

**Community Based Natural Resources Management in
Mozambique: A Theoretical or Practical Strategy for Local
Sustainable Development?
The Case Study of Derre Forest Reserve**

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Sustainable Livelihoods in Southern Africa: Institutions, Governance and Policy Processes

Through work in southern Africa this research programme has explored the challenges of institutional, organisational and policy reform around land, water and wild resources. The case study sites have been in Zambezia Province, Mozambique, the Eastern Cape Wild Coast in South Africa and the lowveld area of southeastern Zimbabwe. Three broad themes have been explored:

- How do poor people gain access to and control over land, water and wild resources and through what institutional mechanisms?
- How do emerging institutional arrangements in the context of decentralisation affect poor people's access to land, water and wild resources? What institutional overlaps, complementarities and conflicts enable or limit access? What new governance arrangements are required to encourage a livelihoods approach?
- How do the livelihood concerns and contexts of poor people get represented in policy processes concerning land, water and wild resources in local, national and international arenas? What are the challenges for participation in the policy process?

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Summary

Through the case study of Derre Forest Reserve in Zambezia province, this paper explores the theory and practice of community based approaches to natural resource management. This approach has been widely promoted in southern Africa, and is central to elements of the Mozambican forestry and wildlife policy of 1999. The paper examines the history of community involvement in forest use in the reserve, and the changing nature of local organisations. In a place where limited livelihood options exist, and where poverty is extreme and widespread, gaining access to forest resources for livelihoods and incomes is critical. One route to increasing the benefits to local people has been the through joint ventures with private sector players. The experience of this has been mixed, as has the functioning of local organisations. The degree to which the emerging organisational arrangements are legitimate and inclusionary is questioned, as membership fees potentially exclude many poorer community members. The complementarities and conflicts with existing organisations, both formal and informal, are explored, and the challenges of institutional design for community based management raised.



Introduction: the policy context

Mozambique has undergone quite substantial policy changes since its independence, largely in response to changing economic and political environments. The state has moved from being the provider of all goods and services as envisaged by the central planning approach (with nationalisation, collective production systems and price control as the major instruments) towards a more participatory approach in which the role of actors such as the private sector and communities, in both political and economic spheres, is recognised (Nhantumbo 2000). As a result of this a myriad of policies affecting the use of natural resources have been approved, including:



- a) Land
 - Land Policy (1995)
 - Land law (19/1997)
 - Land law regulations (66/1998)
 - Technical appendix to the Land law (1999)

- b) Environment
 - Environmental law (20/1997)
 - Regulation for Environmental Impact Assessment (76/1998)

- c) Forestry and Wildlife
 - Policy and Strategy for Development of Forestry and Wildlife (8/1997)
 - Forestry and wildlife law (10/1999)
 - Forestry and wildlife regulations (2002)

- d) Agriculture
 - Agrarian Policy (1995)
 - Agricultural sector investment program, with a Forestry and Wildlife National Program adopted in 1998 (including a component in support of government initiatives towards the implementation of Community Based Natural Resources Management (CBNRM)).

- e) Water
 - Water Policy (7/1995)

- f) Fisheries
 - Fisheries Law (3/1990)

These are some of the relevant policies on renewable natural resources and the regulation of their use which have been recently adopted to guide sustainable development in the country. These policies are also relevant due to the fact that they determine access to resources by the almost 80% of the rural population who are considered to live below the poverty line (less than one dollar a day, to use the universal indicator).

The main discourse in all the legal instruments listed, especially of land and forestry, is based on the sustainable use of natural resources for the development of agriculture, which has been outlined in the Agrarian Policy. Devolving control over the resources to users and ensuring their participation in the design and implementation of policies and development initiatives, it is held, should lead to the adoption of sustainable use practices and control by those who use the resources. The major thrust is also that communities living in and around natural resource sources should be the primary beneficiaries of exploitation activities, and will invest in law enforcement themselves. These premises are translated into provisions such as: the recognition of rights of occupation (over 10 years); certificates for community land rights (group

tenure); the acknowledgement of customary rights and roles in land management; CBNRM as a strategy for communities allowing access to resources such as timber and non timber forest products to generate income; and the recognition in law of local institutions to safeguard these rights.

Furthermore, the government has approved the Poverty Reduction Strategy Paper for 2001 to 2005, which highlights key development areas, including secure resources rights, access to credit, access to technology, market infrastructure, and social services. Land delimitation should be seen as the basis for establishing clear property rights over land by the community. This is a means for development, not an end. Therefore, CBNRM, which encompasses agricultural resources, wildlife, water and fish as well as forests, should be implemented in the context of the land use options available in delimited community land. This is paramount for the kind of integrated land use planning advocated below and for a convergent approach to development.

Both community land delimitation and CBNRM systems are based upon the notion of common property resources, in which strong institutions are essential to establish clear rules of use and management of resources. Through recognition of customary rights and local knowledge of the resource boundaries, it is expected that communities will be protected from external usurpation of land and other resource use rights. This is in fact a step towards the recognition of private rights that the community can hold as a collective entity, with the potential to negotiate terms of use by other users (such as private sector entities). Nevertheless, knowledge of the value of the resources will determine the type of agreements and level of benefits that the community can demand in exchange for restricting its own use rights. External factors will influence this knowledge, including, for example, education.

Many analysts have concluded that the policy framework designed to ensure participation of stakeholders in the sustainable use of resources is well laid out. The question, however, is how this translates into implementation? Southern African countries have embraced CBNRM as a rural development strategy based on the devolution of some level of control over the resources to the local communities. There are some positive results in Namibia, Botswana, and variations in achievements of CAMPFIRE and ADMADE in Zambia. The common denominator of experiences in these countries is that they are wildlife and tourism based, which is hardly the case with the CBNRM initiatives being undertaken in Mozambique. While some initiatives are based on strong traditional ownership of resources, especially land (as in Botswana, although there has been a set back with the weakening of recognition of such rights), others have clear user rights for wildlife and other resources, but not tenure over land (e.g. Namibia's conservancy model). As far as benefit distribution is concerned, some leave the authority to local communities (again, Namibia and Botswana), while others still have strong government control through local level representatives (districts, in the

case of CAMFIRE). Others are based on strong traditional leadership, which in fact controls the process, as is the case of ADMADE in Zambia. Thus, there are different models and bases for the implementation of CBNRM in Southern Africa; however, all have the common objective of devising a way of improving the livelihoods of the local community.

Shackleton and Campbell (2002) describe four models of institutional arrangements governing CBNRM in Southern Africa:

1. district structures as the loci of power (for example, CAMPFIRE);
2. department-sponsored initiatives, such as village committees (as in Malawi and Tanzania);
3. structures outside state hierarchies, such as traditional leadership, without backing of the legal framework;
4. 'truly community based' (the well-established initiatives of Namibia, Maluleke and Lesotho, being cases in point. These have, according to the authors, powers to make rules, to approve developments, to enter into partnerships with the private sector, to receive revenues and distribute benefits).

Most would agree that control over decision-making is a condition *sin qua non* for CBNRM processes to be fully owned by communities and entrenched into their long term practices. However, contrary to some literature, this paper defends a position that gives less importance to the issue of who starts and who drives the process and more to the issue of how it is driven in order to ensure the participation of all concerned. The Derre case study will offer some insights on this.

Another discrepancy in the rights over resources as highlighted in Nhantumbo (2000) lies in the differences between communities in protected areas and their so-called 'support' or 'buffer zones' (who have extremely limited rights), and those who are in 'productive zones' or in 'multiple-use areas'. Protected areas are primarily under state jurisdiction, while productive areas are more likely to be controlled by the private sector (with communities having very limited access rights), and multiple-use areas are zones of competing uses and users (where communities can obtain rights subject to overcoming these conflicts). The attempted devolution of resources to communities tends to occur in this last landuse category.

Within this policy scenario a key question is: how can communities overcome the extremely limited resources rights available to meaningfully engage in sustainable use of natural resources through CBNRM? Is the government prepared to give way in order to ensure equity in resource distribution to all users, irrespective of where they are accidentally located? Mansur and Nhantumbo (1999) contend that there is a gap between the policy statements and the demonstrated willingness of the government to let real control over resources go to the communities. Is that scenario changing?

The pillars of CBNRM

CBNRM is a decentralization process aimed at giving grass roots institutions the power of decision-making and rights to control their resources. As stated by Seshia (2002), the nature of a decentralization process has substantial implications for access to resources by the rural community, particularly the level of authority that is being delegated downwards and the manner of representation of the interests of the wider community. Decentralization in natural resources management and of administrative and financial systems in Mozambique mainly results from recognition by the government of its incapacity to be the legislator, law enforcer and the provider of all services. Therefore, the expectation is that efficiency will result from the delegation of that authority to communities. As a result, the Land and Forestry and Wildlife legislation establish the need to create local level institutions such as Land Committees and the Participatory Natural Resource Management Councils (see 'Decision power' in Figure 1, next page). Therefore, as Seshia points out, the expectation is that governance (including transparency, responsiveness, accountability and minority representation) will be improved while simultaneously improving the participation of stakeholders in the decision making process and development planning. We shall analyse how far these indicators are translated into being, using the case of CBNRM, particularly in Derre Forest Reserve. Some of the questions worth asking include: whether decentralization leads to exercising democracy at lower level? Whether elites keep away or hijack the powers? How do different actors interact in the process of decentralization?

Farmers' decision-making environments in Mozambique for the adoption of new practices such as CBNRM are influenced by various factors, depicted in Figure 1. While the ultimate policy goals (as referred to in the previous section) are the improvement of livelihoods and the sustainable use of natural capital (indicated by a better condition of the ecosystem and an increase in household income), the household or the community needs to control the assets it has access to. Indeed, one of the major thrusts of CBNRM is to have formal rights to the resources on which sustainable use and management practices are to be implemented. The property rights discourse asserts that private ownership rights are a necessity, though not a sufficient condition, for long-term investment in natural resources. There are provisions in the Land Law for issuing certificates that formalize the holding of community land rights. However, this is applicable only for multiple use areas and not inside protected areas. Yet in some protected areas, as we shall see, there are high population densities. In these cases, a redefinition of the boundaries of the protected area might be an option for allowing the community to formally obtain land use rights.

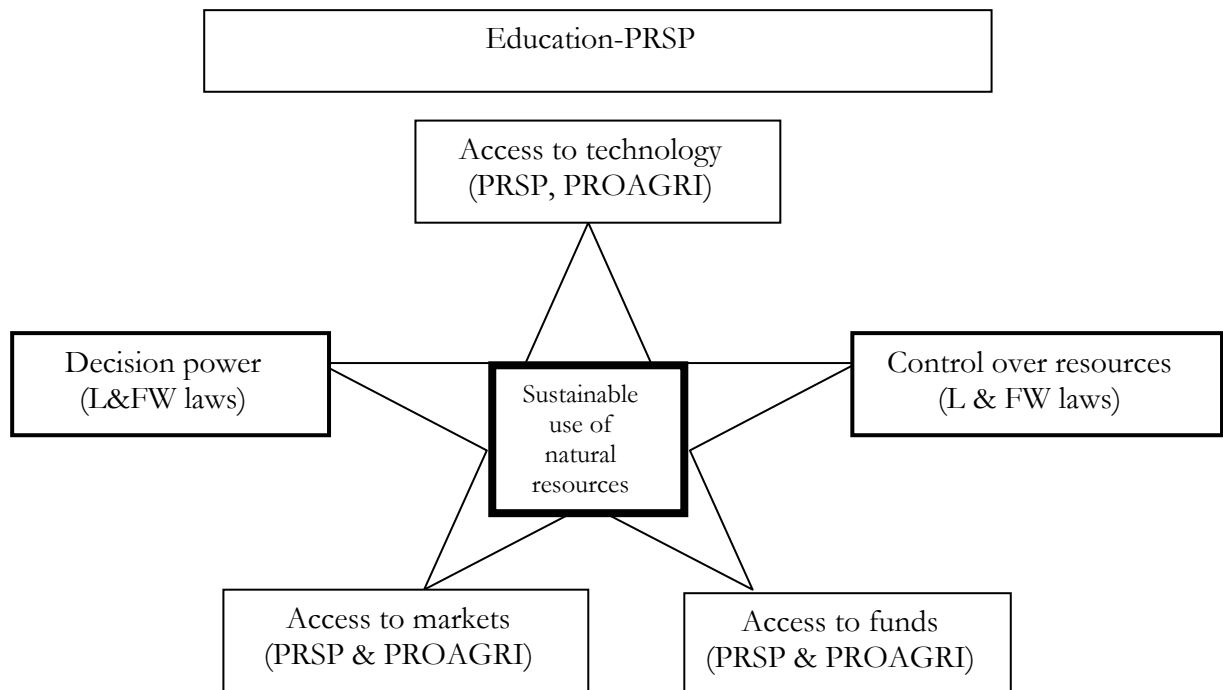
If such an option is taken, then besides being entitled to a land certificate, the license or concession for forest resource or wildlife use would

provide almost full rights to the resources in the area (if there is no State interest in any other resources such as minerals in the area). However, a precondition is to have a legitimate local representative (as discussed below). The next section will look at this aspect in some detail.

Control of resources implies the existence of boundaries, rights of exclusion, and the existence of institutions essential for exercising decision-making powers (in establishing conditions of use by third parties, as well as by the members of the community). The decision extends to the type of activities that could be carried out to add value to the resources (that is, enterprise development).

The Forestry and Wildlife (FW) law and the Land (L) Law through their CBNRM strategy and issuing of certificates, respectively, both provide rights of access to essential resources for community development (land, forests and wildlife). This is represented by ‘Control over resources’ in Figure 1.

Figure 1: Factors likely to affect the success or failure of CBNRM



Seshia (2002a) describes two approaches to the provision of rights as a means to improve livelihoods: the sustainable livelihoods (SLA) and the rights based (RBA) approaches. The author considers the latter as based on human rights, which emphasis development objectives, whereas an SLA approach focuses on the micro analysis of assets available to the household and how these determine the range of the activities possible and the consequent outcomes. Further, it places an emphasis on the sustainability of activities carried out. Farrington (2001) considers that

RBA is concerned more with people's entitlements (what they are or ought to be), while SLA analyses the impact of the entitlement on the livelihoods of the people. Therefore, the two seem more complementary than conflicting concepts.

The provision of rights to resources for small farmers and the community at large in Mozambique is aimed at improving livelihoods. Poverty reduction through access to resources is one of the main thrusts of the Poverty Reduction Strategy Paper (PRSP) defined for 2001-2005 by the Mozambican government. In fact, as Tanner (2002) states, the new Land Law is a powerful social development tool aimed at achieving equity and sustainable development.

The CBNRM strategy defines the involvement of communities as a means for promoting the sustainable use of resources while allowing communities dependent on these resources to obtain benefits. This represents a significant shift from merely recognising a basic right of access to resources for subsistence to recognition of the right to utilize the resources for income generation. Therefore, this will permit the transformation of natural capital into a realisable economic value and is likely to contribute to a variety of livelihood strategies and activities and consequent improvement in wellbeing. However, the process of rights claiming represents a challenge at the micro (household and community) level. The reason for this is that access to information about the rights, and the capacity to ascertain those rights, is determined by an intermediary or facilitator. In the case of Mozambique, various NGOs promoting community inclusion in the development process play this role. However, the capacity of these organizations to reach out to remote areas of the country is limited. Moreover, the government seems to have limited resources to pursue the full implementation of policy.

CBNRM in Mozambique and elsewhere should be implemented in an integrated rural development context. This means that despite rights and decision-making power being the central pillars of access to natural assets, they have to be complemented by other provisions. These include a strategy for access to technology and know how, funds for investing in the technology, which can be in the form of credit and marketing infrastructure with clear market channels. The latter is necessary to ensure transformation of the produce of CBNRM into tangible benefits.

The PRSP and the agricultural sector investment program (known as PROAGRI) provide operational ways of addressing the full pillars of CBNRM. Nevertheless, integrated, rather than sectoral, planning is key to addressing the development issues. The priorities of road construction, provision of health and education facilities, extension services for the adoption of improved agricultural technologies, the implementation of community-led delimitation of land, implementation of CBNRM initiatives, exploration of tourism potential, etc., should be simultaneously addressed through a decentralized and integrated planning process at provincial and district level. Mozambique has a policy

framework conducive to the promotion of development in rural areas and aimed at reducing the gap between the urban and rural areas. Nevertheless, the wise planning of implementation is a condition *sine qua non* and the potentially positive impact of a conducive policy environment will become nothing more than a list of good intentions to reduce poverty without it. Therefore, community empowerment for sustainable natural resources management should be checked against each of the factors/indicators in Figure 1. It is clear that such a model is advocating complementary social protection of rural households, through the provision of rights as well as the means of transformation, until the achievement of a level of socio-economic stability.

Mansur and Cuco (2001) consider that the four pillars of CBNRM are capacity building, income generation, community organization, and empowerment. This is an improvement of an earlier version of the model (Mansur and Nhantumbo 1999), which included all but income generation, as this was seen then as the outcome of the strength of the other three variables. The importance of this is that CBNRM is still evolving in Mozambique, in terms of approach and depth; therefore, a model best suited for conditions in the country has yet to be completed. Such a model is essential to explain the approach in a forest-based participatory management arena with scant incidence of wildlife, contrary to many of the CBNRM experiences in the region, whose success is generally associated with the high value of its major resource, wildlife.

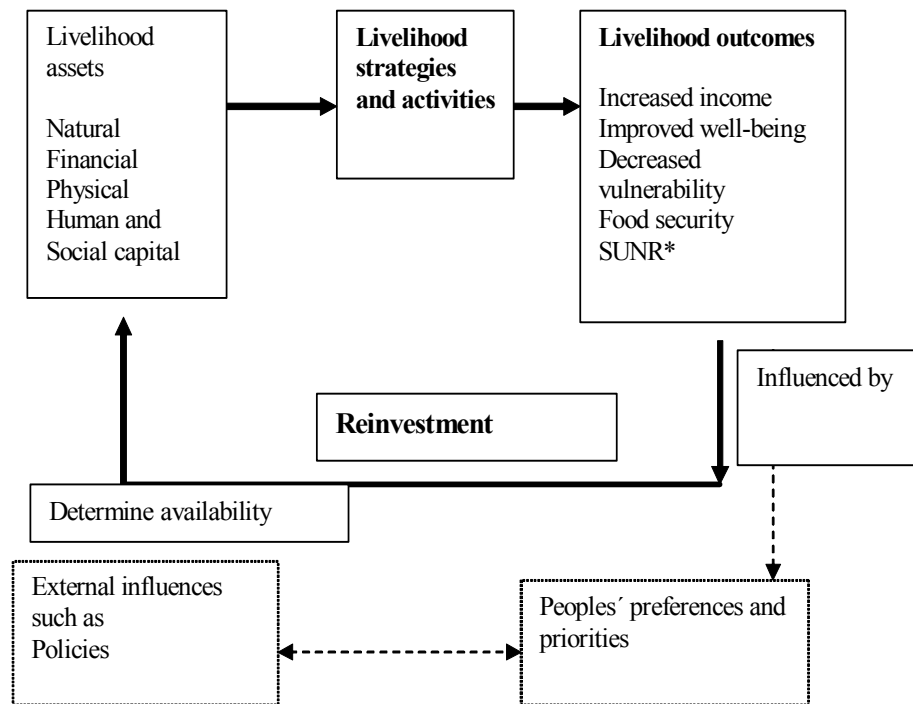
Although the analytical framework presented here reflects development in Mozambique, it is essential to tie this with theoretical developments elsewhere that have helped explain the processes that are being used to create and consolidate livelihoods derived from natural resources.

Theoretical framework

The Sustainable livelihoods framework (Figure 2, next page) has been applied in various case studies attempting to establish a link between the policy environment and access to resources such as forestry and water, besides the impact of such access on the strategies adopted by the rural population (Hobley and Shields 2000; Ashley 2000; Nicol 2000).

However, there are some arguments indicating that in order for the framework to establish such a link there is a need to include other elements, such as building a model of interaction between policy and livelihoods, a clear understanding of social and political capital, and adoption of a policy analysis approach that allows a feedback loop between policy and livelihoods (Shankland 2000).

Figure 2: Sustainable Livelihoods framework, with explanatory notes



The Derre case study presented in the following sections looks at a range of activities undertaken by the community, with and without the CBNRM strategy. The analysis is done in light of the type of resources that the community can draw on, the positive or customary rights to them, and the changes that are likely to occur in order to ensure the achievement of the goal of the strategy. The analysis of local institutions and how they influence access and management of resources is also an important factor.

This study will not attempt to bring a strong argument for or against the framework; however, it is worth emphasizing that the case presented is one that looks at the impact of implementation of what seems to be a good policy provision (CBNRM) at field level. Perhaps an objective policy analysis should have been complemented by the application of a quantitative approach such as systems dynamics, econometric or mathematical programming models to provide detailed impact, particularly at community and household levels. The latter has been applied in Mozambique and other Southern African countries and it clearly shows the impact of policies on the management of natural resources and household economies (Nhantumbo et al. 2001a). The strength of the quantitative model used is that it analyses at the micro level (that is, at the level of the typical household) the involvement of community in forestry and wildlife related activities in the context of a variety of other livelihood strategies that they undertake, such as agriculture, livestock rearing, and enterprises. The impact of resources constraints such as availability of land for cultivation, access for

harvesting wood for commercial purposes, labour distribution, etc., is analysed against the different activities that the family undertakes. The drivers of the interaction are the goals defined by the household, which, in the cases of Sofala and Manica provinces were, firstly, food security, income generation/employment second, and finally environmental goals. The various scenarios that were run did show that the forestry component is important for the household, and that neither increase in availability of land for agriculture, nor the introduction or enforcement of fees, nor increase on the prices of agricultural produce was sufficient to allow substitution of forestry harvesting for agriculture. This is exacerbated by the fact that the pillars presented in Figure 1 are not all fulfilled. However, this case study shows that qualitative assessment alone, based on the framework presented in Figure 2, already provides some indications of the impact (existing or potential) on livelihoods of local people. The analysis of the process of implementation, especially regarding the establishment and integration of new institutions, provides some insights for policy makers.

Having looked at the policy context, the evolving theoretical model of CBNRM in Mozambique and the general approach for analysis of livelihoods, the next section will discuss the case study.

Derre case study

Introduction

Community Based Natural Resources Management is the strategy for the social objective defined in the Forestry and Wildlife Policy. This policy aims to have greater involvement of local communities in the management of natural resources and ensure that they receive benefits from those resources. The main foundation for implementation of this strategy is the existence of the Land Law, which establishes that communities can have access to land through land delimitation process and acquisition of a Land Use Certificate. However, the challenge has been for the communities to secure these rights.

There are 42 CBNRM experiences in the country, apart from the Derre case study, out of which only 4 are in Zambézia. However, there are other interests in the province and according to data collected early this year there are currently 37 (out of 73 in the country) community land applications, a small number of which have had their certificates issued (Nhantumbo 2002). The low issue rate may be an indication of conflicting interests arising from the allocation of land to community or to private entities. This is a cause for concern, given the fact that the government has established three months as the maximum period of time for processing applications from the private sector. The likelihood of the community losing out in the process is significant, which in turn can undermine the envisaged fair distribution of resources through CBNRM initiatives (*ibid.*).

Most CBNRM initiatives, as previously mentioned, are being implemented in the so-called ‘multiple-use areas’ where communities can have their land use rights acknowledged through the award of a land certificate. However, in the areas of strict State jurisdiction – the protected areas – residents have limited rights, as the primary objective is conservation. Hence, this role is assigned mainly to the government, which in turn may choose to form partnerships with other stakeholders, including a local community group. Therefore, there are dual rights for the same target group: the rural community inside and outside the state protected areas. This suggests that communities in the areas of state jurisdiction should be resettled outside these areas if they are to have the rights that the rest of the population have in the multiple use areas. Nevertheless such a premise seems to go against the preservation of the cultural values that communities attach to the resources that they use. It appears, therefore, that not all people share the same bundle of rights. This may give rise to, or sharpen the imbalances even within the stratum of the poor part of the society. Furthermore, there may be potential for land conflicts in the resettlement areas, which are already inhabited.

Nevertheless, the capacity for enforcing such conservation requisites is very low indeed. As a result of such weakness, Derre, despite being a protected area, and apart from supporting the livelihoods of the resident communities, also has private sector activities, such as forest harvesting for exportation of logs or processing in Quelimane. Even though the harvesting is illegal, licenses have been issued by authorized government entities involved in corrupt activities. The illegal harvesting ceased to a certain extent with the introduction of drastic measures at the provincial level, as well as with the involvement of the local community in the management of the resources.

Given this discrepancy between compliance with the conservation objectives and economic interests, Derre is an interesting case study in which to analyse:

- existing institutions and their relationships;
- the establishment of new institutions in the context of the CBNRM strategy in relation to existing ones;
- the roles of the different stakeholders in the management of the resources;
- the relationship between the new institutions and the private sector;
- the potential and existing models of partnership and benefit sharing mechanisms;
- the economic and development opportunities being brought by CBNRM for the local communities and other stakeholders;
- the community’s perceptions of CBNRM and who is involved.

In addition, Derre Forest Reserve provides an opportunity to look at the complementarities or conflicts between local institutions envisaged under

the Forestry and Wildlife Law and the Land Law. These comprise of, respectively, the COGEP – participatory management councils integrating community representatives, private sector, local government authorities, local associations, and NGO's – and 'land committees' consisting of three to nine community representatives elected during the delimitation processes. Another dimension that can be added is the analysis of the traditional authority presence and its role in the groups representing the community. This will allow us to see where the power lies (or can potentially lie) within COGEP and the land committees.

In order to respond to the issues raised above, primary data was collected in Derre Forest Reserve located in the Derre Administrative post, which is under jurisdiction of the district authorities in Morrumbala. This followed an exhaustive process of identification, which included literature review and visit to various stakeholders. To obtain as much information as possible, two methods were used. Firstly, focus group discussions were held, which gave a general idea of which institutions are governing the CBNRM initiative and their relationship with the various local stakeholders. Secondly, semi-structured interviews with individual households were also undertaken, to gauge the impact of this initiative at micro level. The foci here were on the sources of livelihoods and strategies adopted by the community with and without CBNRM, as well as their impact on the general wellbeing of the community. This was looked at in the context of existing and potential market opportunities that allow the realization of tangible benefits.

Interviewees included traditional chiefs (actual and to be), the *group dynamizer secretaries (grupos dinamizadores)* apart from families who are not directly linked with the local power structures (governmental and traditional). It has to be noted that the interviews were not meant to have a statistical significance but to try and cover a range of households in order to get a picture of opportunities in the studied areas. Therefore, the interviews were not structured and only pointers were listed to facilitate eliciting of the relevant information.

It is worth underlining that it was difficult to have any quantitative information on yields, sales, and the like; therefore quantitative analyses could not be performed. The reason is partially due to low literacy levels, but also the technologies used in the production (intercropping), management practices (consuming crops still in the fields, for instance), harvesting and storing with the cobs or as grain, the storage facilities which do not allow for long term conservation lead to crop losses, etc. These factors affect the objectivity of any attempt to quantify the inputs and outputs of various activities, unless long-term seasonal observations of household behaviour are done. In addition, when it comes to providing information on the sales, which are not done regularly nor the exact amount quantified (apart from the fact that income from sales is immediately used for purchasing other goods), it is difficult to keep a reliable mental record thorough the year.

The case study is structured to provide a socio-economic context, outlining the macroeconomic objectives, followed by an analysis of the existing and potential economic opportunities in the wake of the CBNRM strategy in the country, including an analysis of potential partnerships and the role of institutions. Finally, concluding remarks highlight the question of whether CBNRM presents a real or ‘conjured’ opportunity for the sustainable use of natural resources and derivation of economic gains by those involved.

Socio-economic context of the case studies: some indicators

Improvement in the wellbeing of the most impoverished people in the country is the main thrust of the Government’s Poverty Reduction Strategy and Plan (2001-2005). The target is to reduce poverty from 70% in 1997 to less than 50% in 2005. The measures to ensure that such goal is achieved include interventions in the areas of education, health, infrastructure facilities, good governance, rural development, and improved agriculture as well as the disciplined management of macro economy and fiscal policies. Empowerment of communities, through the design of conducive policies in the agrarian sector and decentralization, particularly, using PROAGRI (the agricultural sector investment program) to entice diversification of livelihood strategies while causing low impact to the environment, are considered the key factors for positive impact. Access to resources, particularly land, is considered as being paramount for the success of such a strategy.

Therefore, in order to assess even qualitatively the impact of various government policies in achieving these goals, it is essential to look at a few indicators for the district of Morrumbala, where the case study is set. Indicators for Maganja da Costa district are also included as the case study on the new institutions for access to natural resources is carried out. Table 1 shows general information on the two districts.

Table 1: Surface and population

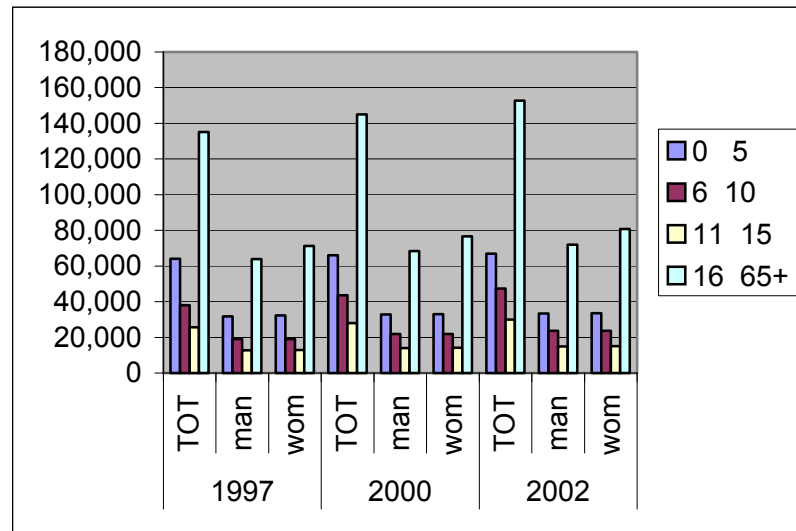
| Province and District | Surface | | Population (Inhabitants) | Pop. Density (Inhabitants/Km ²) |
|-----------------------|------------------------|------------|--------------------------|---|
| | (000 Km ²) | Percentage | | |
| PROVINCE | 105 | 100 | 3,240,576 | 31.4 |
| Inland water | 1.9 | 1.8 | | |
| Land | 103.1 | 98.2 | 3,240,576 | 31.4 |
| Maganja da Costa | 7.9 | 7.2 | 244,635 | 32.2 |
| Morrumbala | 12.7 | 12.1 | 275,968 | 21.6 |

Source: INE (1999: 19).

Figure 3, on the other hand, gives details on the distribution of population by gender and age since 1999, focusing only on Morrumbala. There is a small difference in the number of men and women for all class ages below 15. However, above that threshold the number of women

becomes higher. Despite the fears in the country that the AIDS pandemic is affecting population growth dramatically, the figures of total population show an increase. This may be due to lack of reliable statistics on the number of deaths in the rural areas. Such information is important, as it is key to analysing the availability of labour, and hence the likely impact on livelihoods.

Figure 3: Population distribution by sex in Morrumbala



Source: INE (1999).

In terms of health facilities, Appendix 1 shows the absence of any hospital and the negligible number of health centers and health posts. There is one such facility for every 27,596 people in Morrumbala; Maganja da Costa is only slightly better off. Communities in these areas consequently rely heavily on traditional medicines derived from medicinal plants.

Regarding education services, the situation is not much better. There are only 68 schools for Primary One, and 1 for Primary Two. Hence, there are no opportunities for children to progress in education beyond the primary level. This indicates the almost certain perpetuation of low levels of development, since education widens the horizon and networks, and enhances entrepreneurship. The situation described illustrates the lack of even a minimum government capacity to provide basic services for an acceptable standard of living. The scenario clearly leads us to conclude that low literacy, scarce opportunities for employment (self and from elsewhere), and the absence of adequate health services mean that communities can only resort to exploitation of natural resources. Road infrastructure is also very poor, therefore limiting the marketing opportunities (Nhantumbo et al. 2001b).

Having given this general picture, the next section brings practical examples of the conditions and dependency on natural resources.

Existing economic opportunities in Derre Forest Reserve

Household characteristics

In general, the size of the interviewed household varies between three and eleven people. The larger families are extended families where parents, brothers, sisters, nephews, nieces or cousins were also present. Therefore, at least three to four people belonged to the latter category. There were also cases of small families, as a result of having lost as many as four children due to various illnesses (most commonly malaria, diarrhoea and abscesses).

One of the problems facing the communities in the field is the lack of potable water. In fact, since the interviews were conducted in the homestead, it was possible to obtain a detailed picture of the living conditions. Water was one of the main problems, impacting negatively on hygiene and health. Most of the households visited had ailing individuals and the symptoms were often similar (coughing, diarrhoea and fevers). The use of traditional medicine is the most common source of treatment against these afflictions. The health centres are located in the headquarters of the district and are generally difficult to access due to the lack of transport. The bicycle could not always be used, especially in the case of very sick people.

Finally, the other problem facing the community is the widespread absence of schools. The children have to walk long distances to school and facilities are only for primary education. After that they have to go to other districts or simply not proceed. The illiteracy level is high in the interviewed households, concurring with the district statistics presented in above.

Agriculture as the main livelihood option

In terms of agriculture there are a range of crops that the interviewed households cultivate as a form of food security strategy. The families farm more than one plot (maximum observed is four) and this is distributed within the household as plots for parents, and for children (normally teenagers). Land partition amongst the siblings is a strategy to ensure security over a larger area, and to allow diversification of crops. Different crops are planted and different cropping systems and associations used in each of these fields to minimize the risk of crop losses. Some use one field for maize and the other for cassava, the two main staple food crops in the area. One of the fields is generally around the compound to secure daily demands for foods like cassava, pumpkin, and bean leaves. In addition, the plots are located in both the alluvial and dry land areas, allowing for cultivation in two seasons on the one hand, and maximising crop yields for crops like rice, which need sufficient water.

There are two cropping systems: monocropping, especially used for cash crops, while multiple cropping is used for subsistence production. The

use of the latter system allows for the provision of different crops throughout the seasons and also, in the case of leguminous crops, serves to replenish soil fertility. This is important in terms of augmenting the fallow period, hence indirectly saving the forest resources from clearance. Low input agriculture with basic instruments such as hoes, axes and machetes, without any other kind of input, is dominant in the area. The communities have no significant inputs and even the seeds are sometimes scarce. There are no extension services, which could contribute to the introduction of improved agricultural technologies.

Crops cultivated for subsistence include maize, sorghum, rice, cassava, peanuts, cowpea, beans (different types), pumpkin, melon, okra, and pineapple. There are also scattered fruit trees like cashew, mango and banana in the plot or around the household compound. Cotton, sunflower and sugarcane are mainly grown as cash crops. Although cashew trees used to be one of the major sources of income in Zambézia, they are no longer productive (due to age but also because of bush fires and outbreaks of pest infestation).

Access to land is not clearly regulated at the local level. Although the traditional chief is responsible for allocating land, in most cases the investing of labour for land clearance and harvesting is sufficient to acquire acceptable user rights.

There are several problems affecting the maximization of community income from agriculture. As stated in Simon et al. (2002), the limited surplus and deficient markets contribute to very low income levels. There are few accessible roads and very limited transport for goods and people. Therefore, having a bicycle is one of the main aims of local families, as it is an important means of transporting goods to the market (albeit in limited quantities). The bicycle is so important that local people use it as an indicator of wealth.

Both men and women (including children) are involved in agricultural production, despite the fact that the degrees of involvement vary. Generally, only family labour is used in agriculture. However, during the peak seasons (November to January) it can be hired. The payment for this labour is made in kind, with a quantity of goods (such as maize) in amounts equivalent to US\$0.37 to US\$0.56 for approximately three hours work (the normal working hours in agriculture due to the heat). In other words, even if this was permanent employment, one would only earn about US\$11 to US\$17 a month. Payment is also made in salt or local beer. The latter is directly consumed by the individual involved and is not for the household. The means of payment also shows how precarious the local economy is. Another indicator is that people generally only have two meals a day; this is reduced to only one towards the end of the wet season, when the stored food has been exhausted. It is also common for people, particularly children and women, to lack clothing – clearly demonstrating shortage of cash, since cheap clothes donated to the country are being sold in the administrative post town at relatively

accessible prices. Low agricultural productivity and production contribute immensely to the situation. Income from commercialisation of the agricultural produce would have greater potential to provide security and access to manufactured goods.

Livestock

Livestock is one of the main indicators of wealth in the rural areas of Mozambique. This constitutes insurance for the families, especially during the hardship periods. Nevertheless, there are not that many animals in Derre. The households visited, however, indicated that they have at least two types of the following: ducks, chickens, goats, pigeons, and pigs. The average number of goats and pigs is about five, while other smallstock numbers can reach as many as 15 of each kind.

It is important to point out the fact that members of the community borrow animals (a pair) for reproduction and return the animals with interest in kind (newborn animals). This mechanism maintains social networks and is conceptually similar to the restocking program being implemented elsewhere by the government to revive animal husbandry to pre-war production levels. In fact in Morrumbala, World Vision is helping this government initiative, but most of Derre's community has not as yet benefited.

Poultry are a ready source of cash for purchasing manufactured goods (and sold more frequently than the other types of animals).

Forestry activities

Forestry products, both non-wood and wood are essential for providing food supplements as well as supplying energy and material for shelter. It was observed in Derre (Galave and Golombe) that even when there is no mud to make the walls of the house, the poles provide the shade that many people call home. Hence harvesting poles, bamboo and firewood are common activities. Some of the most commonly mentioned non-wood forest products¹ include mushrooms (jowa), wild fruits² and tubers³ for local consumption. Worms also constitute a delicacy.

As previously stated, the first and most accessible forms of treatment for illness are provided from local medicinal plants. Some of those mentioned were cures for various ailments⁴, whilst other plants were in high demand for their aphrodisiac properties⁵. On the other hand, a particular plant known as *mavingano* was said to be important for the curing of a children's illness apparently caused by adultery committed by either of the parents. Whatever the validity of this, it was clear that some

¹ All non wood forest products are in local language and the writing here is based on the sound captured by the interviewer.

² *Jululu, macutucutu, mateme, matope, tema, irrembala, wemba, nbanbara, njai* and wild pear.

³ *Meole* and *menhanbe*.

⁴ *Ribariba, m'lala* and *nsumbe*.

⁵ *Gonazololo*.

medicinal plants play a decisive role in social control. In fact, knowing that there are currently various sexually transmitted diseases, it is in the interest of parents to have acceptable sexual conduct.

As also previously mentioned, harvesting logs has been banned and the community has requested a license for small scale harvesting to supply the local demand for furniture production (started by an interest group of carpenters). From the above it is clear that forestry products in Derre are mainly used for local consumption and not for commercial purposes. This seems to conform with the requirements of the management of a protected area, in this case a Forest Reserve, where the main objective is conservation of biodiversity. However, given the fact that the forest is home to a significant number of families who practice agriculture, and that illegal commercial harvesting took place until a few years ago, there seems to be a good case for revising the boundaries of the reserve. For this to be objectively done, an assessment of quantity and quality of resources has to be carried out so as to establish which area would be better degazetted. This might include an area for communities to extract wood for generation of income. According to the interest group their request for a license to harvest wood has not been attended by the Provincial Services of Forestry and Wildlife in Quelimane and this is probably due to the reserve status of the area and incompatibility with promotion of exploitation of wood for commercial purposes. This is a challenge to the implementation of CBNRM in this area and shows the need to invest in transformation of non-timber forest products (NTFPs) into marketable products to generate income. This is essential for motivating the community to use wisely their resources. Otherwise, there will be a weak foundation for local involvement in sustainable use of resources.

Other livelihood strategies

Local populations also strive to find other sources of livelihood, particularly through income generation or savings. For example, women produce traditional beer, exchanged for money or in kind and are also involved in pottery (although this does not provide significant revenue). Men tend to be involved in many activities, amongst which hunting⁶ is the base for consumption. The techniques used include the use of traps, dogs and fire. The last mentioned was pointed out by some as a cause for the increasingly scarce animal populations in the area. Illegal forest harvesting in the area, using chain saws and tractors, was said to have created noise and smells from which many animals have run away. Despite the fact that almost all families practise hunting, few admitted to doing it due to fear of being denounced to the authorities as practicing illegal activities.

Few are involved in logging with licensed companies and the fortunate families to have a member in such a situation earn about a US\$35 a month, which is very significant and elevates such households into a

⁶ Rats, rabbits, porcupines and *elefantinhos*.

more privileged stratum. Such families invest part of this income in paying labour to help them with cultivation, which means they have a bigger plot, higher production, and the potential for surplus produce which can be sold.

Another important activity undertaken by a few families is the buying and selling of dried fish. The trip can take as long as a week in order to bring back the product, as the means of transport is a bicycle and the quantities transported are significant. The cost of around US\$12.50 is incurred to purchase the product, with 100% recovery within two to three weeks. It is important to note that maize meal and dried fish are staple foods in this area. Rivers provide fresh fish, however some claimed that a lack of hooks was a constraint to fishing.

As mentioned earlier, basic tools such as hoes, machetes, traps and knives are used for agriculture, forest and hunting activities. Therefore, the craft of blacksmith is an important activity. Tools are sold locally at unit prices that vary between US\$0.75 for small traps to US\$1.25 for hoes. However, the main constraint for development of this activity is the low availability of materials.

Families produce cotton and sunflower for commercial purposes. However, the revenue is not substantial. For example, 20 kg of sunflower are sold at only US\$2.50 (the same price as maize), while the same amount of cotton is sold at US\$2.75. The prices are clearly very low, hence the low compensation from the investment made by the communities. These two crops are cultivated for a company (AGRIMO), which provides the seed and consequently dictates the price. There is clearly a monopoly situation, which is not favourable for the communities. Farmers do respond to price changes and the choice of leisure with the foregone income due to low prices is just an indication of that behaviour. Selling labour to other families is also a way of exchanging food products within the community.

It is clear from the list that there is enormous potential for developing a range of activities (albeit currently not so profitable) in order to improve the livelihoods of the local community. However, a concerted effort in providing basic assistance for development of the enterprises such as pottery and blacksmithing is necessary. For both, there is high local demand.

Apparently there are few partnership opportunities in the area given the weak presence of the private sector and the exploitative nature of the few that operate in the area. Nevertheless, government incentives such as tax reduction for importing inputs and equipment for developing capacity of processing non-timber products in the rural areas could boost the establishment of the private sector in the area. Nevertheless, instead of building a monopsony and hence influence the prices of the small sellers, it should be regulated in such a way that provides equitable share of benefits between the communities and the private entity. Partnerships are

in fact one of the strategies highlighted in the Forestry and Wildlife policy and legal framework, but which lacks clear mechanisms for its establishment and operation as yet.

Household assets

In the Sustainable Livelihoods framework analysis (Figure 2), the assets, be they natural or otherwise, are determinant to the choice of livelihood strategies. The households interviewed do not have any resources, including housing, that are very precious. Nevertheless, it is possible to see some innovation in that respect that creates different strata within the apparently homogeneous community. This is so despite the fact that most of the houses are constructed with reeds, poles, and grass covered, barked or not. The clay soil in the area is used for sealing the houses and is also appropriate for making bricks, which can offer better housing conditions.

Owning a bicycle is one of the main aims of every family interviewed. It has to be noted that Zambézia province is a unique place in the country, with high numbers of bicycles in both urban and rural areas, playing an important role in the marketing of produce. The situation in Quelimane, for instance, is comparable to Malawi (Lilongwe) where large quantities of firewood and agricultural produce are transported to the market using bicycles.

Land and forest resources are available relatively easily for satisfying basic household requirements, such as land for agriculture and access to firewood, non-timber forest products for consumption, and wood for construction. These 'subsistence use rights', however, are not officially recognized for any commercial exploitation (for example, of forest resource).

Social networks

The community has developed forms of collaboration amongst themselves, which can be capitalized on. For example, the labour exchange with payment in kind or the livestock credit with a notion of interest to be paid also in kind. The membership of emerging associations such as ACODEMAZA is also providing for some sense of belonging, cohesion and potential for growth. This is important given the household economy characteristics: low input agriculture, absence of favourable marketing opportunities and lack of other social infrastructures.

CBNRM: what contribution to the livelihoods of the communities?

The Finish Government is providing support to the National Directorate of Forestry and Wildlife in implementing a participatory natural resources management approach in the buffer zone of the Derre Forest Reserve. The project comprises resource assessment activities (especially looking at the potential for commercial exploitation of non-wood forest products), the development of income generating activities, the development of a strategy for reducing bush fires, and other actions. The creation or strengthening of a local institution to provide leadership and the general involvement of the community in the management of the project is considered to be important for local ownership of the process. Hence, the local association ACODEMAZA was identified as an organization with sufficient legitimacy to take the role of coordinator and enforce any rules and norms agreed upon.

Many other CBNRM initiatives in Mozambique are established and managed by external agents, such as NGOs, who are involved in the facilitation and coordination of activities. This role in Derre is being undertaken by what is, apparently, a local association. This using of local leadership to control the process is a progressive departure from the norm. However to be a member of ACODEMAZA requires the payment of a membership fee amounting to 25,000 Mt (US\$1.25). As many interviewees indicated, this is a considerable obstacle to joining the organization. In addition, old people, who are amongst the poorest in Derre, perceive ACODEMAZA as an elitist movement in which 'nude people' cannot participate. The perception is very important when one evaluates the legitimacy of this organization and its likely impact: a mechanism for exclusion seems to be in place, which constitutes a gross departure from the principles of overall participation embodied in the land law and forestry and wildlife law. Both recognize that involvement of all members of a community in the management is essential for the sustainable use of resources.

As the discussion of the range of current economic activities has indicated, there is potential in the area to involve the community in improved agriculture practices, create conditions for harvesting and primary processing of non-wood forest products such as medicinal plants, wild fruits, mushrooms and tubers. Activities such as carpentry build on local expertise (see Box 1, next page). Carpenters used species such as *Pterocarpus angolensis* to make tables, chairs, doors and coffins to supply the local market. Prices are very low to conform to the low purchasing power of this market.

Box 1: Influential organisations in the management of forest resources

Interest groups of carpenters have been created in the seven nuclei where ACODEMAZA works. The groups interviewed in Galave comprised 12 members, of whom 2 were women (indicated by the secretary). The group is being given support from the Finish project on Sustainable Forest Management. The support includes the provision of basic tools for carpentry and training.

The group was concerned with the lack of a license for harvesting the forest products to supply the carpentry. ACODEMAZA has applied for a license for harvesting. Before this initiative there was illegal harvesting conducted by a Chinese who employed cheap labour. Around 50 men were casual employees. They would each harvest 25 trees per day. When the Provincial Services of Forest and Wildlife in Quelimane banned the licensing, as the activities were also taking place inside the protected area (Derre Forest Reserve), illegal cutting continued at night. According to locals, the traditional chief gave his approval to the illegal activities.

There is some pressure from the local government for all the carpenters to join this association. However, apart from having adequate tools, members are not certain of the benefits to be accrued as yet.

In the analysis of the existing economic activities it was noted that there are various small-scale activities such as pottery, blacksmithing, beekeeping, and others. The creation of interest groups in these areas presents a potential for employment opportunities for a variety of people and can contribute to the improvement of the local economic conditions. However, this requires capacity building opportunities and the provision of seed funding in order to provide start-up capital. Again, access to technology, funds and markets, referred to in Figure 2, would determine the materialization of such initiatives.

There are various arguments for and against CBNRM approaches; in addition, it is seen as being outside of the mandate of conservation organizations and more properly the role of government and rural development institutions. Notwithstanding the fact that this argument may have some legitimacy, the more important aspect to note is that CBNRM will only bring tangible benefits if the message of conservation is coupled with a bundle of incentives for income generation. For such conservation activities to be effective, the users or beneficiaries have to have rights, financial capital, knowledge, and access to markets. There needs to be a domain within which people can exercise decision-making powers based on choices that are truly available to them. Thus, the issue is not who should provide support to enterprise development initiatives, but that tenure over resources (in the form of translatable rights), and sufficient funds are necessary in order to bring any meaningful change resulting from implementation of CBNRM. Integrated development, in the sense of a reconciliation of development and conservation goals, is key to sustainable development.

Another group that is being trained through the CBNRM project in Derre is the beekeeping group. The training includes the production of beehives using local materials to establish apiaries, collection of honey and primary processing to ensure good quality. About a dozen people are included in the first round of training, but the aim is to provide the same training for all the nuclei of ACODEMAZA.

Beekeeping is incompatible with uncontrolled burning; therefore, it is an important means of demonstrating the positive impact of not using fire as an agricultural practice. Use of bush fires is still the main cause for the destruction of forest and wildlife resources in the areas. However, this is a clear reflection on the lack of the means available for deriving value from the resources, either in the form of agricultural production technology or hunting.

From the data presented in the previous section, it is evident that commercial agricultural activities (cotton and sunflower) are being promoted through AGRIMO, a local private company. This presents potential for development of the local economy; however, it also poses threats to the natural resource base, as the expansion of land for production of these crops means the clearing of more forest land. The long-term impact is that as the prices fluctuate in the international market and as the land becomes less productive, the farmers stand to lose out when the company decides to move to other areas. This dependency is currently affecting the community; in fact, most farmers indicated that they did not produce the crops mentioned, as the prices are extremely low for the labour they have to invest. Therefore, looking at intensification of agricultural production with crops such as maize and other crops over which the farmer has some control, may provide longer-term security in food and other assets.

Having said that the absence of market infrastructure highlighted as one of the pillars of CBNRM (Figure 1) becomes decisive on whether the expected benefits from CBNRM can or cannot be realized. Strong institutions, meaning organizations and rules, are also crucial for leading the CBNRM process. ACODEMAZA seems to be playing the role of driver of CBNRM in Derre. However, not all community members are part of this entity as it will be discussed in the next section.

Existing and new institutions: Facilitating or hindering access to resources and opportunities?

The implementation of CBNRM requires, according to the Forestry and Wildlife Law (1999), the creation of Participatory Natural Resources Management Councils (COGEPs) comprising representatives of the community, local government, private sector, and NGOs or associations operating in the area. The role of this body is to make decisions on the

utilisation of local natural resources. These councils are proposed to formalise and operationalise the partnership concept; they are embedded in the law and explicitly recognized as one of the forms to ensure the sustainable use of resources. However, economic, political, or administrative power is likely to work in favour of the private sector (if indeed it is represented) and the government. Therefore, a relatively strong local structure representing the community would be vital in ensuring that decisions are taken equitably, and that the interests of the community are taken care of. Capacity for negotiation and access to information (legal and other) is also key. This is the framework that guides the analysis of the actors currently involved in the CBNRM project in Derre. Figure 4 (next page) shows the various partners (active and non active in the current structure of project implementation).

ACODEMAZA occupies the center (Level 2 of Figure 4) as the major driver of the process in Derre. Box 2 shows that it has strong representation and influence over the traditional authorities. Other players include government representatives. These two groups claim to represent the community, while they in fact represent the minority, i.e., ACODEMAZA members only. Furthermore, there was evidence of some conflicts within the traditional authority (Box 3) likely to generally weaken this institutional set up and impacting on ACODEMAZA in particular. As shown in Figure 4, the control of the decision-making process on CBNRM in Derre lays within the associates of ACODEMAZA, leaving out most of the community members who cannot afford to pay the membership fees. Here, the legitimacy of this structure is questionable.

Box 2: ACODEMAZA, the driver of CBNRM in Derre Forest Reserve

ACODEMAZA was created in 1999, with 448 members (out of which 119 are women). The objective of the association is to protect natural resources through control of harvesting, and containment of uncontrolled burning.

The secretariat of the organization coincides with the local power structures, especially the traditional leadership which includes the coordinator of the nucleus in Golombe, the secretary, the treasurer and the assistant. In fact, all of them belong to the same family. This is the main factor used by ACODEMZA to have legitimacy at least if not in the whole community, but with the local power structures, both formal and informal. This seems to comply with the perception that ACODEMAZA is an elite 'movement'.

According to the law, ACODEMAZA as an association could be part of COGEP, together with the representatives of the community at large. The private sectors formal involvement in what can evolve to a COGEP needs some negotiation and proof of likely benefits.

Box 3: Roles, powers, and problems of traditional authorities

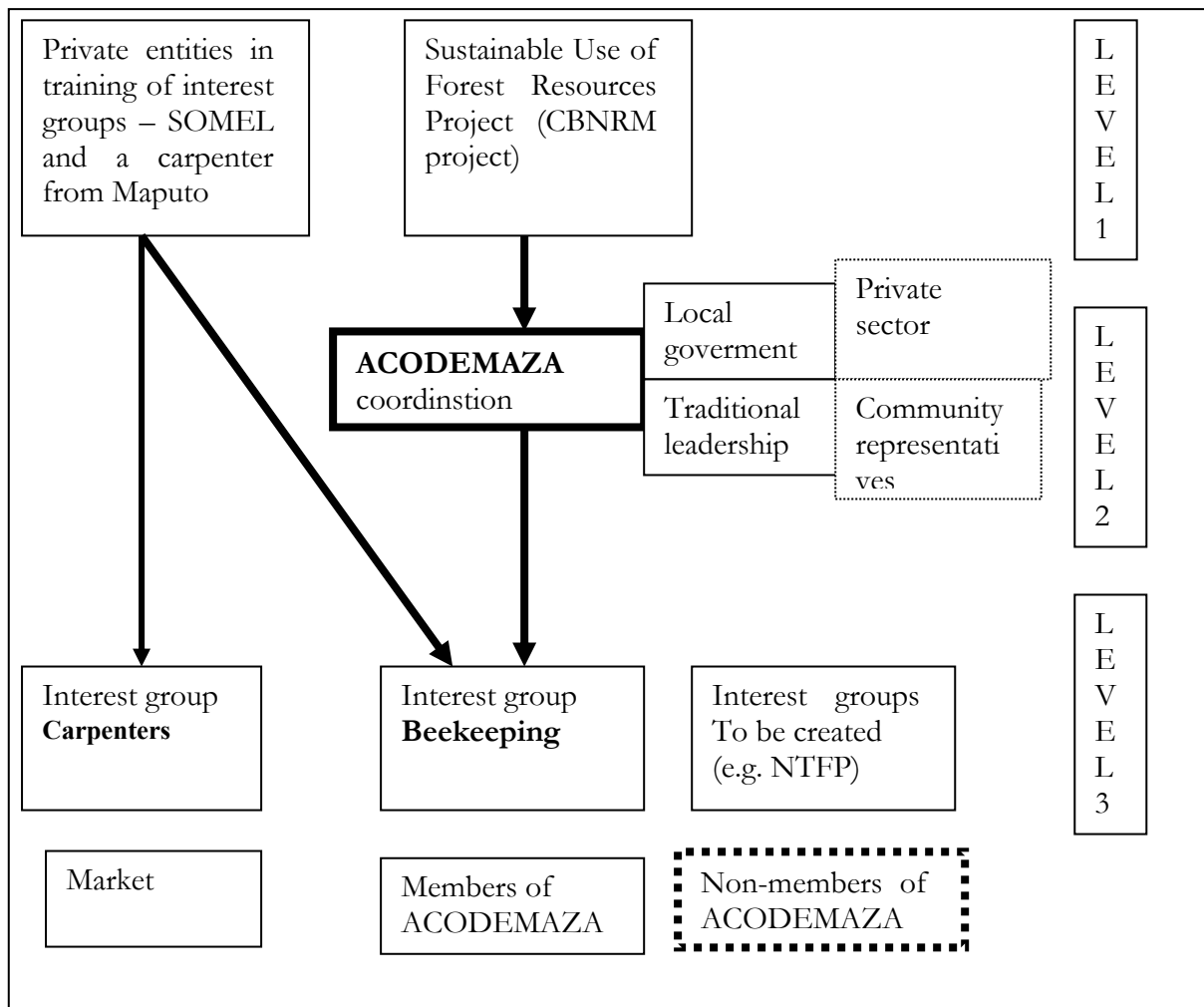
The roles of the traditional leadership include mobilization of the population to participate in maintenance of infrastructure, such as roads and schools, collect taxes and mobilize the children to go to school.

The leader cannot allocate forest resources for commercial purpose (due to the fact that the area is a Reserve), unless the government issues a license.

Everybody works as a forest guard in the area, however four people were especially trained by ACODEMAZA for that effect. Harvesting forest products for consumption (firewood, construction, etc.) is allowed to the residents.

A decision was made to substitute the current Traditional Chief for being inactive. This was decision taken within the family of the chief and the decision was informed to the local government.

Figure 4: Various stakeholders involved in CBNRM at Derre



The adherence of the private sector might have a drawback – that they control all decisions or else make it a really elite committee, which is likely to team up with the traditional and formal leadership to dictate the process to the users. At the community level, there should be, in addition to ACODEMZA, a true representative of the community elected by them. This at least would serve to guard the interests of those who are non-members (below Level 3, in Figure 4). The absence of such structure will limit the potential for those outside ACODEMZA to participate in the process, to be part of the decision structures and, potentially, to receive benefits as envisaged by the forestry regulations.

Level 1 depicts the project and links with the private sector that are providing capacity building. It can be argued that the project approach depends significantly on the role played by its two branches, ACODEMAZA and the private sector (carpenter and SOMEL). Having said that, and provided that a management committee is created by the non-associated, the link with ACODEMAZA and the private sector has the potential for establishing the COGEP as defined in the Forestry and Wildlife policy and legal framework. It can also be argued that the institutional model being applied in Derre does not fall under any of the four models of CBNRM in Southern Africa described by Shackleton and Campbell (2001).

In addition, the legislation of Mozambique proposes the devolution of decision-making powers over the resources to a lower level. However, the resource base is relatively poor, and the local institutions are weak and fragmented and may be easily corrupted. ACODEMAZA exists as a legal entity (an association); it is sponsored through the membership fee system and through its connection with various partners (including the link with DNFFB through the CBNRM project, which supports the implementation of a myriad of activities). A fuzzy model is therefore emerging in this situation, which, hopefully, will become more clearly defined as the experience is consolidated.

The rationale for implementation of the social and ecological objectives defined by the government in the Forestry and Wildlife Policy (1997) is that communities should have access to resources. In addition, the building of partnerships with the private sector and the government is proposed as one of the ways to ensure that revenues can be generated and equitably distributed to the beneficiaries. It is, therefore, clear that CBNRM will not just present itself as a viable option for communities, neither in the multiple use areas nor in the protected areas. The role of a facilitator of the process is paramount. Consequently, most of the over 42 experiences reported in the study by Matakala and Mushove (2001) have been initiated with outside assistance, in some cases the government, but in general through NGO-initiated projects. Derre is no exception; the principal partner is the Finish-funded project (Figure 4), which provides funds and technical support.

During the interviews, some members indicated that one of the reasons for being a member of ACODEMAZA is the capacity of this organization to link with actors outside the district, hence the potential for partnership. Appendix 2 presents the network that ACODEMAZA has established with various institutions. The major expectation of members is for employment. This was specifically mentioned in relation to the private sector. However, the current links with the private sector (loggers) are based only on the exploitation of cheap labour. Nonetheless, capacity building on the two activities mentioned earlier is being carried out by the private sector (the honey cooperative and the carpentry project, both based in Maputo). Therefore, there is some potential for such collaboration to be nurtured; however, the absence of resource tenure rights certainly diminishes the bargaining power of the local institutions.

The involvement of communities for sustainable use of natural resources: a real or mythical strategy for local development

In Mozambique, any major impact of CBNRM in improving livelihoods of the people is still a myth. The major bottlenecks include the fact that although there are good intentions (of devolving control over resources to the community level, of ensuring the flow of financial benefits to community groups, etc.), the process and pace are too slow to produce any short-term significant impact. Overcoming the constraints of the very limited rights in protected areas has to be achieved before the Derre community can expect any gains from participating in a CBNRM system.

There are opportunities provided for poverty alleviation through access to natural resources policy discourse that can serve as a basis for the community of Derre to obtain rights over resources. Matakala and Mushove (2001), for example, further list eleven projects partly or entirely within protected areas, making the issue a priority at national level. Clear policy on the rights of communities in these areas has to be defined. Currently, this issue is being debated at the national level. In Derre, where encroachment and growing populations have removed much of the value of the reserve per se, the formal removal of 'protected area' status for part of the intensively use forest may be the solution. The subsequent creation of a buffer or support zone would allow communities to have some rights in the area, although subject to the sustainable use of resources. In short, the first policy challenge for Derre is to secure rights in an area of primary state jurisdiction.

The implementation of the projects in general has been *ad hoc*, and the process is defined by the experience of the implementers, more than by clear guidelines that the country can follow, as is the case of the

conservancies and Practitioners Guide of respectively, Namibia and Botswana. The danger is that the devolution of power will be to the wrong level and to an unrepresentative entity. Local elites can easily hijack the process, as in is the case of ACODEMAZA in Derre.

Therefore, the second challenge (policy implementation level) is for the community, especially people outside the ACODEMZA association, to become aware of their rights under the Forestry and Wildlife and Land laws in order to take the lead in forming an institution that truly represents them and that can be part of what seems a good prospective COGEP being developed.

One of the even more serious problems is that the introduction of enterprises is not backed by a cost-benefit analysis, which can indicate the financial, economic and social viability of the investment that each farmer has to make. Farmers' preferences have priorities in terms of a range of enterprise possibilities that he/she might be involved in, which are as important as a consumer's preference for the produce that will be made available. Consequently, ignoring these two is likely to have a negative effect on the farm income and on the potential for livelihood improvement. The third challenge is thus to adopt financially viable enterprises in order to ensure long-term investment as indicated in Figure 2.

Furthermore, the uncertainty of obtaining positive outcomes is great, as households and communities enter into a new business domain; that is, gaining with conservation of natural resources through CBNRM, hence the need to understand the strata of risk aversion and risk taking. This will clearly depend on the probability of realizing the expected outcome. This may sound like prescriptions for a large investment. However, establishing CBNRM as an economically and ecologically viable option will certainly influence the choices that households will make to invest or otherwise. They are likely to go beyond the satisfaction of food requirements to the choice of what is best in terms of income or return from their investment. The resulting challenge is how the variables of technology, funds, and market can provide minimum risk options for the community.

Conclusion

This paper presented the main policy discourses governing participatory natural resources management. The policy framework provides for devolution of resources to the local level; however there is a lack of uniformity across various initiatives, largely due to the lack of a clear process framework to guide the various actors. There are some policy gaps that have to be looked at regarding the rights of access for communities living in and around protected areas. How those communities can benefit from the equity notion, just like people living in

multiple use areas, remains an important issue to resolve, particularly in the context of the establishment of additional protected areas where resident populations exploit natural resources as a major part of their livelihood strategies (for example, the Limpopo Park, the Bazaruto Archipelago, Quirimbas). During discussions with the various actors, the issue of land rights did not seem to be as much of a priority as the forest products. This is due to the assumption that land belongs to the community through customary rights. However, the Derre community has come to understand that this does not apply to the resources on that land, and this is especially exacerbated by the status of the area in which they live in.

In Derre, two institutions prevail: the traditional authorities and local government, both with a strong presence in ACODEMAZA's leadership. There are conflicts within the traditional institutions, mainly due to power struggles, and the perceived inefficiency of some of the chiefs. Even though the two institutions that supposedly represent a larger constituency are part of ACODEMAZA, they have limited impact on the defence of the interests of the majority, since many are excluded by the membership fee system. This threatens to further deny the rights of the communities. Therefore, dissemination of information on the rights of the communities is urgent, as the current institutional arrangement in Derre seem to suggest that the local perception of ACODEMAZA being an elite movement is likely to affect the involvement of the poorest members of the community, hence contravening the spirit and aims of the current natural resources management policy framework and poverty reduction thrust.

The model of CBNRM is evolving, having five pillars: decision-making power, resource ownership, access to funds, access to technology and access to markets. The challenge and major lesson in this case study is that a rural development approach has to be adopted in order to change the household economy in Derre. For example, it was clear that issues related to access to education, health services, and market infrastructure are fundamentally lacking in Derre.

In common with nearly all projects in Mozambique, the project of Derre has an outside genesis (Finish/DNFFB). The project works in partnership with a local association as well as bringing knowledge to enhance the capacity for deriving benefits from natural resources. The likelihood of the current players forming a COGEP is high. However, the issue of community representation has to be resolved and the beneficiaries of income-generating activities should not be restricted to the members of the association.

Analysis of income generating activities should strive to identify those, which reconcile better the conservation and development objectives (such as food security, employment, income generation, and access to markets). Therefore, adequate land use planning is essential to avoid implementation of conflicting land uses such as harvesting forests for



wood or for expansion of agricultural practices for cash crops and bee keeping.

Finally, there are internal (community) strengths and weaknesses that have to be addressed. However, the emphasis should be on the need to disseminate policy and legal instruments, and create adequate channels of communication between the various stakeholders. This is both the role of the government, but also of development facilitators (for example, NGOs and project management teams).

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Appendix 1: health info in the two districts

Table 1: Number of beds in the National Health Service in 1998-1999

| DISTRICTS | 1998 | | | 1999 | | |
|-----------------------|-----------|--------|-------|-----------|--------|-------|
| | Maternity | Others | Total | Maternity | Others | Total |
| Maganja da Costa | 23 | 20 | 43 | 23 | 20 | 43 |
| Morrumbala | 30 | 25 | 55 | 26 | 50 | 76 |
| Total in the province | 473 | 1004 | 1477 | 494 | 1075 | 1569 |

Source: INE (1999: 27).

Table 2 Number of health service units in 1998-99

| DISTRITO | 1998 | | | | 1999 | | | |
|------------------|-----------|------|------|-------|-----------|------|------|-------|
| | Hospitals | C.S. | P.S. | Total | Hospitals | C.S. | P.S. | Total |
| Maganja da Costa | | 1 | 11 | 12 | | 1 | 11 | 12 |
| Morrumbala | | 1 | 4 | 5 | | 1 | 9 | 10 |
| Total | 1 | 24 | 133 | 161 | 4 | 24 | 146 | 174 |

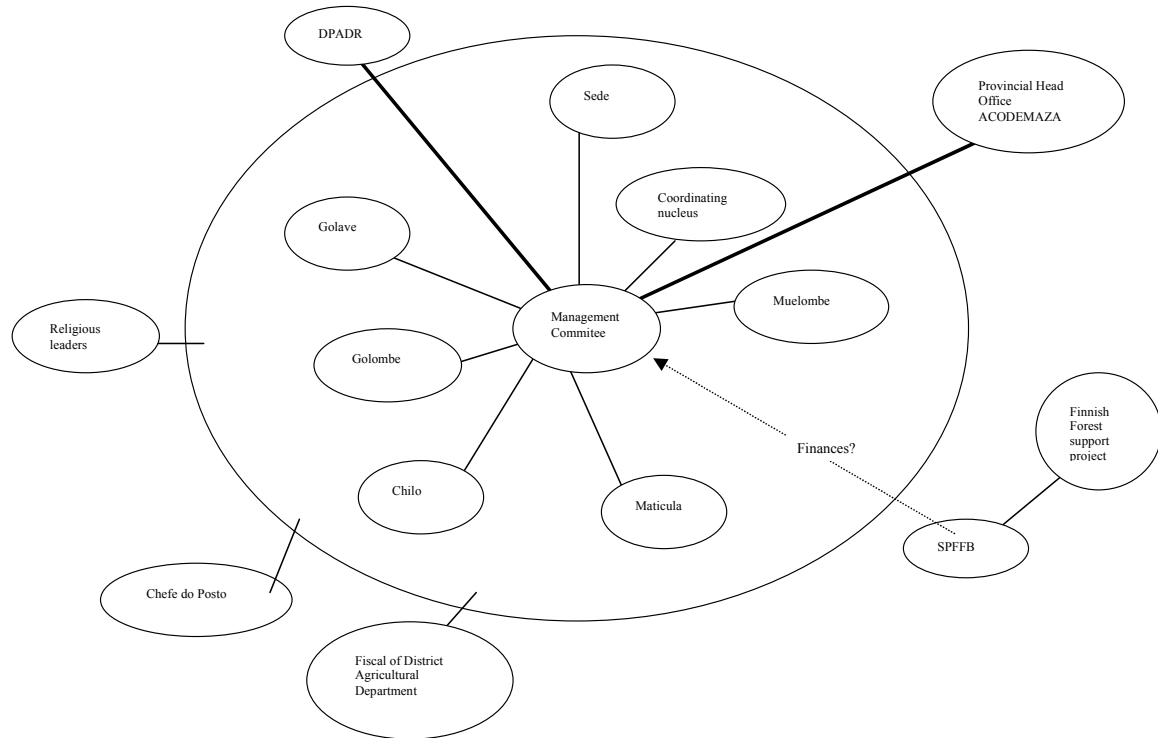
Source: INE (1999: 29).

Table 3: Equipment and health personnel in 1999

| DISTRICT | Equipment | | | Health professionals | | | | |
|------------------|-----------|------------|--------------|----------------------|-----------------|-------|------------|-------|
| | Vehicle | Motorcycle | Refrigerator | Doctors | Technical level | Basic | Elementary | Total |
| Maganja da Costa | 1 | 5 | 7 | 1 | 3 | 12 | 18 | 34 |
| Morrumbala | 1 | 6 | 9 | 1 | 3 | 22 | 15 | 41 |
| Total | 47 | 99 | 133 | 36 | 173 | 545 | 528 | 1282 |

Source: INE (1999: 29).

Appendix 2: institutional links between ACODEMAZA and others, Derre, 23/07/01





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