

# WHAT ARE BEST PRACTICES? LESSONS IN PARTICIPATORY MANAGEMENT OF INLAND AND COASTAL WETLANDS

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## ABSTRACT

This review paper provides an introduction to *Strategies for Wise Use of Wetlands: Best Practices in Participatory Management*, which brings together the case studies presented and discussed in Workshop 1 of the 2<sup>nd</sup> International Conference on Wetlands and Development, held in November 1998 in Dakar, Senegal. Eight co-management themes are highlighted to identify and refine strategies for wise use: supporting frameworks, local environmental knowledge, economic valuations, gender, participatory monitoring, effectively addressing threats to wetlands through co-management, win-win scenarios where socio-economic development has gone hand in hand with wetland conservation, and exit strategies. This paper provides an overview of the lessons from the case studies published in these proceedings, together with other recent examples from the literature, and highlights best practices in participatory management of both inland and coastal wetlands.

## INTRODUCTION

*Strategies for Wise Use of Wetlands: Best Practices in Participatory Management* was organized as Workshop 1 of the 2<sup>nd</sup> International Conference on Wetlands and Development, held in November 1998 in Dakar. It aimed to address the complexities and challenges of developing and implementing wetland co-management systems with local stakeholders by:

- promoting the exchange of experiences, and strengthening south-south networks, and
- identifying and refining strategies for wise use, and reviewing best practices of participatory wetland management from around the world, particularly from Africa.

This workshop was a follow-up to a previous workshop of the first International Conference on Wetlands and Development held in Kuala Lumpur, Malaysia in October 1995. Planning for the Dakar workshop drew substantially upon the landmark volume that incorporated the proceedings of the first workshop in Kuala Lumpur (Claridge and O'Callaghan (eds.), 1997).

Evidence to date indicates that local people's involvement in wetland management can contribute significantly to maintaining or restoring ecological integrity and community well-being. Building upon the recognition that every successful co-management initiative has the potential to stimulate positive initiatives elsewhere, the Dakar workshop encouraged participants to focus on solutions, and on honest assessments of practical experiences in participatory wetland management.

It also provided an opportunity for "ground-truthing" the guidelines for establishing and strengthening participatory processes to involve communities and indigenous people in wetland management, which were then under development for the 1999 Conference of Parties of the Ramsar Convention on Wetlands (Ramsar Convention on Wetlands, 1999). The Ramsar guidelines summarize five major requirements for successful co-management:

- incentives for local and indigenous people's involvement and wise use: everyone must benefit in the long term
- trust among stakeholders
- flexibility
- knowledge exchange and capacity building, and
- continuity of resources and effort.

Box 1 below describes the situations when local and indigenous people *should* be involved in wetland management.

**Box 1.**

**WHEN IS PARTICIPATORY WETLAND MANAGEMENT ADVISABLE?**

*(Source: Ramsar Convention on Wetlands, 1999. Resolution VII.8)*

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

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

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

- 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 (e.g., different values need to be harmonized or there is disagreement on the ownership status of the land or natural resources);
- 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.

The workshop, which functioned as a sounding-board for practitioners, stressed that success must be judged from many different angles, such as stakeholder well-being, government agency satisfaction, and ecosystem health. Eight themes were highlighted in the effort to identify and refine strategies for wise use:

- 1. Supporting frameworks:** appropriate changes in land tenure, resource access, property rights, and the recognition of co-management regimes in national and local policies, legislation, and development plans, and how these have affected local initiatives
- 2. Local environmental knowledge:** co-management systems that have effectively incorporated traditional knowledge and technologies
- 3. Economic valuations:** assessments of the benefits and functions of wetlands that have gone beyond theory, and have been used in management planning
- 4. Gender:** wetlands management systems where women as well as men have a decisive influence on determining management objectives and practices
- 5. Participatory monitoring:** partnerships between management and local people to monitor the ecological character of wetlands, and progress towards the community's own objectives

6. **Effectively addressing threats** to wetlands through co-management
7. **Win-win scenarios:** where socio-economic development has gone hand in hand with wetland conservation, and
8. **Exit strategies:** where co-management initiatives have pro-actively planned for, and then effectively implemented, scaling down and phasing out of external assistance.

## **WHAT IS PARTICIPATORY WETLAND MANAGEMENT?**

Underlying the idea of community-based resource management is the recognition that humans are part of the ecological system, and not separate from it. Today's wetlands, including those considered to be the most pristine, are the result of complex interactions among physical, biological, and human forces over time. Virtually all of the earth's wetlands have been influenced and altered by patterns of – more or less intense – human use. In the case of First Nations, wetland management by local people can have a history of thousands of years.

Now, participatory management is generally defined as:

*a partnership in which government agencies, local communities and resource users, and perhaps other stakeholders, such as NGOs, share the authority and responsibility for management of a specific area or set of resources.*

According to Addun and Muzones (1997), there are five basic principles that are required for community-based resource management:

1. **Empowerment:** the actual transfer of economic and political power from the few to the impoverished many, and the operationalization of community management and control
2. **Equity:** communities as a whole, rather than a few individuals, benefit
3. **Sustainability:** inter-generational equity, based on the carrying and assimilative capacity of the ecosystem
4. **Systems orientation:** the community functions in the context of other communities and stakeholders, just as resources are ecologically linked to wider ecosystems
5. **Gender-fair:** women are involved in the control and management of community resources, and their practical and strategic needs are addressed.

The degree of community participation in the wise use of wetlands varies with the local context: from high levels of empowerment, to effective partnerships between government authorities and local communities, to situations where government remains firmly in control and stakeholders are consulted on decisions.

There is growing awareness that, in areas where indigenous and traditional peoples live, and have done so for hundreds, or even thousands of years, the authority for resource and ecosystem management must be devolved as much as possible to the local level. All over the world, indigenous peoples are demanding recognition of their rights, and a greater say in decisions affecting their lives. Fortunately, there is a growing understanding that rich biodiversity often coincides with cultural diversity. In these areas, the trend in ecosystem management is increasingly towards systems of collaborative management with indigenous peoples (Oviedo and Brown, 1999).

One clear lesson to date is that, unless a relationship of trust between communities and government agencies can be established and maintained, it is unlikely that even the simplest

co-management regime can survive. Unfortunately, in the majority of situations where communities are in a subsistence relationship with resources, their level of trust in government agencies is extremely low or even non-existent, and long periods of dialogue and shared learning are needed to build the trust required for co-management to work (Claridge and O'Callaghan, 1997). Once communication channels are functioning, the best way to build a solid foundation of trust is to ensure that plans and targets – mutually agreed between the communities and the relevant government agencies – are met.

A sufficiently long initial period of analysis and problem identification can help to make sure that resource management plans are developed based, not on token participation, but rather on genuine mutual agreement derived from a clear analysis of the benefits and costs to all stakeholders, in both the short term and the long.

The Ramsar guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands provide an extremely valuable list of indicators to help measure the extent of community involvement, reproduced here in Boxes 2a and 2b.

## **SUPPORTING FRAMEWORKS**

A sound legal basis is essential for establishing a participatory management regime. The chances of success are then greatly enhanced by transparent decision-making processes and multi-sectoral planning. A policy and legislative framework that legitimises the involvement of local people in resource management is the basic minimum input from government that will always be required. Issues of tenure, resource access, resource ownership, and co-management itself must be addressed. Lessons from involving people in managing marine protected areas in Belize, Mauritania, Mozambique, and Zanzibar stress the importance of a firm legal basis to support the efforts of the local people (Wells and Gawler, 1999).

In Cameroon (Kouokam and Ngantou, this volume), a law was passed in 1995 legitimizing participatory management of forests and protected areas. In many countries, however, national legislation does not support co-management. Furthermore, many government agencies lack training in participatory management. In many cases, legal, policy and implementation frameworks still need to be revised to allow for genuine models of community empowerment.

In Thailand, the general principle of people's participation in governance, resource management, and development planning has been fully recognized in the newly revised Constitution, adopted in May 1998. Legal recognition alone, however, does not suffice. Erfteimeijer and Bualuang (this volume) point out that there still are major cultural barriers to effective grass-roots participation in the strongly stratified, hierarchical Thai society.

**Box 2a.**

**INDICATORS FOR MEASURING LOCAL AND INDIGENOUS PEOPLE'S INVOLVEMENT IN WETLAND MANAGEMENT**

*(Source: Ramsar Convention on Wetlands, 1999. Resolution VII.8)*

1. Local and indigenous people have achieved an economic stake or other interest in the wise use of wetland resources.
2. The government agency has stated policies supporting participatory management.
3. Appropriate legal and financial incentives for participatory management are in place.
4. A more equitable sharing of benefits among stakeholders has resulted from the participatory management process.
5. Stakeholders have expressed satisfaction with their involvement in the process.
6. There is a clearly stated and widely known policy or legal document that makes a commitment to involving local and indigenous people.
7. All key stakeholders (particularly government) acknowledge participatory management as legitimate and desirable.
8. Local and indigenous people are now involved in making substantive decisions affecting the wetland resource use and management.
9. Local organizations to advance participatory management are respected within the community.
10. Representatives of the local and indigenous people are truly representative and accountable to them.
11. There are resource use and participation rules that are appropriate to the local situation.
12. A management agreement exists between stakeholders (oral or written, formal or informal).
13. The management agreement has clearly defined boundaries and membership.
14. The management agreement specifically defines stakeholders' functions, rights and responsibilities.
15. The management agreement has been approved by at least the resource-using stakeholders and key decision-making groups.
16. Parties to the agreement meet their commitments.
17. Non-compliance with approaches, rules, rights, and responsibilities outlined in the management agreement is deemed to be at an acceptable level.
18. Any system of graduated sanctions for infringement of rules has been agreed upon by all key parties.
19. There is evidence that resource management controls are being implemented.

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**Box 2b.** (Indicators for measuring local and indigenous people's involvement in wetland management, cont.)

20. There is the potential for collective modification of the rules relating to resource use by those affected.
21. There are "nested" management units (different bodies at different levels).
22. 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.
23. Facilitators/coordinators practice "learning by doing" and adaptive management.
24. There is an awareness among stakeholders of new management approaches, rules, rights, and responsibilities.
25. There is a two-way flow of information and communication between local and indigenous people and relevant government agencies.
26. Information reaches local and indigenous people in a timely and accurate manner, and in a form that is readily understandable.
27. Local and indigenous people participate in site monitoring and in evaluation of the participatory process.
28. There is evidence of respect by key government agencies for local human systems and local ecological knowledge.
29. Stakeholders are demonstrating necessary skills and empowerment (e.g., capacity to make decisions, monitoring skills, etc.).
30. 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.
31. 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.).
32. A random sample of local and indigenous people are 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.
33. 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.
34. There is an appropriately long-term source of funding for ongoing participation and resource management.
35. Local and indigenous people have provided in-kind support (time, labour, traditional knowledge and expertise) to implement the participatory management agreement.
36. Conflict management mechanisms exist, and there is an appeals process in case of conflicts within the management partnership.
37. There is integration between local wetland management and management of the entire catchment.

An interesting success story of community-based fisheries comes from Japan (Weinstein, 1998). After experimenting with western resource management methods (open access subject to licensing) in the late 19<sup>th</sup> century, Japan rescinded the new laws, and at the turn of the century returned to traditional community-based management for all inshore coastal fisheries. Exclusive, inalienable rights were granted to local fishing cooperatives. Membership in the cooperatives is based on residency and a period of apprenticeship, and is not transferable. The operational rules (gear, season, fishing areas, etc.) are decided by the cooperatives based on the experience of the fishers. The system provides a powerful form of accountability, as management decisions are made by fishing groups sharing the same fishing grounds, and mistakes are borne by the people who make them. According to Weinstein, Japan's inshore fishery is very healthy, as measured by macro-level indicators of sustainability.

Claridge and O'Callaghan (eds., 1997) noted that government agencies are often slow to embrace participatory wetland management, and their support for co-management may be only lip-service. They concluded that the development of techniques for increasing government acceptance of, and commitment to, co-management was one of the major challenges facing wetland conservation. Although this remains the case in many areas, some case studies from the present workshop provided encouraging examples of effective supporting frameworks.

For example, the Djoudj National Park in Senegal (Diouf, this volume) is implementing a management plan developed in consultation with the neighbouring communities. The plan is endowed with an institutional mechanism based on four committees. The Orientation and Scientific Committees provide oversight, while the Park Management Committee, including village representatives, has a direct role in the implementation of the management plan. In addition, an Inter-Village Conservation Committee maximizes the participation of the neighbouring villages, facilitates the exchange of viewpoints and decisions, and coordinates the development work of the various technical committees on ecotourism, replanting, waterways, health, and forestry/pastoralism. Great care went into designing these supporting frameworks for participatory management, with positive results. A climate of trust was built between the people and the park agents, and the number of infractions within the park declined to zero when the participatory management policy began.

Lessons from Pattani Bay in Thailand (Erfemeijer and Bualuang, this volume) provide many valuable insights into identifying and creating conditions for success, as well as the potential pitfalls, of developing supporting frameworks for participatory management.

The paper by Til and Banda in this volume, on the Bangweulu wetland in Zambia, highlights the difficulties of co-management in a situation characterized by suspicion, mistrust, and outright hostility – between government agents and local people, among different ethnic groups, and even within ethnic groups. They draw attention to the importance of democracy in participatory management, where each and every stakeholder is free to present his or her view, and to be represented. Here, however, the traditional leadership of the chiefs is by no means in the interest of all. A major lesson from the Bangweulu is the importance, in this context, of creating supporting frameworks that effectively control the powers of the traditional chiefs and empower the powerless, while at the same time keeping the chiefs on board with the promotion of democracy and co-management.

Lessons from Zambia and elsewhere highlight the need to take into account customary supporting frameworks provided by traditional kings, queens, chiefs, religious leaders, and healers. These powerful key players (who – it is true – may in some cases need to begin sharing the responsibility for decision-making) must be fully involved in developing strategies for wise use.

Faced with ever increasing threats to its important coastal fishery, Bénin has forged ahead to create a legal basis for participatory management of this key resource (Akambi, this volume). In 1993, the Fisheries Administration began creating Fisheries Committees in the major villages along the coast, which were democratically elected, and charged with ensuring the rational use of the lagoons and their resources. A legal foundation was established in 1996 with the adoption of a management plan for the coastal fisheries, and in 1997 a law was passed legalizing the existence and operations of the village Fisheries Committees. To date, 95 committees have been created to co-manage Bénin's coastal fisheries, and the resulting functional working relationships have created a climate of trust between the fishers and the government authorities.

The Tasek Bera case study in Malaysia (Prentice *et al.*, this volume) focuses on the indigenous Semelai people with their close cultural affinity to the wetland, and seeks to develop the role of this disadvantaged group in a new nature-based ecotourism initiative. Initial results indicate that the consultation process was effective in raising awareness, and achieving trust and support.

Pimbert and Gujja (1997) report on issues of trust and equity in wetland management policies in Keoladeo NP in India and the Uchali wetland complex in Pakistan. They emphasize that participation must be part of a process of dialogue, action, analysis, conflict resolution, and change. Nzioka (this volume) presents two examples of lack of transparency in decision-making, concerning the Tana and Rufiji deltas in Kenya and Tanzania respectively. Given the potential threats these developments pose to the delta ecosystems and to the livelihoods of local people, these examples underscore the urgency of appropriate policy frameworks, and in particular, robust integrated coastal zone management plans. Campredon (this volume) emphasizes the importance of a regional framework in developing a planned approach to coastal zone management.

The case studies from the Tana and Rufiji deltas also point to the importance of incorporating mechanisms for conflict resolution in supporting frameworks. In situations where there may be a lack of trust between local communities and government institutions, it is important to find ways of overcoming the barriers that may exist, and to balance community ownership of the process with the full involvement of local government. User communities managing wetlands are unlikely to be able to solve problems originating outside the community.

Current trends towards decentralization can indeed lead to greater reliance on co-management structures, but if the decentralization of authority is not coordinated, it can result in competing and overlapping jurisdictions, conflicts in wetland policies, or in the worst cases, a total abandonment of responsibility by government agencies.

OECD (1996) provides useful general guidelines for developing supporting frameworks the wise use of wetlands. In addition, in many situations, promoting participatory management will require changing government attitudes, approaches, policies, and/or legislation. While local projects and local successes may provide convincing arguments for the benefits of co-management, policy efforts must not be neglected in ensuring a legislative basis for collaborative resource management. It should be understood that moving government agencies away from rigid top-down habits to participatory approaches generally takes a sustained effort over a very long time, and development agencies and NGOs should be prepared for a long-term commitment. Resource management policies will need to be harmonized among regional, national, provincial, and local levels, and in addition, between present and future generations. Weinstein (1998) suggests design principles for successful and sustainable management institutions based on common property rights, and these are given in Box 3.

**Box 3.**

**DESIGN PRINCIPLES FOR ENDURING AND SUSTAINABLE  
COMMUNITY-BASED MANAGEMENT INSTITUTIONS**

*(Source: Weinstein, 1998)*

- Boundaries of the resource systems, and the parties that have use rights are clearly defined.
- Rules for individual resource allocation (or benefits) are tied to local conditions, and to rules for contributions (of labour, materials, cash...).
- Individuals who are affected by the rules, and who have the most information about the environmental and social systems, are involved in making changes to the rules.
- Users monitor physical/biological conditions, and users monitor users' behaviour (or they hire people to do the monitoring).
- Users who violate the rules receive graduated sanctions (e.g., warning, then fine, then exclusion) from other users, or from officials accountable to the users, or from both.
- Users have rapid access to low-cost, local methods to resolve conflicts (among users, or between users and officials).
- Rights of users to create their own institutions are not challenged or subverted by government authorities or by other resource users.

Another aspect of supporting frameworks is building community capacity for self-organization. Local groups may need help in acquiring skills in prioritizing identified problems, leading meetings to maximize participation – especially of traditionally under-represented groups, building consensus, literacy, recording agreements, general management and accounting, conflict resolution, ecological and socio-economic monitoring, preparing reports and proposals, etc. Community capacity building is a recurrent theme throughout the papers in this volume.

## LOCAL ENVIRONMENTAL KNOWLEDGE

For most of human history, the natural world has been protected from the most disruptive human influences through relatively humble technology, such as local laws or cultural or religious taboos preventing overexploitation. The loss of traditional knowledge about resource use is one of the central problems of our times (McNeely, 1993). Local people often have an understanding of wetland ecology in their particular context that is far subtler, and sometimes superior to that of outside "experts". Traditional practices, such as voluntary restrictions on access and use, can be invaluable tools for wetland management. However, traditional practices do not necessarily result in environmental sustainability, and they must be assessed objectively in the light of changing population dynamics and pressures on the resource. Likewise, local explanations for environmental phenomena may need to be reviewed in light of scientific understanding. Rather than simply extracting local knowledge for the benefit of wetlands science, it is critical that researchers working with local people ensure a two-way exchange of information, ensuring that local wisdom is incorporated into management strategies, and feeding back scientific knowledge and data to the communities.

Local environmental knowledge can be a powerful source of authority. The Fisheries Committees in Bénin (Akambi, this volume) are reviving traditional management practices, such as obligatory rest days, and taboos against taking juveniles and against fishing in the strictly forbidden sacred spawning areas.

In the case of Diawling National Park in Mauritania, which suffered from the same disruption of ecosystem functioning as the Djoudj NP across the river, local environmental knowledge provided the cornerstone of the restoration plan (Ba *et al.*, this volume). One example of this is the very detailed traditional knowledge of the hydrology of the river and the migratory pathways of the fish that the fishers of Takhrident contributed to the design of the restoration works – with excellent results for the fish, the shrimp, and the local economy. Likewise, since many of the park regulations for resource use are based on their own traditions, the local people around the park take an active role in ensuring the respect of the rules, and inform the park authorities of infractions such as night fishing, using a sickle to harvest perennial grasses, etc.

Another spectacular case of floodplain restoration has been carried out in Waza Logone in Cameroon (Kouokam and Ngantou, this volume). Here again, the project design was based on the highly detailed knowledge of the local people with regard to the floodplain vegetation, hydrology, seasonal productivity of the fisheries, the cultivation of floating rice, and the

migratory pathways of wildlife. The integration of traditional community knowledge into the restoration design is without a doubt one of the main reasons for the success of this project.

In heavily populated Nigeria, where the demand for fish far outstrips the supply, Ayeni and Mdaihli (this volume) consider that for fisheries management to have a chance of success in the future, it must combine government control with local traditional methods that were once in place, such as taboos on seasons, minimum size, and sacred no-fishing zones. With the introduction of community-based fisheries management in Kainji Lake, management decisions are now taken by representatives of the fishers and their traditional institutions. This has changed the fishers from antagonists to defenders of the regulations.

Wood *et al.* (this volume) report on wetland ecosystems in south-west Ethiopia where government development policies raise questions about sustainability, as they favour more intensive wetland use, in contrast to the less intensive uses based on tradition. In particular, local communities have a wealth of knowledge built up over generations on hydrology and soil dynamics, and they have developed management practices accordingly, which seem to permit the long-term use of these wetlands without degradation. A strong message from this paper is that government policies should be more sensitive to the diversity of local conditions, including specific wetlands and the needs of their associated communities.

Participatory Rural Appraisals carried out in three villages near the Uchali wetland complex in Pakistan revealed important social and ecological differences among the villages, pointing to the need to integrate the site-specific knowledge and innovations of individual communities with the more general ecological principles on which management plans are usually based (Pimbert and Gujja, 1997).

Incorporation of indigenous and local knowledge, values, and management practices is absolutely critical to the relevance and success of participatory management initiatives. Although this is usually recognized in principle, in practice, greater effort is often needed to incorporate local wisdom — and especially traditional management strategies — into wetland management plans.

## **ECONOMIC VALUATIONS**

Wetland ecosystems, and particularly the ecological functions they provide (which are not bought and sold in markets), are typically undervalued in development decisions. Economic valuation, by providing a means for measuring and comparing the various benefits of wetlands, requires that all the values that would be gained or lost under each resource use option are weighed objectively. As such, economic valuation offers a powerful tool for ensuring the "wise use" of wetlands. OECD (1996) analyses wetland values in terms of function, products, and attributes for different types of wetlands, and Barbier *et al.* (1997) provides a good guide on economic valuations for planners and policy makers.

In response to proposals for reclamation for commercial agriculture of the Yala swamp in western Kenya, Abila (this volume) determined replacement values for key economic activities of the local communities who depend on the wetland resources. Comparing the replacement values for hunting, fuelwood, brick making, papyrus, and fishing with the costs

and benefits of conversion, this study concludes that traditional sustainable uses of the wetland by local people should be promoted over conversion.

The practice of beach seining in Lank Kainji for small freshwater sardines results in substantial by-catch of juveniles of other commercially important species. Ayeni and Mdaihli (this volume) estimated the economic value of the total catch with and without beach seining, and these calculations helped to raise awareness, and build consensus to eliminate beach seines among the different conflicting interest groups. Similarly the Community-Based Wetlands Conservation Project in the Saiwa wetlands in Kenya (Awer Mohamed, this volume) used comparative gross margin analysis to help community groups determine the relative incomes they could expect from alternative enterprises in the wetland buffer zone (agro-forestry, fish farming, beekeeping) in comparison to maize, a more intensive land-use.

These examples all illustrate the use of economic tools to inform decision-making by local actors. Examples can be found in the literature of valuation exercises that have demonstrated the economic value of wetlands in the larger context of development policy. However, according to the experience of the participants in the Dakar workshop, there seem to be few economic valuation studies that have in fact made an impact on wetland policies, especially in developing countries.

Lessons to date from economic evaluations of wetlands highlight the need to:

- develop more robust, simple indicators
- use methods that are specific to different wetlands
- ensure that the techniques used are based on a good understanding of the human-resource interface
- ensure that data are then interpreted correctly, and especially
- develop easily applied techniques that can be used by local communities to evaluate what is of benefit to *them*.

Methods that exaggerate the economic value of wetlands should be avoided. In some cases, greatly exaggerated claims have damaged the credibility of this potentially valuable tool for wetland conservation. Greater effort must be made to improve synergies between wetland economists and public relations / communications specialists. Too often decision-makers and the general public are not aware of the economic value of wetlands and their ecological function. This is an area that should receive priority attention in the future, as many development decisions are made on economic grounds.

## **GENDER**

Although gender analysis is accepted as a key element in successful natural resource management, gender roles are not always considered when wetland projects and programmes are designed. Despite its recognized importance, the concept of gender is still not well understood by policy and decision makers, planners, and natural resource managers. Matiza (1993) outlined the key issues that need to be addressed for gender to be fully integrated into wetland conservation and management:

- Correct gender perceptions, and increase gender awareness.
- Promote gender roles research in wetland conservation and management.
- Review traditional stereotypes in wetlands resource allocation and utilization.

- Anticipate potential conflicts between traditional culture and gender roles empowerment.
- Train policy makers, planners, and wetlands resource managers in gender roles analysis.
- Integrate gender issues into national wetlands policies and into wetland projects and programmes at the planning, monitoring, and evaluation stages.

Clearly defined user rights can be a useful first step in facilitating women's participation. Training in conflict resolution may also be necessary. Invariably, in efforts to change unfavourable gender stereotypes, a measured approach – working with both men and women – is required. In traditional societies, the importance of addressing gender issues with sensitivity and patience cannot be overstated. In the Saiwa wetlands in Kenya, for example, men were reluctant at first to let women participate in study tours. However, their perceptions slowly evolved as they saw for themselves the benefits of involving women more fully.

It is important to understand that addressing gender issues with too much enthusiasm and too little sensitivity, can backfire, resulting in project failure. In some cases, deeply-rooted traditional stereotypes pose real challenges to gender-sensitive development. The Bangweulu swamps in Zambia provide an example of strong resistance to involving women in co-management structures, even though women play a crucial role in the fishing industry. Here co-management is perceived as a political process, and therefore is the domain of men. Thus, there is a risk that the process of co-management will be monopolized by men, and will have a negative impact on the position and interests of women (Til and Banda, this volume). In strongly traditional societies such as these, concerted and sensitive efforts are needed to ensure the representation of less powerful stakeholders in co-management regimes.

In the Diawling floodplain, the incorporation of women's knowledge led to a redesign of the artificial reflooding scheme (Ba *et al.*, this volume). The men had suggested releasing the flood waters early to maximize the recruitment of *Tilapia*. The women, however, insisted that the wetland grasses, such as the valuable *Sporobolus*, needed rain before the flooding in order to reach optimum vegetative growth. A compromise solution was tested, which produced extremely positive results for the fish, the perennial grasses, and the local community as a whole.

Although not yet widespread enough, successes have been recorded in many projects, such as the Waza Logone wetland in Cameroon (Kouokam and Ngantou, this volume), where women have proved to be ideal partners in co-management. In this conservative context, the project worked slowly and sensitively, first of all negotiating with the men to allow the women to engage in activities outside their homes. Here, once resistance was overcome, and women were allowed to participate, their contribution was greatly appreciated by the men, and the entire community benefited from revisiting and changing traditional gender taboos. The women of Waza Logone now have the (previously unheard of) rights to acquire land for rice cultivation, to produce and sell goods, to manage revenues, and to participate in mixed decision-making committees. This kind of cultural change is enormous, and requires years of patient, careful work.

Since the importance of engaging both women and men in wise use strategies for wetlands is widely recognised, one must then ask: why is it that, even today, good examples of gender-sensitive strategies in wetlands conservation and development initiatives remain the exception rather than the rule?

In order for participatory management to avoid the pitfalls of excluding key stakeholders, wetland initiatives should ensure that: 1) gender issues are in integral part of planning, monitoring, evaluating, reporting, and dialogue with partners; 2) the initiative has adequate expertise on gender issues; 3) gender issues are incorporated in the Terms of Reference for all studies; 4) statistics are disaggregated by sex; and 5) capacity is built with partner institutions to work with gender issues (ZBWCRUP, in press). Gawler (1999) provides guidance on assessing whether a project is adequately addressing gender issues in terms of project design, monitoring, and implementation.

## **PARTICIPATORY MONITORING**

Central to a strategy for sustainability is knowledge about how systems are performing, and what the effects of management efforts actually are. The science of wise use is by necessity an ongoing process of adaptive learning. What works in one place is not necessarily the answer for the neighbouring watershed, or even the neighbouring village. What is needed is a diversity of solutions, based on an evolving understanding of local environmental and cultural conditions. Monitoring by the people to whom the solution matters most is critical to the success and relevance of adaptive management.

Waterwatch Australia provides an exciting example, at a nation-wide scale, of participatory monitoring (Chalkley *et al.*, this volume). Waterwatch is an environmental education and awareness programme that promotes and supports water quality monitoring, in order to create an ownership ethic for catchment-wide land and water management by the Australian people. Since 1993 Waterwatch Australia has grown to include over 50'000 people monitoring over 4000 sites in every state and territory of the country. The Waterwatch method is based on community awareness and ownership, regional facilitators helping community groups, and strong technical support. Waterwatch is now evolving beyond monitoring, and is entering a new era of activism, pressing for solutions to waterway problems.

Local ownership and informed local decision-making have been key to the initial successes in Pattani Bay, Thailand, where a project is facilitating community initiatives to restore severely degraded sites of former mangroves (Erftemeijer and Bualuang, this volume). The project approach emphasizes process rather than outputs, and focuses on learning, strengthening community organization, building environmental awareness, and sharing information. The villagers themselves determined why their initial efforts were not effective, and decided how the rehabilitation work should be re-oriented.

Involving local people in monitoring is not only a cost-effective solution, drawing on local knowledge, but it also has many potential positive spin-offs. Participatory monitoring provides a powerful learning element, and a tool for village environmental plans. Just having data can give people a sense of ownership. Communities involved in monitoring see for themselves the impacts of project interventions, and can recommend corrective actions if necessary. Baseline surveys during the planning phase or at the beginning of the intervention can build awareness, and are important so that the communities have a reference point from which to measure progress. A well designed community monitoring programme is one of the most effective ways to enhance skills in resource management.

Despite the benefits, local people may not wish to volunteer their time for monitoring, particularly if they believe the monitoring is solely satisfying the scientific curiosity of outside stakeholders. In some cases, clear incentives will be needed. Challenges to participatory monitoring include: the need for robust indicators to measure impact or change, the need to secure the continuity of data collection, and ensuring the relevance and quality of the data collected. The capacity of community structures must not be overly romanticized. Experience has shown that in many cases, there will still be a need for outside help to document and disseminate the information collected, while the role of the community in monitoring is gradually increased as they build their capacity.

In many cases, monitoring techniques do not need to be highly sophisticated, and locally chosen indicators – such as "Are there bigger fish catches?" or "Does the water taste better?" – may be most relevant. Marguolis and Salafsky (1998) provide a wealth of valuable suggestions for developing and implementing a community-based monitoring plan, as well as using the results of monitoring for learning and adaptive management.

### **EFFECTIVELY ADDRESSING THREATS**

It must be recognised that even within communities there can be a large diversity of stakeholders. It is important to ensure that the needs of the weaker groups within the community are addressed, and to avoid the risk of over-organizing the community. Threats to wetlands often involve major issues of equity among stakeholders, and addressing these issues can be an effective first step towards resolving the threats to biodiversity. Co-management is an important tool for conflict management and even resolution. Among the great advantages of participatory management is that it opens up dialogue, and increases transparency in decision-making.

Finlayson *et al.* (1998) demonstrate successful strategies for addressing threats to three coastal wetlands in northern Australia, where land tenure systems, resource use, and management structures are vastly different. The common denominators of these successful programmes were that they were: 1) essentially cooperative, and involved genuine local input, and 2) based on formal arrangements that acknowledge the diversity, aspirations, and economic and cultural values of the local communities.

Local communities are increasingly aware of the negative impacts to their resource base of large development projects. More and more, communities are eager to defend their rights to sustain their livelihoods as resource users. However, when faced with a diversity of interest groups, local people do not necessarily have the negotiating skills needed to achieve solutions to the threats of most concern to them. Communities may need to be trained in order to be able to discuss their concerns with government agencies. The capacity building that is necessary to empower communities must be planned for and taken seriously.

With declining government resources, it is clear that involving local communities as the main actors in wetland management is by far the most promising solution to the ever-increasing threats to the integrity of wetlands. However, co-management must not be an excuse for government inaction. Governments need to set appropriate environmental standards, and to be actively engaged in helping to meet these standards.

Thampy (this volume) argues that decision-makers need to know with more scientific certainty how forces such as migration, urbanization, rapid population growth, tourism, and high rates of resource consumption affect the natural ecosystems on which life depends. Astute and realistic environmental policies that are compatible with human needs, and that provide incentives will be critical to achieve enduring success in maintaining ecosystem health. It is well known that environmental issues cannot be tackled in isolation of the prevailing economic and social context. The Nakuru case study illustrates that, until the issues of inequity, insecurity, and political instability are addressed, sustainable development and ecosystem health will remain an elusive pipe dream.

De Sherbenin (1998) stresses that access to water is a human rights issue. Water is often captured by powerful economic interests, to the detriment of local communities. Inappropriate (or un-implemented) national policies underlie many of the most severe threats to wetland ecosystems, such as water diversions, agricultural policies, and pollution. A major challenge is to establish effective, integrated coordinating mechanisms for river basin, or transboundary wetland management (Moser *et al.*, 1999). Likewise, the root causes of wetland degradation may be international trade or climate change. This highlights the urgency of accompanying co-management initiatives with the necessary national and international policy reforms. Measures to conserve wetlands for the goods and services they provide may ultimately fail if they are not supplemented by efforts to address water allocations, human demography, pollution, climate change, etc.

## WIN-WIN SCENARIOS

In this context, a win-win scenario is where a wetland intervention results in measurable benefits to both humans and nature. When resources become scarcer, people have incentives to regulate use. In the short term, there will often be winners and losers, and losers may need to be compensated. Strategies for wise use mean taking the long-term view, and devising outcomes where all stakeholders can be winners. Experience shows that creative negotiation and trust are vital to create win-win situations.

Olesu-Adjei (this volume) presents an example from Ghana, where the blockage of freshwater corridors leading to the coastal lagoons had resulted in serious degradation of the lagoon vegetation, especially mangroves, and a radical decline in the biodiversity of the assemblages of coastal fishes, in addition to painful consequences for the local communities and their livelihoods. The project provided equipment, and the communities contributed their labour to remove weeds and silt from the freshwater channels, thus restoring mangroves in the lagoons, and a multitude of ecological amenities, such as rice and sugar cane farming along the banks of the channels, fishing, domestic water supply, and boat transport. This experience also helped to foster unity within and among the communities.

As described by Ba *et al.*, the initial results of the restoration of the Diawling floodplain showed dramatic improvements in fish and shrimp abundance, pasture, and vegetation, and this in turn benefited the subsistence and economic activities of both women and men. As a result, local communities are now demanding an extension of the park, as the park's legal mandate provides them with the greatest chance of being able to continue their traditional use of wetland resources.

Floodplain restoration, as illustrated by the projects in the Senegal River delta, and in Waza Logone in Cameroon (Diouf, Ba *et al.*, and Kouokam and Ngantou, in this volume), can provide spectacular examples of successful win-win scenarios. At the scale of an entire river basin, though, harmonization of competing uses is very difficult, especially with conflicting interests of upstream and downstream users. The risk in these situations, especially in arid areas, is that everyone loses if appropriate water policies are not established and implemented in time.

## **EXIT STRATEGIES**

Effective community participation in wetland management is a long-term process that can only be achieved through an incremental approach. Unfortunately, the development literature is riddled with examples of projects that ultimately failed because appropriate exit strategies were not included in the project design. Building viable participatory management structures requires continuity in effort and resources. Realistic exit strategies must be devised at the beginning of a project, and they must be monitored during the project's lifetime.

One key lesson is that projects should adopt the role of facilitator rather than implementer, and that the role of stakeholders should shift from passive to active. The focus should be on process, and long-term ownership by the communities. As communities become more empowered, support can be decreased. Good results have been achieved when the phase-out is gradual, and project inputs evolve from continuous to part-time support. Scale is important. Sustainability is enhanced when projects start small, building upon what people have already, relying on local institutions, and ensuring that any inputs of equipment and infrastructure can be maintained after external support has ended.

The development of low technology, low cost solutions for wetland management and restoration, based on local environmental knowledge is particularly important for developing countries (Moser *et al.*, 1999). A good example of this approach is the Saiwa wetlands project in Kenya (Awer Mohamed, this volume), which was intentionally designed with a small budget to enhance the prospects for sustainability. The project aimed to develop a land-use system that would simultaneously benefit the resident community and the wetlands, and the project's specific objectives were determined through analysis by the local communities, who identified soil conservation as their major strategic concern. The approach in Saiwa gives reason for optimism, as the farmers themselves now lay out terraces and leave uncultivated strips between their farms and the wetlands, and in so doing they are benefiting economically.

Kouokam & Ngantou (this volume) advance a plan of progressive dis-engagement, including creating a local NGO to carry on as development assistance is phased out and afterwards.

The Lake Nakuru conservation and development project (Thampy, this volume) is another example where examples of exit strategies were incorporated into the re-design of the project. Using a catchment approach to promote the health of the lake ecosystem, the project helped to initiate over 200 tree nurseries, with an annual turnover of 200'000 seedlings. Most of these nurseries are now independently motivated, self-reliant initiatives, which do not receive any material support from the project.

Likewise, the Yadfon Association, a Thai NGO, ensured the sustainability of their work to restore mangroves by gradually expanding their approach over 13 years from a few villages at the outset to over 30 by the late 1990s, and by expanding the scope of their work to the more general aspects of coastal resource management, rural community development, and sustainable fisheries. Now the villagers themselves, without any substantial involvement of Yadfon staff, are promoting community capacity building for self reliance and the wise use of coastal resources to other villages in Trang Province (Erfemeijer and Bualuang, this volume).

In most wetland conservation and development projects, however, more attention must be paid to devising exit strategies as part of the project design, so that gains that are made during the life of the project are not lost when donor funding or outside support comes to a close.

## CONCLUSIONS

What are best practices? As noted by Erfemeijer and Bualuang (this volume), there is no single correct way to establish effective local community involvement in wetland resource management. What is crucial is to share with others working in the same field, experiences of both successes and failures.

Clearly, the emphasis on the process rather than the outputs contributes to a longer-lasting, sustainable change in attitudes towards resource use. At the same time, however, the process approach must be accompanied by clear and measurable indicators of progress – as defined by the target communities. One of the challenges, as mentioned by Erfemeijer and Bualuang, is balancing an open, flexible approach based on local ownership of the process with clear prioritization of objectives, and weighing the community's desire for immediate benefits with the need for sustainable, long-term solutions.

Best practices in participatory management often take wetland managers far beyond the specific concerns of conservation and wise use, and touch upon some of the most significant aspects of human life: democracy, equity, development, and cultural survival (Borrini-Feyerabend, 1996). Empowerment is about people – both women and men – taking control over their lives: setting their own agendas, gaining skills, increasing self-confidence, solving problems, and developing self-reliance. It is both a process, and an outcome (ZBWCRUP, in press).

It is hoped that these proceedings, *Strategies for Wise Use of Wetlands: Best Practices in Participatory Management*, will strengthen our collective understanding of the wise use of wetlands by documenting some examples of best practice. Much more, however, needs to be done at all levels – local, national, and international – to learn from co-management experiences, and to develop supporting policies and the capacity to implement them. As emphasized by the 2<sup>nd</sup> International Conference on Wetlands and Development, water and wetlands are the source of life. The papers in this volume do show that important and encouraging lessons on participatory management of wetlands are being learned in a variety of human and ecological settings. There is no room, however, for complacency. In virtually every country, it is increasingly urgent to develop and implement – before it's too late – comprehensive strategies for the wise use of our source of life. A key lesson from all of these contributions is that, for a strategy of wise use to be sustainable, it cannot be based solely on a

concept developed by government or international experts, but must ensure that it incorporates the priorities and the wisdom of local people.

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