

STRATEGIES FOR MANAGEMENT OF WATER RESOURCES FOR MAINTAINING THE ECOLOGICAL FUNCTIONS OF WETLANDS

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The purpose of management strategies is to support a better allocation of water to the wetlands resources so that they can receive enough water, in quality, quantity and timeliness suitable to continue to provide their goods and services. The following strategic guidelines are explained below:

Sustainability as a goal. Adequate water has to be provided to wetlands to sustain the functioning of these ecosystems, respecting their natural dynamics for the benefit of future generations. Where water requirements are not known, or where the impact of reducing water allocation to wetlands is unclear, the precautionary approach should be applied. The wetland ecosystem is the resource base from which water is derived. It should be managed to protect the resource base in order to provide goods and services in a sustainable manner. This requires sufficient water allocation to maintain wetland ecosystem structure and function. This is directly compatible with the “wise use” concept embodied in the Ramsar Convention, which has been defined by the Conference of the Parties as “the sustainable utilisation of wetlands for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem”.

Clarity of process. The process by which decisions are made on the allocation of water should be clear to all stakeholders. Water allocation has often been a contentious issue and this is likely to increase in future as competing demands rise and available water resources may diminish due to climatic change. In many cases stakeholders have not understood why a particular allocation decision was made, leading to suspicion and mistrust of decision-makers. Whilst it will not be possible to please all stakeholders in any water allocation decision, by ensuring a transparent process in the decision-making the outcome can often be less contentious and more acceptable.

Equity in participation and decision-making factors. There should be equity for different stakeholders in their participation in water allocation decisions. There should also be equity in the factors that are considered in decision-making, including the functions, products and attributes of wetlands. Decision-making is often a complex process requiring consideration of many factors and competing demands. Some water users may feel that their requirements have been given less weight than others. Whilst weightings may be applied to different demands for legal or policy reasons, no demand should be ignored. In any decision, ecological and social issues should be considered

equally with economic considerations.

Credibility of science. Scientific methods used to support water allocation decisions should be credible and supported by review from the scientific community. Science must be based on appropriate hydrological and ecological data, including adequate baseline ecosystem records. The best available knowledge and science should be employed, which should be updated as better knowledge becomes available from research and monitoring. However, lack of perfect knowledge should not be used as an excuse for inaction. The precautionary approach should be applied.

Transparency in implementation. Once procedures for water allocation decisions have been defined and agreed, it is important that they be seen to be implemented correctly. This requires a transparent implementation processes, so that all interested parties can follow the choices made at each step, have access to information on which they are based, and recognize agreed procedures.

Flexibility of management. Like many ecosystems, wetlands are characterized by complexity, changing conditions, and uncertainty. It is essential that an adaptive management strategy be adopted, which requires plans that can be changed as new information or understanding comes to light.

Accountability for decisions. Decision-makers should be accountable. If agreed procedures are not followed or subjective decisions can be shown to be contrary to the spirit of the above principles, decisionmakers should provide a full explanation. Stakeholders should have recourse to an independent body if they feel that procedures have not been followed.

Water related guidelines related to wetlands

Scientific and technical guidelines:	
Water resources allocations management	<ul style="list-style-type: none"> -Determination of environmental water requirements for estuaries, coastal and near-shore wetlands. -Determination of environmental water requirements for rivers. -Determination of environmental water requirements for non-river inland wetlands. -Environmental flow determination and implementation. -Water allocations: worked examples and case studies of determination and implementation (all wetland types).
Reservoirs and human-made wetlands	Wetlands and water storage interactions: guidance. Wise use within water resources management context, and human-made wetlands.
Groundwater management for maintaining wetland ecological character	Groundwater: initially planned to draft detailed technical and operational guidance for management of groundwater associated with wetlands.
Wetlands and water quality management.	Management of water quality in wetland ecosystems; water quality requirements for protection of wetland ecosystems; management and mitigation of water quality impacts on wetlands.
	Water resources management in dry and sub-humid lands.
	Vulnerability Assessment.
	Integrated framework for inventory, assessment & monitoring
Ecological character (water supply as a product) and assessing	Conceptual models on ecological character.
	Further work on change in ecological character, including limits of acceptable change.

change in ecological character	
Indicators of Convention effectiveness at river basin level	Monitoring and evaluating water-related aspects of ecological character, including indicators of ecological character and wetland management at site level and at river basin level. Operationalising the indicators of effectiveness, and generating regular reports.
Designating Ramsar Sites, identifying wetland types and functions, especially hydrological functions	Rationalising the Ramsar information sheet, guidance on criteria and description of ecological character Reviewing systems of wetland classification.
EIA on river basin scale	Guidelines on Environmental impact assessment of wetlands
Policy, governance and institutional aspects:	
Developing wetland policies	Preparation of a single, integrated Handbook which brings together all Ramsar's core water-related guidance.
	Review and strengthen (including with some operational detail) specific water sector aspects of non-core guidance on law, policy and institutions
	Provide new core guidance on developing water sector policy that can adequately address dependencies between water management and wetland ecosystems.
	Development of more detailed operational guidance on a number of the individual components of RBM.
	Development of more detailed operational guidance on a number of the individual components of river basin management.
Participatory management	Strategy for engaging in the global water debate.
Participatory management	Further consideration of characterising and better targeting audiences for technical guidance, and further monitoring uptake, use and utility of guidance.
Planning frameworks:	
River Basin Management (RBM) guidance	Identification, analysis, tracking and reporting of RBM case studies
	Critical path application of RBM case studies
	Implementation of river basin management plans

Waterresourcesdevelop mentplanning:	Strategy for mainstreaming natural wetland infrastructure into Integrated Water Resources Management
	Detailed guidance on managing water-related aspects of wetlands under conditions of climate change and desertification. Implications of climate change for planning, water resources management and environmental flows.
	Additional guidance on cross-sectoral policy and legislation (including all the water use sectors) for addressing water- related aspects of wetland management.
Integrated CoastalZone Management	Integrated water and coastal management - case studies

Economics for Ecology [Текст]: матеріали XX Міжнародної наукової конференції,
м. Суми, 6-9 травня 2014 р. / Редкол.: Д.О. Смоленніков, Л.А. Кулик. - Суми : СумДУ,
2014. - 145 с.