

1. Valuing Wetlands for Livelihoods as the basis for Sustainable Management: The SAB Approach

KEY POINTS

- **Striking a Balance between livelihood development and conservation is needed to ensure sustainable wetland management**
- **Applying the functional landscape approach is essential to have an understanding of wetlands**
- **Enhancing the value of wetlands motivates communities to practice sustainable management**
- **Building community institutions is vital for coordinating wetland management efficiently**

SUMMARY

The SAB approach seeks to address the widespread and growing pressures on wetlands in Africa from agricultural and other uses. It focuses on the way in which natural resources need to be valued by communities if they are to be used sustainably. In this way the value obtained from the wetland motivates communities to undertake management practices which will enhance and sustain it. However, such uses have to be based on a sound understanding of how wetlands function, especially the functional landscape approach, and how they should be managed through community institutions.

1. Wetlands – a new agricultural frontier

In recent decades agricultural use of wetlands has grown in many parts of Africa so that these areas are now a new frontier for cultivation. This is driven in part by population growth and the degradation of long-farmed upland fields, which have led to land shortages. This pressure on wetlands has increased especially in countries which have suffered several droughts, such as Zambia and Malawi.

For poor rural households who are short of food, wetlands often offer good soils as well as water for irrigation, so that cultivation can take place in the dry season. In this way wetlands can provide a safety net for poor households.

Economically successful rural households are also increasingly using wetlands for irrigated vegetable farming to supply local markets. For these households, wetlands are a development resource which generate funds for new enterprises.

Such spontaneous responses to the farming opportunities in wetlands are encouraged by many African Governments and NGOs seeking to improve food security, reduce poverty and facilitate the diversification of rural livelihoods.

2. The Challenge of Sustaining Wetland Use and the SAB Approach

However, wetlands are fragile ecosystems; they can be altered in ways which are almost irreversible so that they become drylands. In such cases, the economic benefits provided are greatly reduced, and wider ecosystem services that control river flooding and help rivers flow all year, are undermined. Given these risks and the growing pressures on wetlands, the key challenge is to develop management techniques for environmentally and economically sustainable use.

Recognising this critical situation, Wetland Action together with Self Help Africa, developed the Striking a Balance (SAB) Project. The SAB project has tested an innovative approach to sustainable environmental management which seeks to allow use of the wetlands for a range of livelihood purposes and add value to these areas. This is proposed as a way of encouraging sustainable management practices, rather than imposing external controls and introducing payments to encourage people not to use the wetlands. The SAB method does not seek to preserve wetlands in pristine conditions, as that is not feasible given the overriding need for poverty reduction. Rather this approach creates a momentum for careful management of wetlands based on self interest – sustaining income from



The SAB approach seeks to allow the use of wetlands for livelihood development through encouraging sustainable management practices

The SAB MODEL

The SAB model has five elements:

- developing understanding and building confidence among farmers;
- formulating appropriate concepts and using them to guide action;
- applying technical measures to add value to wetlands and sustain their value;
- building institutions to strengthen wetland management;
- influencing the policies to support the farmers perspective.

these areas, and an enhanced understanding of how wetlands work. In this way a rationale is developed amongst wetland users for careful and sustainable management of these areas, with management measures and restrictions developed and applied by communities themselves.

Understanding the Functioning of Seasonal Wetlands

The first challenge in achieving sustainable wetland use is to understand the wetland dynamics especially water sources and threats to ecological integrity.

The SAB project has built on farmers' knowledge of the environmental processes in the wetlands and their catchments, which included a clear recognition of the links – in terms of water and sediment – between the catchments and the wetlands. The farmers identified various challenges to sustaining wetland use:

- upland deforestation and soil degradation which reduces infiltration into the catchment and its storage of water for slow release to the wetland;
- drainage, down cutting and gully formation in the wetland which lowers the water table and reduces the storage of water in wetlands;
- specific plants, such as sugar cane and eucalyptus trees which can “drink a wetland dry”, and a recent mechanical addition – the treadle pump.

Key Concepts

Building on discussions with farmers, four key concepts were identified which were used by the project in its work in both the Zambia and Malawi:

- **functional landscapes** – recognizing the links between catchments and wetlands, and adjusting land use to try to replicate natural conditions;
- **adding value** to wetlands - increasing the value of products from wetlands, so that communities are motivated to manage wetlands and their catchments sustainably;
- **institutional development** – building Village Natural Resource Management Committees to coordinate participatory land use planning in the wetlands and catchments to maximize economic and environmental benefits; and
- **Striking a Balance** – popularizing the idea that a balance has to be achieved between livelihood use and environmental functioning to sustain wetlands.

Technical Measures

Building on these concepts, a series of technical measures can be developed to increase the value from wetlands and sustain their functioning as wetlands in tandem with livelihood development.

Wetland Activities

- *Wetland zoning* – To control the expansion of cultivation and protect the centre of the wetland where natural vegetation will help stop erosion and gully formation. Other areas of natural vegetation across the wetland may be retained to help reduce flood surges, control erosion and enhance infiltration. Such natural vegetation is a biodiversity reserve which provides habitat for birds and some wild animals.
- *Domestic Water* - Wells, whether for domestic water or for irrigation, should not be in the centre of the wetland as they can become focal points for gully formation. Ensuring the domestic water supply in the wells, which rely on the recharge of wetlands, helps increase the value which communities see in wetlands.
- *Water Extraction and Treadle Pumps* – Use of watering cans for water extraction has limited impacts on the water table in a wetland. Treadle pumps however can have a serious impact and their use needs to be managed with community agreements.
- *Wetland cultivation* - Risks of erosion in wetlands due to cultivation can be reduced if cropping is restricted to small plots or beds surrounded by natural vegetation.
- *Crop cultivation methods* – Use of beds which are raised or lowered depending on the water table, can make the use of water in wetland cultivation more efficient. Plant spacing and hygiene are also important to ensure good quality crops.



Treadle pumps can have a serious impact on the wetland water table

Building Institutions to Coordinate Land Use Management

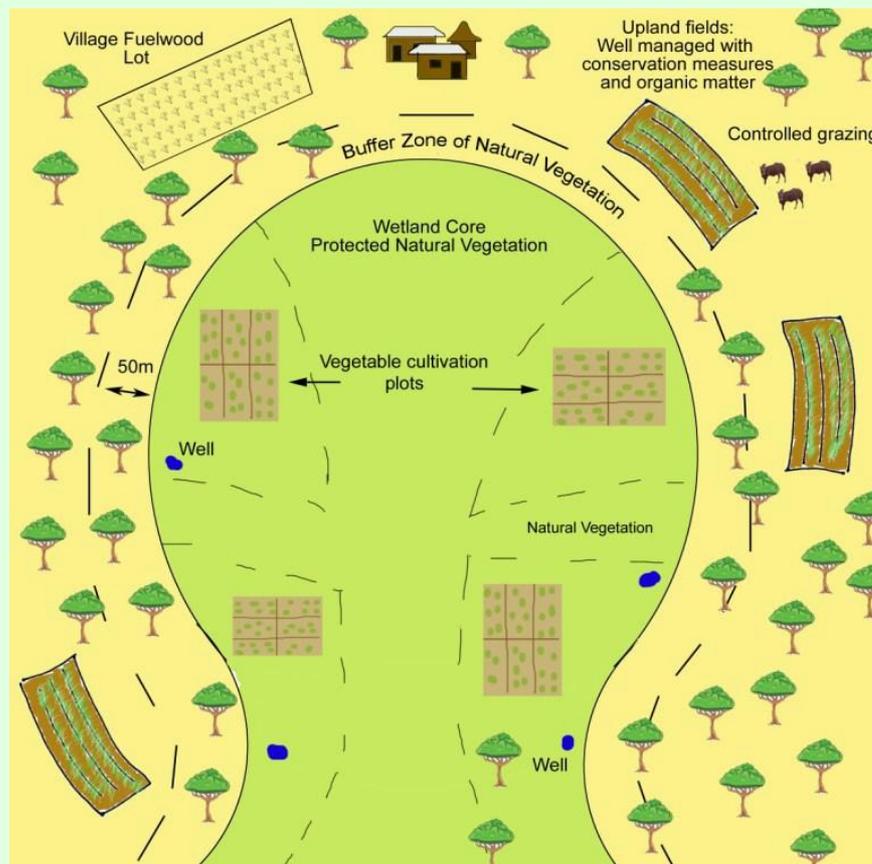
Community coordination is critical to the management of catchment and wetlands to achieve a functional landscape. Village Natural Resource Management Committees (VNRMC) are one way in which this may be achieved. Through such institutions and the plans and bylaws they develop, it is possible to ensure that the land is used wisely, balancing environmental functioning and livelihood needs (see PBN 2).



Construction of contour ridges in the uplands can reduce runoff and encourage infiltration

An 'enabling' policy environment

An enabling policy environment may be one in which government recognises the importance of local knowledge and locally developed institutional arrangements for wetland use, rather than seeking to prescribe the ways in which wetlands are used.



A functional wetland and catchment landscape

Upland Activities

- *Afforestation* - improves the infiltration of rainfall – which has positive effects on the wetland's water supply, and reduces runoff and erosion – which can create sediment deposition in wetlands.
- *Contour ridges* - can help reduce runoff and encourage infiltration of rainfall.
- *Organic compost* - will improve crop yields, enhance water infiltration into the soil, and also the storage of water in the soil to help crops overcome drought.
- *Conservation agriculture* – helps improve water infiltration and soil structure
- *Agro-forestry* – will help increase water infiltration, reduce erosion risks and improve soil fertility.
- *Wetland edge buffer zone* - at the lower edge of the uplands, this zone of natural vegetation will help prevent sediment and runoff reaching the wetlands.

Influencing Policy

The SAB approach links the field with policy levels, but is realistic about the influence on policy on the ground given the limited government field staff and resources. It emphasizes the need for an enabling policy environment, rather than a regulatory one, with policy encouraging good management of wetlands.

The SAB work recognizes that there are many government agencies with interests in wetlands and that there is a need to coordinate their policies as a first step, rather than try to develop an overarching wetlands policy. SAB has also sought to improve dialogue between government and NGOs as the latter have policies which affect wetlands and so can contribute to policy discussions.

3.Lessons for the Future and Scaling up

The SAB approach has shown that, despite being fragile and liable to degradation, wetlands can be used sustainably both to generate livelihood benefits and maintain environmental functions. Utilisation of wetlands does not lead to their degradation provided that the functional landscape approach is understood and applied. Indeed, the SAB approach has shown that it is possible to enhance the livelihood benefits from wetlands – and even those from the



Wetland food production is helping improve the nutritional status of communities, especially children and adults suffering from HIV/AIDS.

uplands, as well as maintaining the environmental services of these areas.

Further, the SAB approach has shown that communities can become more enthusiastic about sustainable environmental management through VNRMCs as the value of benefits from their wetlands increases.

Key challenges to address in furthering the success of the SAB approach include:

- a) **Scaling-Up the Functional Landscape Approach:** so that whole valleys and catchments are all managed with the same SAB principles, rather than just isolated areas belonging to individual villages;
- b) **Increasing and diversifying wetland-based incomes:** through fish ponds, bee keeping, crafts and improved market linkages so as to enhance the value gained from wetlands;
- c) **Managing land use pressures:** as vegetable production and other enterprises based on wetlands grow so as to maintain a balance of land uses and to avoid the collapse of wetland functioning and production;
- d) **Empowering locally developed institutions:** such as Village Natural Resource Management Committees, so they are sustainable and not dependent upon external intervention for their functioning.

5. A Framework for Dissemination in Africa

The SAB project is now sharing its experience with other NGOs and government agencies in Zambia and Malawi. This work will be extended into those parts of Africa where wetlands are important for food security, poverty reduction and environmental stability. To this end, training in the Southern Africa Development Community has been started, while linkages with the Food Security Unit in the Common Market for East and Southern Africa are being developed.

Wetlands are fragile resources but they cannot be ignored in the struggle to achieve the Millennium Development Goals. Rather than being seen as resources to plunder, or biodiversity hot spots to conserve, a balance has to be struck, ensuring long-term sustainable use of wetland for both livelihoods and the environmental services they provide.

FURTHER INFORMATION

Wetland Action is a not for profit NGO which provides technical support to field level organisations working on wetland and livelihoods. Its aim is to support the ecologically sound and socially sensitive use of wetlands for sustainable livelihoods. www.wetlandaction.org. For further details contact:

Adrian Wood, Wetland Action & the Centre for Wetlands, Environment & Livelihoods at the University of Huddersfield. E mail: a.p.wood@hud.ac.uk

Other partners in the SAB Project are:

- **Self Help Africa:** www.selfhelpafrica.org
- **MALEZA:** Malawi Enterprise Association. E mail: hmsusa@malezamw.org
- **NLWCCDP:** North Luangwa Wildlife Conservation and Community Development Programme. E mail: nlwccdp@zamnet.zm

The **SAB Project** seeks to reduce poverty among wetland-dependent communities in central Southern Africa. It achieves this by developing and testing strategies for the sustainable management of seasonal wetlands, including technical measures related to land husbandry and the maintenance of a functional landscape, and by influencing policies at the NGO, national and international levels, so that the role of wetlands in poverty reduction is better recognised.

This project is one of four Demonstration Projects of the **Wetlands and Poverty Reduction Project** of **Wetlands International** which has sought to influence national and international policies to ensure that the interconnections between the world's poor and wetlands are recognized. See www.wetlands.org.

POLICY BRIEFING NOTES AVAILABLE:

1. Valuing wetlands for livelihoods - the basis for sustainable management
2. Local institutions and wetland management
3. Wetland health assessment – monitoring sustainability
4. Wetlands and policies – diversity and networking