tanzania

The project partners in Tanzania, under the coordination of the IUCN Tanzania Country Office, were the Rufiji District Council, and the Economic Research Bureau, Institute of Resource Assessment, and Department of Geography of the University of Dar es Salaam.

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The authors

Foreword

For billions of people throughout the world, especially the rural poor, wetlands are critical for livelihoods, providing vital supplies of water, food and materials as well as ecological services. Wetlands are, however, suffering from extreme levels of degradation with estimates putting wetland loss and drainage in some parts of the world at more than 50%. Such a high level of wetland degradation not only results in a tragic loss of the wetland species but is also impacting heavily on those people whose livelihoods depend upon wetlands. There are also significant losses to national and regional economies resulting from the loss of hydrological services, such as flood control and water purification, and of material goods such as those provided through fisheries.

The Ramsar Convention on Wetlands covers all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation and for the well-being of human communities. However, it also recognises that no single approach is currently available to enable people to determine the full value of a wetland in terms of its biodiversity, economic value, and importance to people's livelihoods. An integrated assessment methodology is required to determine the full importance of a wetland. This toolkit provides a process for conducting such a fully integrated assessment of wetlands and thus aims to fill this gap in available methodology and assist those concerned with the Ramsar Convention to identify new Ramsar sites and help ensure the future wise use of wetlands in general.

I therefore commend this toolkit to you and urge all those concerned with the management and conservation of wetland resources, and in securing the wise use of wetlands, to read it and use it in their future work.

Anada Tiéga
Secretary General
The Convention on Wetlands
Ramsar Secretariat
Switzerland

Terms Used

Assessment

"Evaluation, estimation (of the quality, value, or extent of), to gauge or judge"

Oxford English Dictionary 2008

Biodiversity

"the variability among living organisms from all sources including, inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."*

Millennium Ecosystem Assessment (MEA) 2005

The importance of this definition is that it draws attention to the many dimensions of biodiversity. It explicitly recognises that every biota can be characterized by its taxonomic, ecological, and genetic diversity and that the way these dimensions of diversity vary over space and time is a key feature of biodiversity. Thus only a multidimensional assessment of biodiversity can provide insights into the relationship between changes in biodiversity and changes in ecosystem functioning and ecosystem services

Ecosystem services

"the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious, and other nonmaterial benefits."

MEA 2005

This term corresponds with the usage by the Ramsar Convention of the terms "*products, functions and attributes*".

Governance

The patterns of exercise of public power. In terms of watersheds it can relate to allocation exercise and enforcement of rights to ownership, use of and access to resources. It can also involve management practices, policing and adjudication between claims.

Livelihood

"Means of living, maintenance, sustenance; esp. to earn, gain, get, make, seek a livelihood"

Oxford English Dictionary 2008

Public goods

Products and services which benefit society at large. Public goods are 'non-rival' in the sense that one person's consumption does not affect what is left for others, and 'non-excludable' in the sense that no one can be prevented from enjoying the good. Many wetland services are public goods, such as hydrological regulation services.

Ramsar Convention on Wetlands of International Importance

The Convention on Wetlands, signed in Ramsar, Iran in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 158 Contracting Parties to the Convention, with 1,759 wetland sites, totalling 161 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance.

"The Convention's 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"

Ramsar COP8 2002

Values and Valuation

"the relative status of a thing, or the estimate in which it is held, according to its real or supposed worth, usefulness, or importance"

Oxford English Dictionary 2008

Value is the subjective estimation of worth. Different people value things differently for a range of personal reasons. However, in order to compare values — which becomes important when decisions over resource management must be made — value may be estimated in terms of some standard, medium of exchange or monetary value, and valuation methods are used to do this. Note that *value* and *price* are different as price involves a market bargaining and exchange situation.

Wetlands

"areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres"

Article 1.1 of the Ramsar Convention on Wetlands

Wetlands may be further categorised into freshwater and coastal zones.

Wise use of wetlands

"[Wetlands'] sustainable utilisation for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem"

Ramsar COP3 1987

The Ramsar Scientific and Technical Review Panel (STRP) has proposed updating the definition to: "the maintenance of their ecological character within the context of sustainable development, and achieved through the implementation of ecosystem approaches."

Overview

The *need* for an integrated wetland assessment toolkit:

Wetlands contain biodiversity of exceptional conservation significance, comprising many unique ecosystems and a wide array of globally-threatened species. At the same time they typically form essential components of local, national and even regional economies, as well as underpinning the livelihoods of adjacent human communities. Wetland goods and services are often particularly important for poorer and more vulnerable groups, which have limited alternative sources of income and subsistence, and have weak access to basic services.

Despite their importance, wetlands are under increasing pressure. According to the Millennium Ecosystem Assessment (MEA) 2005, the biodiversity of inland waters is in a worse condition than that of any other ecosystem; it is estimated that 50% of inland water area (excluding large lakes) has been lost globally. Wetland degradation and loss poses a severe threat to both development and conservation goals, and impacts disproportionately on some of the world's poorest communities.

Poor consideration of wetlands in decision-making remains one of the major factors leading to their degradation. Management decisions affecting wetlands (for example relating to investment, infrastructure or management of land and water resources) rarely consider the wider biological, ecological, developmental or economic values of wetlands as they are. Therefore the costs of wetland loss and benefits of wetland conservation are underestimated. While development planners commonly neglect the wider impacts of wetland degradation on economic, livelihood and poverty indicators, wetland-managing authorities have rarely been able to demonstrate or act on these links, or to factor poverty and livelihood concerns into on-the-ground conservation activities. Furthermore governance of wetlands has typically not effectively represented the interests of those constituencies depending on the wetlands for the provision of 'public goods', and has typically favoured those motivated to convert wetlands in order to increase private gain.

Methodological and information gaps partly explain the omission of wetland values from investment, land, and resource use decision-making. Although techniques exist, and have long been used, to assess wetland biological, economic and livelihood values and trends separately, there has been a lack of available *integrated* methods to assess the interlinkages and connectivity between wetland condition and economic/livelihood status, or to express this information in a form and with a focus that can inform and influence real-world conservation and development planning.

***What* this toolkit is:**

This toolkit sets out a process for integrated assessment and provides a set of methods that can be used to investigate the links between biodiversity, economics and livelihoods in wetlands, and to identify and address potential conflicts of interest between conservation and development objectives. The integrated approach presented in the toolkit also enables practitioners to assess a wetland in terms of its combined biodiversity, economic and livelihood values. It has a particular focus on strengthening pro-poor approaches to wetland management. It is intended to help overcome the current methodological and information gaps in wetland assessment, thereby facilitating the factoring of wetland values into conservation and development decision-making and management planning. It can be applied to all sorts of wetlands and at all scales. Note that the toolkit is not primarily intended as a village development planning methodology. However it may be adapted to contribute information needed for such a planning process.

***Who* this toolkit is for:**

The toolkit provides a set of practical and policy-relevant methods for information collection which can be used by those involved in wetland conservation and development planning. It is expected to be of use to wetland site managers, environmental impact assessors, conservation and development planners, and researchers from both natural and social science disciplines.

The *contents* of the toolkit:

There are three main sections:

Section I presents the ***integrated assessment process***;
Section II presents the ***tools*** themselves; and
Section III illustrates the application of the toolkit with two ***case studies***.

In more detail, the toolkit provides:

- A **conceptual and methodological framework** for addressing wetland management issues, especially conservation and development trade-offs, through integrating biodiversity, economic valuation and livelihood assessment (Chapter 1).
- **Guidance on conducting an integrated assessment** and **methods** for planning and carrying out an integrated wetland assessment (Chapter 2).

- Tools, methods and techniques for **biodiversity assessment** (Chapter 3), **livelihoods assessment** (Chapter 4), and **economic valuation** (Chapter 5) of wetlands.
- Tools, methods and techniques for presenting integrated wetland assessment data through electronic **mapping** (Chapter 6).
- **Case studies** of the application of integrated wetland assessment in a management context in Stung Treng Ramsar Site, Cambodia and Mtanza-Msona Village, Tanzania (Chapters 7 and 8).
- **References:** key readings are provided at the end of each section and additional references at the end of the toolkit.

Ongoing toolkit development process:

The development of this toolkit should be viewed as an evolving process which will benefit greatly through feedback from practitioners' experiences in its application. Please send any comments or suggestions to iwa_toolkit@iucn.org. We anticipate updating and improving the document in the future as we receive new ideas and as we learn from our own experience in its application. We also hope to improve functionality of the toolkit through developing discrete sections on individual methodologies that will be available for download from the project website www.iucn.org/species/IWAToolkit .

WHAT INTEGRATED ASSESSMENT INVOLVES: A QUICKSTART GUIDE TO USING THE TOOLKIT

Chapter 2 presents the practical details of the process. To summarise, the eleven recommended key steps are:

Preparation and orientation:

1. Identify the wetland and clarify the particular management concerns, objectives or issues to be addressed through the assessment. This process should involve multiple national, regional and local stakeholders as far as possible
2. Form the multi-disciplinary assessment field team and allocate roles and responsibilities
3. Review the current state of knowledge regarding the wetland and the focal issues
4. Identify the information needed, define the specific study questions and take sampling frame decisions
5. Plan integrated data collection according to opportunities and resource constraints

Fieldwork:

6. Pilot the field method to trial and adapt to the tools, and gain familiarity with the objectives and concerns of the other disciplines. Orient the team to integrated working practices and methods. Review plans in the light of experience
7. Conduct the full data collection fieldwork
8. Check and collate the data collected. Ensure that relevant links between data are maintained (such as species names and harvesting locations)

Analysis, presentation and engagement:

9. Conduct a joint analysis of data involving representatives from all parts of the team
10. Use Geographic Information System (GIS)-based mapping tools to present results in spatial form
11. Provide feedback and present findings according to an ongoing policy engagement process