

<b>EWRP</b>	<b>Policy Briefing Notes</b>	<b>Issue 3</b>	<b>Sustainable Wetland Management: Lessons from Illubabor Zone</b>
<b>Ethiopian Wetlands Research Programme</b>			<b>P. G. Abbot &amp; Afework Hailu</b>

### Summary

The continued functioning of wetlands is essential for the environmental well-being of Ethiopia. In particular, wetlands are important for the maintenance of the hydrological systems in the country. They also have positive influences upon other environmental processes and conditions at the local level. While it is desirable to protect all wetlands in their natural state, given the current population growth and land shortage this is not possible. Hence it necessary that conservation principles are built into the management practices of wetland areas as they are used. In this way it will be possible to ensure the sustained ecological functioning of these areas as wetlands. This will guarantee the continued production of the ecological and socio-economic benefits which can be obtained from natural wetlands and the production of some additional benefits, such as “hungry season” food supply, without degrading the wetland.

### Wetlands and Conservation

Conservation can be regarded as the medium- to long-term maintenance and protection of natural environments and the quality of their biological diversity. Maintenance and protection of the natural environments also includes ensuring the continued operation of ecological systems, such as the hydrological system and the atmospheric system. However conservation does not mean that nothing can be used or changed. Conservation includes the sustainable use of natural resources so that benefits can be obtained by people, without destroying those resource or undermining the functioning of ecological systems.

In wetlands, conservation initiatives are commonly linked to biodiversity conservation, as biodiversity is associated with environmental stability in the wetland ecosystem. For instance, loss of biodiversity, in terms of locally valued plants present in natural valley bottom wetlands, usually causes increased flood variability, deterioration in water quality and greater water table fluctuations.

Wetland conservation which protects the natural state of wetlands can also have important social and economic benefits on local users. It is after all, the poorest who usually rely most heavily on the exploitation of wetlands in their natural state (for collecting of reeds, water and craft products) and hence they who lose out when wetlands are converted in their entirety and subsequently become degraded. For these groups, maintenance of, and improved access to, wetland biodiversity can often contribute more to sustainable livelihoods than conversion for farming<sup>1</sup>.

Whilst environmental and biodiversity concerns are important in sustaining rural livelihoods, protecting wetlands in their pristine state is not always feasible or desirable, especially as population pressures increase.

### Box 1 - Defining Sustainability

*Sustainability:* is the maintenance or continued existence / operation in the long- term of something. This might be applied to an ecological system, such as a wetland, but can also be applied to organisations.

*Sustainable Development:* is development that meets the needs of the present without compromising the ability of future generations to meet their own needs<sup>2</sup>.

*Environmental Sustainability:* is the long-term maintenance of the environment and the functioning of its constituent ecological systems. This is often seen to include social and technological aspects as well as ecological ones.

*Social Sustainability:* The maintenance or improvement of people’s well being over time, based on an equitable distribution of costs and benefits of production systems<sup>3</sup>.

#### *Agricultural Sustainability*

The utilisation, management and conservation of the natural resource base and the orientation of technological change to ensure the attainment and continued satisfaction of human needs through agriculture for present and future generations<sup>4</sup>.

Combining wetland conservation with some conversion or development may enhance the natural productivity or value of the wetland. In such cases, environmentally sensitive management can increase the value of one or more functions of the wetland system without significant or irreversible damage to the others.

## Sustainable Wetland Management

Sustainable wetland management can be viewed as a process of intervention between two extremes. One extreme is complete protection of wetlands in their pristine condition and the other is complete conversion for agriculture or other uses. Between these two are a range of combinations of conversion and conservation. Sustainable management involves a balance between the biological concerns favouring protection and the socio-economic and equity needs of people which seek conversion of these areas<sup>3</sup>. The aim is to achieve the long-term production of benefits from wetlands and the maintenance of the ecological functioning of these areas.

Conversion of wetlands through drainage and cultivation reduces local access to natural wetland resources, such as reeds. If this occurs without the provision of adequate alternatives it can force existing practises to become unsustainable, as community self-regulating customs and restraints break down<sup>5</sup>. For instance the drainage of part of a wetland by some farmers may cause there to be too few reeds in the wetland to meet local needs. Over frequent cutting will damage the reed beds and reduce the quality of the reeds they produce.

Sustainable wetland management should ensure people's continued access to resources in ways which maintain their livelihoods and the resources on which they depend. In other words conversion to agriculture must be limited so that other benefits are not destroyed or seriously reduced. In this way limited wetland conversion can be undertaken so that it enhances the benefits that local populations derive from the natural ecosystems but maintains those ecosystems.



Figure 1 - Local communities conserve parts of their wetlands to secure the availability of natural resources such as reeds used for thatching.

## People and Sustainable Wetland Management

This need for a balance in sustainable wetland management shows that conservation and the needs of the local people cannot be addressed independently of one another. To achieve a joint assessment from these

two perspectives it is necessary to involve the local people who can bring into the process their wealth of local knowledge, especially environmental understanding, and skills they possess to identify their needs and the specific compromises for sustainable ecological functioning that would satisfy them<sup>3</sup>.

Sustainable wetland management requires the active participation of the relevant stakeholders in the planning and implementing process. These stakeholders will include not only the wetland community but also beneficiaries who live downstream of the wetland itself, as well as those in the catchment, who get water from the wetland springs.

### Box 2 - Wetland Stakeholders in Illubabor

Sustainable management of any resource will be achieved only with the direct involvement of the resource users (social sustainability). A grassroots, participatory approach, rather than top-down approach, has been found to be essential for successful long-term sustainable use of natural resources. This participatory approach requires that all stakeholders are acknowledged. A wetland stakeholder is any person, group or institution who is dependent (partially or wholly) upon one or more wetland functions, the use of wetlands or wetland products.

In Illubabor Zone, the following wetland stakeholders have been identified:

#### *At the wetland level*

- The water collector – usually women and children.
- The reed harvester – 85 % of all rural households in Illubabor use thatch.
- The wetland cultivator – mostly middle class householders and share-cropping poor.
- The palm collector and their customers – the poor who weave craft products.
- The livestock herder – mostly asset-rich farmers.
- Medicinal and 'minor' plant collector – mostly herbal specialists.

#### *Downstream / broader level*

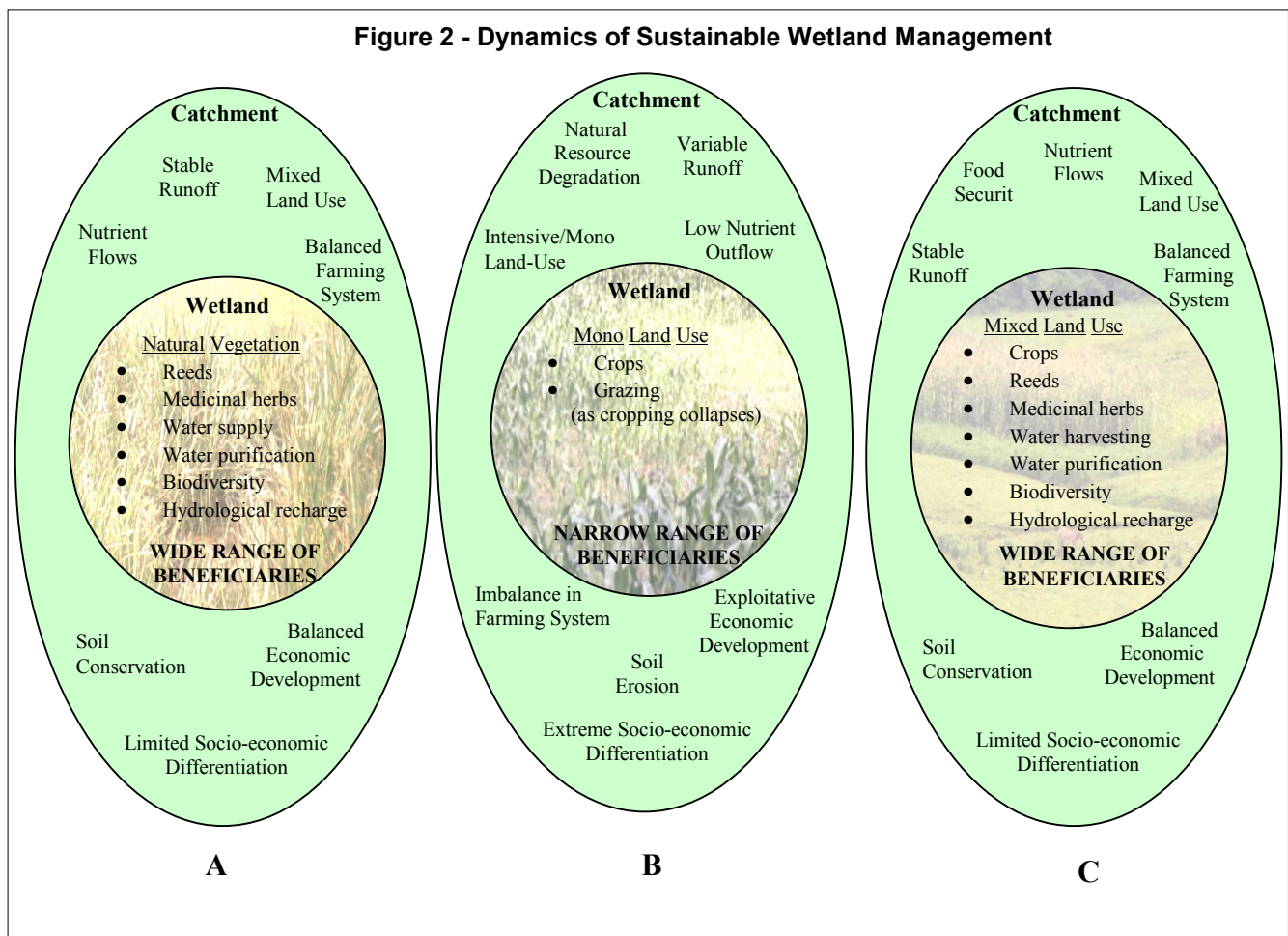
- Urban dwellers – who
  - depend on maintenance of water quality and quantity for drinking, sanitation and hydro power;
  - depend on thatch for roofing of granaries and on ceremonial occasions.
- Coffee producers and buyers – who depend on the use of clean water for coffee washing.
- Farmers in floodplain areas (e.g. Gambella) – who rely on wetlands for flood control and water flow regulation.
- The Ethiopian Government who, through its constitution and support for international agreements is responsible for protecting the environmental resource base of the country.

The precise mechanisms by which sustainable management can be achieved will vary according local circumstances: particularly the capacity and nature of local institutions and instruments (such as by-laws) for management, the specific management objectives and the environmental characteristics of the wetland. Since these factors vary from wetland to wetland, there is a need to devolve management planning to the local level so that implementation may be both ecologically sustainable and also socially sustainable, i.e. rooted in the community, its understanding and values (See PBN 7).

The devolution of management decision-making does not absolve national and state authorities from supporting sustainable management. Ethiopia does not yet have guiding principles for sustainable wetland management but the basic principles and their criteria should be established at national and regional state level through the Conservation Strategy of Ethiopia so that management can be monitored, improved and maintained

**Sustainable Wetland Management: Balancing the Benefits from Conversion and Natural States**

Figure 2(A) shows that ecological stability exists when wetlands are in their natural state. This state also provides a wide range of direct and indirect benefits for the local and wider community. The second part of this figure (B) shows that if wetlands and converted completely and solely have cultivation practised within them, this situation is one of low ecological stability. It also provides benefits to a relatively small range of beneficiaries. (This scenario is further explore in PBN 4). A sustainable wetland management system, which can maintain wetland functions and the production of a range of benefits, can be developed in the field situation encountered in Illubabor by following a mixed land use system within the wetlands (Figure 2C). This can ensure a high level of ecological stability, production of a large number of benefits and support for a wide range of beneficiaries. This mixed land use system may either be achieved through rotation of land use within the wetland so that there are always different land uses within the wetland. Alternatively there may be the same land use practised across the whole wetland for a number of years and then changed.



### Box 3 - Factors Affecting Wetland Management

In Illubabor, a number of local factors that affect the implementation of sustainable wetland management have been identified. These include:

#### *Ecological:*

- Size of the wetland
- Its catchment – land use and size
- Water flow characteristics
- Soil type
- Natural vegetation types

#### *Socio-economic*

- Degree of food insecurity in the community
- Market orientation of the community
- Previous history of wetland utilisation
- Population density surrounding the wetland
- Degree of community organisation for natural resource management

### Box 4 - The Principles for Sustainable Wetland Management

The principles and criteria for sustainable wetland management should be based on the ecological requirements for a sustainably functioning wetland. However they must also reflect current policy and government priorities as well as international standards.

Principles might include:

#### *Maintaining the essential values and functions of wetlands*

This would refer to the maintenance of essential ecological, hydrological, bio-diversity and socio-economic values and functions of wetlands.

#### *The maintenance or improvement of people's well being, including poverty reduction*

This would refer to people's access to the basic necessities of food, clean water and shelter.

#### *Improving the equitable distribution of costs and benefits of wetland management*

This would ensure that management activities did not benefit one sector of the community to the detriment of another.

### Applying and Disseminating Practices for Sustainable Wetland Management

From the study of a number of sites of good and bad practice it is possible to identify a number of practices which will help achieve sustainable wetland management, at least in the Illubabor / south-west Ethiopia situation<sup>6</sup>. These include:

- maintaining the normal flood regime for as long as possible each year,

- minimising the number of years when the flood is avoided completely due to drainage,
- controlling grazing so that the natural vegetation is not completely removed, and the soil is not compacted,
- avoiding double cropping within one year as this makes the period of soil disturbance and drainage too long,
- not cultivating wetlands with shallow soils,
- maintaining areas of natural wetland within the wetland even during periods of other use, these will act as sources from which the natural *cheffe* can regenerate and will act as areas of moisture storage,
- keeping an area of 50m (or 10 % of wetland) under *cheffe* at the head of the wetland.

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