Malawi Enterprise Zone Association
North Luangwa Wildlife Conservation & Community Development Programme

Striking a Balance (SAB):
Maintaining Seasonal Wetlands
& their Livelihood Contributions in central Southern Africa

TECHNICAL REPORT 3

Wetland institutions and sustainable management of natural resources in Zambia and Malawi

Jonas Sampa, Patrick Thawe, Dalitso Kafuwa, Alan Dixon

The SAB Project is implemented in Malawi and Zambia by
Wetland Action, Self Help Africa, FAIR, MALEZA and NLWCCDP
in collaboration with the University of Huddersfield

Mpika and Simlemba **November 2008**

The project is a demonstration project of the Wetlands and Poverty Reduction Project of Wetlands International and it is carried out with financial support from Wetlands International under its Wetlands and Poverty Reduction Project financed by the Dutch Ministry of Foreign Affairs (DGIS).

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1. Functional Landscape Approach to sustainable wetland management. (July 2008) Patrick Thawe.

2. Sustainable cultivation of Acid Dambos. (November 2008). Jonas Sampa.

3. Wetland institutions and sustainable management of natural resources in Zambia and Malawi. (November 2008) Jonas Sampa, Patrick Thawe, Dalitso Kafuwa, Alan Dixon.

4. A baseline description of the ecological state and sustainability of use of three selected dambos in the Kasungu District, Malawi. (August 2008) Donovan C Kotze, Damian J Walters and Innocent Zibonele Nxele.

5. An assessment of the ecological sustainability of the use of three dambos in the Mpika District, Zambia. (December 2008) Donovan Kotze

SAB Policy Briefing Notes

1. Valuing wetlands for livelihoods as the basis for sustainable management – the SAB Approach. (December 2008) Adrian Wood
2. Local institutions and wetland management. (December, 2008) Alan Dixon
3. Wetland Health Assessment Methods. (December, 2008) Donovan Kotze & Adrian Wood
4. Policy Dialogues and Stakeholders. (December 2008) Adrian Wood
5. Wetland Use as an Adaptive Response to Climate Change in East and Southern Africa: Sustainable Wetland Management and the Functional Landscape Approach (December 2008) Adrian Wood and Alan Dixon.

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1. Introduction and background to the project

1.1 Importance of wetlands and *dambos* in Malawi and Zambia

Wetlands of various types exist in central Southern Africa, ranging from permanent and extensive swamps to seasonally flooded stream and river valleys and grasslands plains with seasonally high water tables, the latter being known as *dambos* (Figure 1). These wetlands account for between 2% and 4% of the area of Zambia and Malawi, and have long supported a range of important ecosystem services including the provision of water, fishing, grazing, seasonal agriculture and wild plant collection.

Figure 1: A typical *dambo*, in Simlemba District, Malawi

In the last two decades, periodic droughts in both Zambia and Malawi have led to increased winter / dry season gardening in wetlands by many households in order to supplement reduced upland harvests. While in such cases wetland use is a coping or survival strategy, in other cases the expansion of wetland gardening is an adaptive or diversification strategy by farmers who seek to take advantage of new market opportunities. Gardening in wetlands uses either residual moisture in the soil, or hand irrigation or medium-cost technologies, such as treadle pumps (TP), to draw water from shallow wells (Figure 2). Overall, in many parts of Zambia and Malawi, *dambos* or seasonal wetlands have become a new cultivation frontier, with some being almost completely transformed.

Intensification in the use of seasonal wetlands across Zambia and Malawi (Figure 2) represents a new challenge for local communities in terms of their capacity to manage the use of these natural resources and especially the increasing demand for access to, and control over, wetlands.

Figure 2 – Treadle pump irrigation and *dambo* agriculture

In particular the need for sustainable use of these areas raises questions about the need to ensure the various utilisation strategies employed are both environmentally sustainable, and economically beneficial. Experience elsewhere in Southern Africa has shown that *dambo* exploitation can lead to soil erosion, gully formation, water shortages and subsequently the loss of *dambo*-based livelihood opportunities. In addition, there are conflicts over use of these valuable resources as people compete for access and control. Hence, a key challenge at the present time is to identify ways in which wetland benefits can be sustained through the application of sustainable management practices by the local communities and the coordination and "enforcement" of these. Poor wetland management practices remain a threat to the survival of wetlands unless natural resource governance mechanisms are functional and institutions built to operate these.

1.2 Striking a Balance

"Striking a Balance: Maintaining Seasonal Wetlands and their Livelihood Contributions in Central Southern Africa" (July 2006 – December 2008) was a 30-month project (the SAB Project) to explore how to manage seasonal wetlands in Zambia and Malawi in a sustainable way. The project was initiated under the management of Wetland Action in partnership with Harvest Help (now Self Help Africa) and Find your Feet and funded by the Dutch government through Wetlands International. In Malawi the local partner NGO, Malawi Enterprise Zone Association (MALEZA), was responsible for field implementation of the project activities in the Simlemba Traditional Authority area in Kasungu District (Figure 3). There the SAB project was linked to the overall on-going wetland activities of MALEZA's Simlemba Sustainable Rural Livelihoods Project (SSRLP), which began in mid 2005,

and is run by MALEZA. In Zambia, the North Luangwa Wildlife Conservation and Community Development Programme (NLWCCDP) has been responsible for the implementation of SAB project activities in Mpika district, Northern Province. *Dambo* management and extension have formed part of NLWCCDPs field activities in its CHIMU project since 2002. The SAB project has been undertaken at three sites in Mpika District (Zambia) and three in Simlemba District (Malawi).

Figure 3 – Location of Mpika and Simlemba

1.3 Aims and objectives of the project

The overall aim of the SAB project is to reduce poverty among wetland-dependent communities in central Southern Africa, by influencing national and international policies to ensure that the interconnections between the world's poor and wetlands are recognized. The project aims to support sustainable wetland management through a functional landscape and multiple use approach, including the development of functional institutions to ensure sustainable use. The project seeks to achieve its overall aim through two specific but related purposes:

a) to develop and test strategies for the sustainable management of seasonal wetlands, especially *dambos* and small river valleys, in Zambia and Malawi, including technical measures related to land husbandry and the maintenance of a functional landscape, as well as develop social capital and institutions at the community level;

b) to influence national policy and international conventions, as well as NGO policies, in order to better recognise the role of wetlands in poverty reduction and the links between poverty reduction and sustainable wetland use, through learning networks, information dissemination and mini-workshops / roundtable discussions.

2. Local institutions

2.1 What are local institutions?

Local institutions take different forms. They are both organisations, such as management groups or farmer co-operatives, and the arrangements they make – such as guidelines or rules. In addition, institutions can also be rights and responsibilities, or relationships between people, or groups of people. In the context of community based natural resource management, local institutions are typically composed of people and their working arrangements which often include shared formal or informal rules and understandings relating to resource boundaries, access and allocation, and conflict resolution. Local institutions play a pivotal role in mediating local peoples' use of natural resources and their wider relationships with the environment. Hence they have often been regarded as essential prerequisites for the sustainable management of common property resources, particularly throughout the developing world.

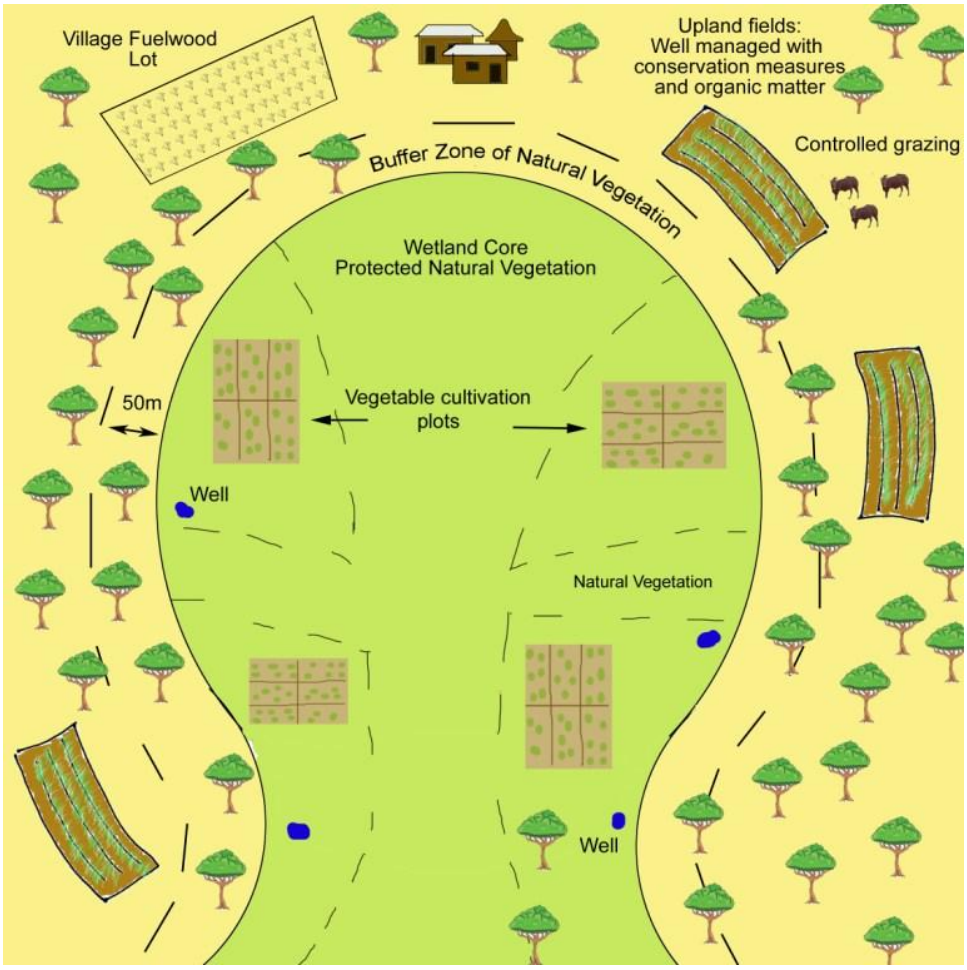
It is critical to understand the factors which influence the long-term sustainability and effective functioning of these local institutions. So called 'indigenous' traditional or cultural institutions which engage in community mobilisation, social care and natural resource management are common throughout Africa. They have been developed at the grassroots level from indigenous understandings of the local environment and this enhances their capacity to be socially sustainable, in that they function as a result of community support and social capital, rather than a dependence on external assistance. Local institutions imposed in a top-down manner by NGOs or government, are less likely to be sustainable at the community level, not least because of a lack of local consultation or sensitivity to existing socio-cultural structures, such as the village headman or area Chief.

However, not all local communities engaging in natural resource exploitation have developed appropriate local institutional arrangements, and this is especially the case where the use of a particular resource is occurring for the first time or at a new level of intensity, as is often the case with wetlands. In such instances, external organisations arguably have an important role to play in facilitating the development of local, grassroots institutions provided they are sensitive to the existing structure and do not take over their responsibilities. This process of institutional development should be throroughly participatory and democratic, with consultations and engagement that ensures institutions are supported and accepted by local people themselves. Fundamentally, external institutions should limit themselves to facilitating an 'enabling environment in which local institutions can develop.

3. Developing community-based institutions for *dambo* management

3.1 The SAB approach

The SAB approach is grounded in an analysis of what is necessary to ensure *dambos* remain as functioning wetlands. This work has identified the link between wetlands and catchments in terms of water storage and water utilisation, and has led to the use of the functional landscape concept which recognises how facets, or different parts, of the landscape or terrain are linked (Figure 4).



The functional landscape approach recognises the socio-economic and environmental interconnections between catchment and wetland use. For example, deforestation and the subsequent increase in catchment runoff from the uplands, can have a serous impact on wetlands in terms of gully formation, erosion and water availability. Catchment rehabilitation, through afforestation initiatives, the designation of natural vegetation buffer zones, and other soil and water conservation measures, are key components of an integrated system of wetland management.

Figure 4 – The Functional Landscape Concept

From the functional landscape analysis it is clear that there is a need to coordinate land use in the wetland to ensure that over-drainage, excessive water extraction and gulley formation do not occur and that sugar cane production is limited and eucalyptus growing is prevented in wetlands. Further, the community as a whole needs to protect the edge of the wetland with a zone of natural vegetation for water infiltration and sediment control, while in the uplands good land management on farmed land and afforestation in rocky areas is needed to improve water infiltration and the availability of dry season water in the wetland.

Based on this analysis, developing local institutions for managing wetland utilisation has been a key objective of the SAB Project in Zambia and Malawi. The project has aimed to institutionalise the functional landscape approach to wetland management (which builds upon local knowledge of wetland use and functioning) at the village and community level through

this development of local institutions, and to integrate new institutional arrangements with existing community structures.

As a starting point in both countries, the SAB supported staff have worked with village development clubs which have been established by the pre-existing projects, CHIMU and SSRLP. Club membership can include anyone with an interest in development and the improvement of rural livelihoods. The evolution from these village clubs of Village Natural Resource Management Committees (VNRMCs) headed by the village headman, is the next stage towards establishing a body of support within the community to address the sometimes difficult decisions which have to be made about land use and land allocation. For example, there may be pressures on village headmen to allocate all the wetland to people for cultivation, which then makes it impossible to retain areas of natural vegetation to support the sound environmental functioning of that wetland. Further, there may be a need to reallocate land by relocating people's plots away from the centre of the wetland where cultivation is best avoided in order to prevent degradation. Addressing issues such as these, which in time could affect many people, will require strong community support and adjustments by all wetland users.

Through its local partners, SAB has provided training for community development facilitators (CDFs), wetland users and members of the VNRMCs. It has facilitated farmer field visits, with the aim of raising awareness of variable experiences of wetland utilisation and management. The provision of the technical training helps people realise the need for coordination of land use and for the establishment of local institutions. Project staff have also supported the VNRMCs to develop bylaws that encourage environmentally sensitive practices in both the wetland and the catchment.

3.2 Participatory analysis for development

Development of institutions within each of the study areas was initiated via a programme of PRA sessions, with the aim of identifying the role of wetlands in the livelihoods of community as a whole, and the environmental status of wetlands and their related catchments as well as natural resources in each area. A key component of this 'baseline' programme was to highlight the existing institutional arrangements influencing wetland use and management.

The PRA baseline reports for both Simlemba and Mpika drew attention to existing community developed bylaws relating to the conservation of natural resources (forest and water) within the study areas. However, there was no evidence of the existence of institutional arrangements or bylaws dedicated to ensuring sustainable wetland management. This perceived institutional gap, therefore, was addressed through the participatory development of new institutional arrangements for *dambo* use

4. Developing the local institutions and community bylaws

4.1 The MALEZA experience in Simlemba, Malawi

In Malawi, one of the aims of MALEZA has been to facilitate the development of MALEZA village clubs with the purpose of introducing ideas about improved livelihoods to the communities. These clubs are trying to reinvigorate the existing Village Development Committees (VDCs) established by the government. These clubs have subsequently been supported in their efforts to establish dedicated Village Natural Resource Management

Committees (VNRMC) in the three pilot wetland areas. Whilst the VNRMCs complement government established community based institutions such as the VDC, Area Development Committees (ADC) and the community level Business Development Committees (BDC), they have been set up primarily to address wetland management issues in the context of the total natural resource base of the community.

The idea behind these VNRMCs, however, is not new. The Forest Act (1997) and the Community Based Forest Management Act (2003) endorse the idea of community-based institutions for natural resource (forest) management, along with the development of appropriate bylaws relating to sustainable utilisation of woodland and forest areas. Although these institutions have been established across the country they are not functional. Through direct engagement with local farmers, MALEZA has, in effect, taken up this idea and applied it to the emerging concept of the functional landscape as an approach to sustainable management of wetlands and their catchments.

The first stage in MALEZA's intervention in the process of VNRMC formation has involved facilitating an election of community representatives to this committee. Following this, MALEZA has encouraged the development of wetland utilisation bylaws by the VNRMC. This is undertaken independently by the committee, although MALEZA staff have backstopped this process to ensure bylaws are compatible with those that exist in other areas of community governance. The bylaws were also developed with the co-operation of the village headman and approved by the local traditional authority. These bylaws were subsequently approved by the District Development Office, and the District Forestry Office.

These bylaws differ slightly between sites, but generally include:

- Designating a five metre buffer zone from the centre of the wetland (stream channel), in which no cultivation is allowed.
- Ensuring livestock are always supervised in the wetland.
- Designating specific areas within the wetland for livestock grazing.
- Prohibiting the removal of indigenous trees from the wetland.
- Advising planting of crops in basins to use water efficiently (Malawila).
- Allowing only people from the village of Chiotha and affiliated villages access to Mandela wetland.
- Prohibiting the planting of Eucalyptus trees in the wetland.
- Limiting the area of sugar cane when water is short for much of the year.
- Maintaining a non-cultivation zone of 5-10m width with natural vegetation around the wetland.
- Protecting afforested areas and zones of natural vegetation from fires, including the use of firebreaks.

Widening the bylaws to take a holistic functional landscape approach is an on-going process for the VNRNCs.

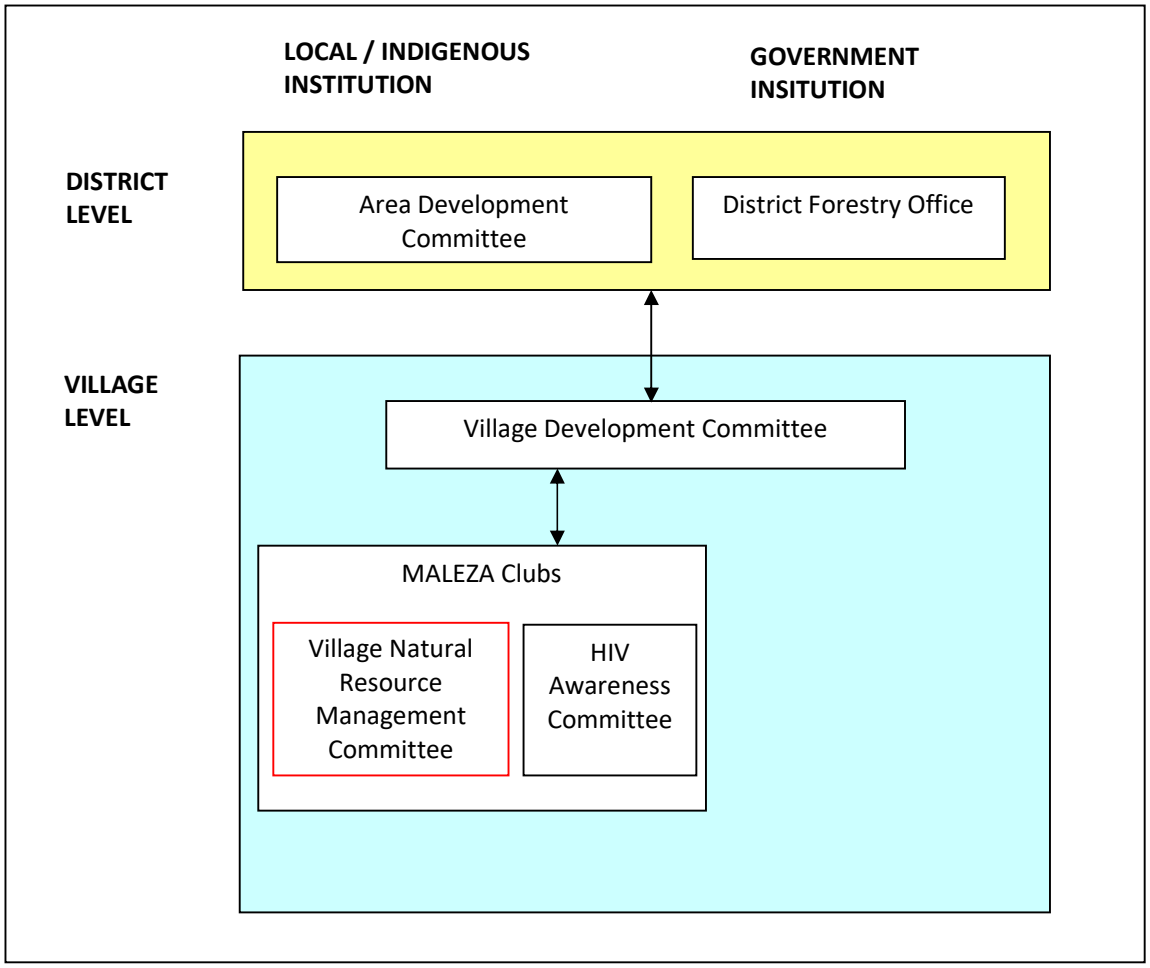


Figure 5 – Institutional Levels in Simlemba District

In each village the VNRMC meets at least once a month and examines any breach of the rules by the members of VNRMCs and the community at large. Failure of the committee members to attend a meeting can result in a fine being imposed - in Katema this included the village headman on one occasion. Failure to adhere to the bylaws can result in fines, but to date this has not occurred.

MALEZA staff report various challenges and issues facing the VNRMCs in Simlemba. First, although it would appear to be in their best interests to join, not everyone within the community is a member. It is unclear whether this is indicative of an unwillingness of some to participate, or simply a communication issue. Second, there appears to have been some cases of the village leadership wanting to install their own family members in a prominent position within the VNRMC, mistakenly seeing this as a means of access to food aid. Third, there are concerns over whether these community-based institutions are sustainable, particularly since they have been formed via a process of external and short-term intervention. The way ahead, according to MALEZA staff, is the forging of closer links between the VNRMCs and the government's VDCs which can act as a steering group; links to local village headmen and area chiefs are also important where the VDCs are not very active. The rationale for these

proposals is that the VDCs, Village Headman Groups and Area Chief institutions, are sustainable in the long-term.

A prerequisite to the sustainability of these institutions, however, is their demonstrable effectiveness in managing the wetland environment and the provision of associated livelihood benefits. People are unlikely to become members and adhere to the bylaws unless there is a perceived and real livelihood benefit in doing so.

4.2 The NLWCCDP experience in Mpika, Zambia

As in the Simlemba case, NLWCCDP in Mpika has facilitated the formation of village clubs and the subsequent establishment of VNRMCs that focus on *dambo* management in all three pilot wetland sites. Community bylaws do exist for forest management, but there is little evidence that these are being enforced at the community level. There are between 5 and 8 members in each of the VNRMCs, all of those are also members of the various village clubs. However, it has been suggested that the VNRMCs are the more active institutions, because they are 'less political' in nature and have been formed by local people themselves. At the Mpika sites, the chairman of each VNRMC is also the village headmen. There is also a treasurer and a secretary in the VNRMC. Representatives of each of the VNRMCs come together at a sub-district level to form the Area Natural Resource Management Committee (ANRMC), and there are plans to develop this into an Mpika District *Dambo* Management Committee (although it is not clear whether this would become a government institution). The rationale for this recognition by the District Council is that the individual VNRMCs would be stronger if they were recognised in some way - by the DC or the District Forestry Office.

In Mpika, ten bylaws relating to *dambo* utilisation have been developed by representatives of the VNRMC, with the help of NLWCCDP. These bylaws have been approved at the village level and then by the area chief. Within each VNRMC there is a sub-group (which usually includes the village headman) who is responsible for enforcing the bylaws.

The bylaws include:

- Land in the wetlands should not be drained and cultivated within 30m of the edge of the *dambo,* and especially the head of the *dambo*.
- Drainage and cultivation is prohibited within the *dambo* in the first 10m from the centre stream, or if the *dambo* has a steep slope, 20m from the centre of the stream. (The rationale for this is the maintenance of natural vegetation to control erosion and maintain water.)
- No one should drain, plough or cut trees around water sources.
- Deforestation and cultivation in the catchments should be avoided within 50m of the *dambo* edge.
- Use of forest resources in the catchment is only permissible on one day per month.
- Degraded forest areas should be rehabilitated by controlling cutting and burning.
- No late burning should occur in the *dambos* or its upland fringes; burning should be only in June to reduce damage to the vegetation.
- No one should wash upstream of water collection points or near wells or water sources.
- People should use the correct types of traps or nets when catching fish, to reduce over-fishing.
- Goats should be put in an enclosure until 14:00hrs so that they don't wander too far and destroy *dambo* crops.

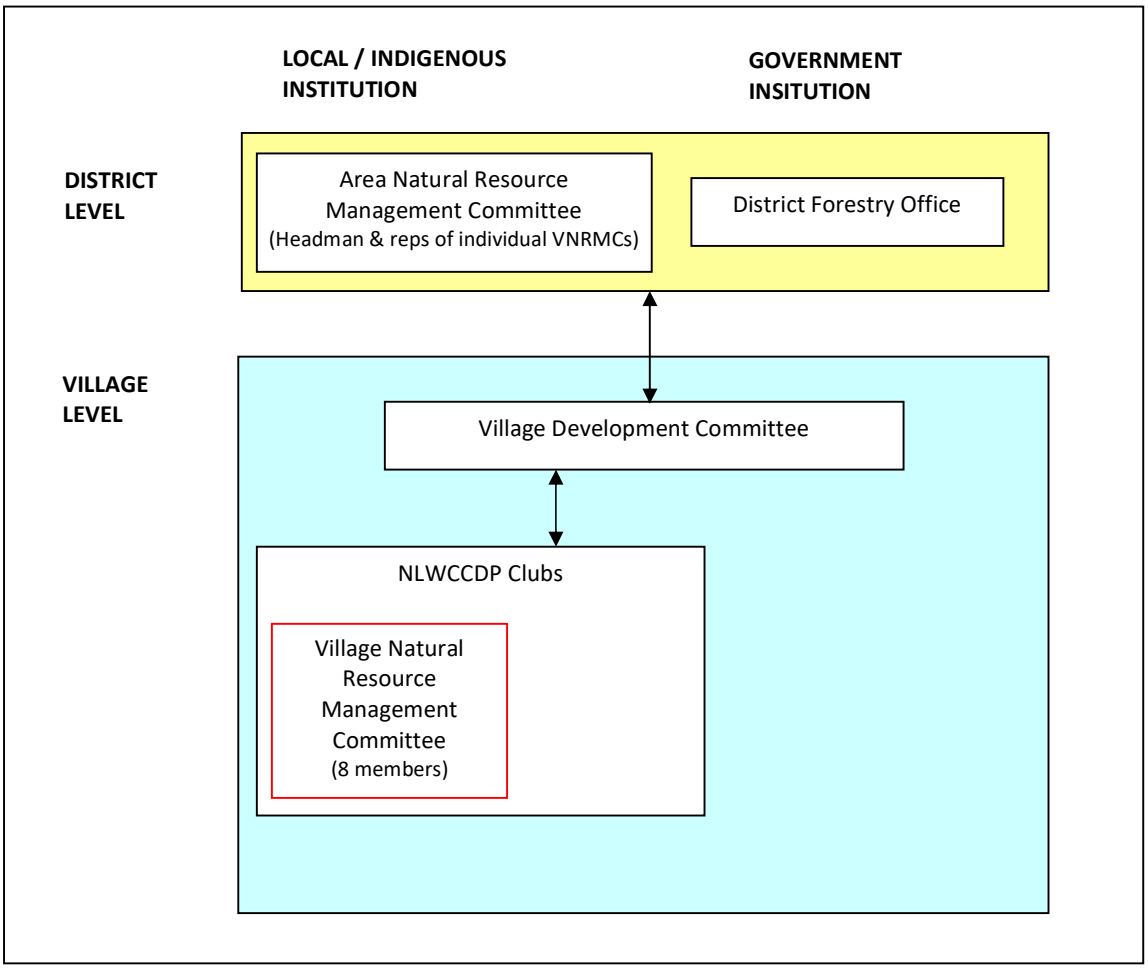


Figure 6 - Institutional levels in Mpika

Punishment for non-compliance with these bylaws typically involves being fined, typically having a chicken confiscated. If the offender refuses, the village headman will impose a punishment of hard labour, or in an extreme case the culprit will be asked to leave the village.

One potentially problematic issue at Mpika is that of the institutions being linked into local government structures (i.e. recognition by the District Council). There is the suggestion that this is needed to enhance their legitimacy and credibility, but at the same time there is a question over the extent to which this restricts their autonomy, the 'indigenous' nature of decision-making and local responsibility.

Deforestation for charcoal production has been a major problem in the area in the past, but this is now declining due to the attractiveness of the more profitable *dambo* cultivation as an alternative livelihood strategy for those with access to these areas. Clearly, the benefits of *dambo* cultivation are becoming more conspicuous throughout the area. However, project staff recognise that a key challenge in the wider area is persuading people to shift their *chitemene* (slash and burn) gardens away from the edge of the *dambos* and to reduce their

extent. Instead, *dambo* cultivation, which is more profitable and more environmentally sustainable, is seen by the project as the way ahead. Such a shift would make significant progress towards NLWCCDPs dual aims of environmental conservation and livelihood development. It is recognised, however, that the uptake of *dambo* cultivation in one of the three pilot wetland sites has also been limited by the distance from the market. In addition, many farmers see *dambo* cultivation as requiring significant inputs in terms of time, labour, seeds and tools.

Another challenge to the local VNRMC has been seen at one site where there is conflict within the community because some people's goats are eating other people's vegetables in the *dambo*. This reduces the appeal of *dambo* cultivation to many. There are also reports that wild animals are also destroying crops at another site which is within the Game Management Area close to the Luangwa Game Park. These issues need to be addressed in some way through the bylaws and their implementation.

5. Challenges for the local institutions

There are a number of challenges faced at present by the VNRMCs. These need to be addressed as part of a continual on-going process of adaptation and development of the VNRMCs.

5.1 Membership

Not all community members belong to the village clubs or VNRMCs; wealthier farmers who do not need support in developing their livelihoods, along with the poorest members of the community who engage in labour migration, have little to gain from engaging with these institutions. Other people simply disagree with the need for regulating access to wetlands and the use of natural resources. This is potentially problematic in that institutional sustainability arguably requires the co-ordination of all stakeholders in the adherence to bylaws. (The above case of animals wandering into areas of wetland cultivation exemplifies this point). Project staff see wetland livelihood awareness raising activities as central to the process of encouraging VNRMC membership.

5.2 Institutional resilience

The ability of the institutions to adapt and cope with shocks and pressures by developing new bylaws is key to their long-term sustainability. For example, it is likely that they will have to cope with increasing demand for wetland land once word of the success of wetland cultivation spreads. Ensuring that those who want to use the wetlands join the VNRMCs and adhere to the agreed institutional arrangements, is critical in this regard.

5.3 Links to government institutions

The extent to which the VNRMCs are linked to government institutions can influence their resilience and sustainability in terms of either guaranteeing legitimacy (and bylaw enforcement) on the one hand, or eroding their 'indigenous' credibility on the other. For example, strong links between local institutions and government institutions could reduce the local community's sense of ownership over the VNRMC and hence membership and support for bylaws could be undermined. Much, however, depends on the nature of such local-external institutional linkages; whether external institutions facilitate an 'enabling' or 'regulating' policy environment, and whether there is effective communication between both parties, and the representation of the views of all the stakeholders in the VNRMCs.

5.4 Catchment-*dambo* linkages

Clearly there is a need for co-operation between VNRMCs in different parts of the catchment, so that upstream areas have bylaws which are aligned with the interests of those downstream (and vice versa) thereby enabling equitable and sustainable wetland access and benefits. This seems to have been achieved to some extent in Zambia via the Area Development Committees (with representatives of each VNRMC, usually the headmen), although it does not meet regularly and it is unclear whether it would be effective in co-ordinating wetland utilisation activities on a catchment wide scale.

5.5 Sustainability

Because the VNRMCs have been formed as a result of the SAB project, it remains to be seen whether they will survive beyond the end of the project, once the backstopping support ends. However, most VNRMCs have been formed by interested village club members and in most cases the bylaws have been produced in a democratic and consultative manner. Further, since there is also an incentive to join the institutions - the bylaws ultimately aim to maximise the benefits for all, it is not unreasonable to suggest that they will continue functioning in some way.

6. Lessons and the way ahead

The experience with institutional development within the SAB project has raised a number of issues and generated lessons which need to be kept in mind in the search for sustainable wetland management in the project areas and more widely.

- **Community-based institutions**
  Institutions concerned with wetland management need to be rooted in the local community, and recognised as valid and legitimate by all community members. They should also be attractive in terms of their benefits, so that people want to join them.

- **Institutional sustainability**
  There is a need to review the process through which all the *dambo* related institutions have been formed. Has this maximised the potential for the long-term resilience and sustainability of these institutions, and their capacity to contribute to environmentally and economically sustainable *dambo* use? This could involve undertaking an end-of-project participatory evaluation with all the stakeholders.

- **Livelihood development**
  These institutions need to pay attention not just to the environmental sustainability of the wetland, but also to the way livelihoods can be supported and enhanced by sound wetland management. In this way these wetland management institutions can gain strong support from the community.

- **Enforcement of bylaws**
  There is a need to ensure bylaws are respected by all members of the community, whether they are involved in wetland management or not. This would involve a commitment to enforcement at the VDC level.

- **Higher scale coordination**
  There is a need to develop linkages between the various VNRMCs within each village area and beyond, so that catchment and *dambo* activities are integrated and co-ordinated. This could involve exchange visits between VNRMCs to facilitate understanding of upstream-downstream linkages. The VNRMCs should also be linked to the local government structure so that their plans can be incorporated in district development plans.

- **VNRMCs as extension sources**
  With the full participation of communities, there is an opportunity to develop extension material providing guidance on how to develop local institutional arrangements. Such extension material could become integrated into local 'indigenous' communication mechanisms such as story telling, ordinary village meetings and religious meetings. This would be based on the premise that it is important to understand the nature and development of existing institutions first before creating new ones.

- **Wetland health indicators**
  Developing environmental and development indicators for monitoring the environmental status (health) of each *dambo* is integral to the sustainable management of these areas. During meetings, members of the community should be encouraged to discuss their observations of these indicators. It would also help to assign responsibility for environmental sustainability to specific committee members.

7. Conclusions

Dambos are functioning ecological units whose internal operation is linked so that changes in one part affect other parts therein. They are also linked to the wider landscape through the water they received from their catchment, while changes in the catchment can affect the *dambo*. Upstream activities, whether in the upland or *dambo*, inevitably have an impact on the functioning of those *dambos* downstream, and hence the livelihood activities associated with them. As resources which offer a range of livelihoods benefits, these areas also tend to be used by different groups of people with varying interests who can often be in conflict. In short, the co-ordination of upstream-downstream land use between a wide range of stakeholders, represents *the* major challenge for the environmentally and economically sustainable management of *dambos* in Zambia and Malawi. Experience from the SAB project suggests that the participatory development of local institutional arrangements for upland-*dambo* management, is an appropriate and crucial first step towards achieving this co-ordination, and the wider goals of the Wetlands Poverty Reduction Project.